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Higher-level vocational education and training qualifications: Their importance in today's training market

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A National Vocational Education and Training **Research** and **Evaluation** Program **Report**

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Publisher's note

Additional information relating to this research is available in *Higher-level vocational education and training qualifications: Their importance in today's training market—Support document*. It can be accessed from NCVER's website <http://www.ncver.edu.au/publications/1800.html>.

To find other material of interest, search VOCED (the UNESCO/NCVER international database <http://www.voced.edu.au>) using the following keywords: ageing population; older worker; retraining; retirement; retirement age.

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Foreword

Recent policy and industry papers have highlighted the need for higher-level skills to meet the challenges of globalisation and internationalisation of markets, technological and demographic change, as well as the changing nature of work. The vocational education and training (VET) sector has responded to these calls by endeavouring to improve participation in existing higher-level VET courses (certificate IV, diploma and advanced diploma, vocational graduate certificate, and vocational graduate diploma), as well as developing new qualifications at these levels.

The aim of this research was to examine the take-up of higher-level VET in the context of changing industry and market demands; whether these qualifications met industry imperatives; and how higher-level qualifications could be improved.

The sectors targeted for this research cover the service and manufacturing industries, and those chosen in particular were disability services, nursing, engineering technologies, electronics, multimedia and design. These industries draw on both higher education and VET-trained graduates at the associate professional and senior technician level.

One of the important findings of this research is that many of those who have completed higher-level VET qualifications are employed in jobs not commensurate with their qualification level. Entry-level job applicants with a higher-level VET qualification are in an extremely competitive job market, competing with existing workers with a high level of technical competence *and* workplace experience, as well as, in some cases, people with university degrees. The challenge for the VET sector is to make its graduates more competitive; perhaps extended and practical workplace experience needs more emphasis.

This research was undertaken under the National Vocational Education and Training Research and Evaluation program, a national research program managed by the National Centre for Vocational Education Research (NCVER) and funded by the Australian Government and state and territory governments.

This report is likely to be of interest to VET policy-makers, industry bodies, industry skills councils and course developers from both public and private providers.

Tom Karmel

Managing Director, NCVER

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Key messages

This project investigated higher-level vocational education and training (VET) qualifications (certificate IV, diploma and advanced diploma, vocational graduate diploma) in six sectors across three industries: disability services, nursing, engineering, electronics/electrotechnology, multimedia and design. It examined the relevance of higher-level VET qualifications for enterprises and employment outcomes for students; how higher-level VET qualifications might be improved; and the implications of the new associate degree for higher-level VET qualifications.

- Higher-level VET qualifications have a role to play in meeting employers' needs for more highly skilled workers, but employers do not necessarily favour graduates with higher-level qualifications. The value and role of these qualifications differs across sectors studied; for example, the requirements for entry into enrolled nursing are quite different from those required for multimedia and design.
- Course developers need to work very hard to establish the credibility of higher-level qualifications in the eyes of employers. Higher-level qualifications need to:
  - emphasise generic skills, such as the ability to deal with change and problem-solving
  - involve substantial work placement/experience opportunities (which will be a challenge to organise).
- Currently, the role and value of the associate degree is little known, nor does evidence exist that the associate degree will have an impact upon participation in higher-level VET qualifications.

Executive summary

The purpose of this project was to investigate the relevance of higher-level vocational education and training (VET) qualifications for addressing the skill needs of industry and enterprises.

Higher skills are required to meet the challenges of globalisation and internationalisation of markets, technological and demographic change, as well as changes to the nature and operation of work. Higher-level VET qualifications have been substantially developed in both training packages and state-accredited courses. The Australian Qualifications Framework (AQF) has also been expanded to include the new qualifications of vocational graduate certificate, vocational graduate diploma in VET, as well as associate degree in higher education (Australian Qualifications Framework 2006).

The research focus and approach

The research explored the apparent inconsistency between industry and government policy drives for an increase in the level of skills, participation in higher-level VET qualifications and the use of these qualifications in the labour market. Higher-level VET qualifications were identified as: certificate IV; diploma; advanced diploma; vocational graduate certificate; and vocational graduate diploma. Associate degrees are delivered in higher education, but are included in the study as they are in potential competition with higher-level VET qualifications.

The relationship between employment outcomes and the uptake of higher-level VET is complex. Higher-level VET qualifications are aligned to employment at the associate professional level of occupations. These occupations involve a small (13%) but growing share of the employed population (Allen & Gientzotis 2002). However, despite government policies supporting the uptake of these qualification levels, growth in these occupations is not matched by growth in participation in higher-level VET qualifications. In fact, in recent years enrolments in higher-level VET have declined. Furthermore, many associate professionals do not hold higher-level qualifications.

Graduates of higher-level VET qualifications do gain employment at a higher rate than do other VET graduates, yet their employment may be in positions lower than at the associate professional level. Employment opportunities in associate professional positions increase after gaining experience in the workforce (Stanwick 2006). These employment outcomes are partially related to graduates' aspirations and the nature of the qualifications held. However, the skill requirements and employment practices of employers determine the final employment outcomes.

The following research questions guided the investigation:

- Why do higher-level VET qualifications not translate into labour market outcomes for some participants?
- How can higher-level VET qualifications be improved to better meet employers' and students' needs?

- What is the likely effect of associate degrees on participation in diploma and advanced diploma courses?

The project focused on a range of diverse industry sectors (engineering, electronics/ electrotechnology, disability services, nursing, multimedia, and design) in order to gain a broad view of the influences determining the uptake and demand for higher-level VET qualifications. The research included a review of the relevant literature on higher-level VET skills and qualifications. Quantitative data on participation in higher-level awards and the outcomes of these programs were also collected. Qualitative data were collected through focus groups and interviews with representative enterprises, students enrolled in higher-level VET qualifications and training package developers in all six industry sectors.

Higher-level VET qualifications in the labour market: A complex picture

Employers interviewed identified a range of drivers of skill needs, including rapid technological change; globalisation and competition; external regulation and compliance; demographic change; difficulties in attracting and retaining staff; industry restructuring (in electronics/ electrotechnology); and increased non-standard work.

Employers reported that, to meet these challenges, they need a workforce that is able to deal with change and has strong problem-solving abilities, communication and organisational management skills and business acumen. Employers also require the ability to deploy their workforce flexibly across a range of service areas, particularly in disability services and nursing where clients present with complex needs that do not fall neatly into service areas of aged care, disability, drug and alcohol, or nursing. Workers increasingly require a high level of specialisation, together with a strong understanding of allied work roles. In the engineering and electronics/electrotechnology industries workers need to be able to understand and work with integrated systems.

Employers differed in their perceptions of the value of higher-level VET qualifications in meeting their needs for higher-level skills. Three viewpoints emerge that are aligned to the industries sampled:

- *Clear expectations of required qualifications* are provided for those in nursing and disability services, reflecting the highly regulated nature of the industry, particularly in nursing. A minimum of certificate IV is required for work as an enrolled nurse in most states and territories, other than South Australia and Queensland where a diploma is required. The industry is seeking to introduce requirements for qualifications for disability service workers but at a certificate III level, except in Victoria where certificate IV is required for permanent government positions for those providing services to clients. Certificate IV and diploma-level training are used by those seeking management roles in disability services.
- *A relevant qualification together with workplace experience* is valued by employers in engineering and electronics/electrotechnology fields. Higher-level VET qualifications are required for those occupying principal technical officer roles in engineering. They were also valued by the chemical manufacturer (from the engineering sector) for managing risks associated with training in occupational health and safety and in developing autonomous, self-directed workers across all occupation levels. Employers in the engineering and electronics/electrotechnology sectors preferred university graduates or a trade background augmented by workplace experience and further training for associate professional roles. This may include higher-level VET training. Students undertaking higher VET qualifications in institutions are at a disadvantage in the competition for employment at an associate professional level, relative to existing workers and university graduates.

- *Experience and talent, as demonstrated through portfolios, are preferred over qualifications* by employers in the creative industries of multimedia and design. Where qualifications were required, the majority of employers interviewed preferred higher education graduates over VET graduates. Employers in the multimedia and design sectors demonstrated limited understanding of what higher-level VET qualifications offered. However, graphic design students with VET diplomas and advanced diplomas were valued as much as university graduates. The design and multimedia sectors are not subject to the same level of regulation as the other sectors, being characterised by small businesses and sole traders, as well as being integrated with other industry sectors. These factors are likely to contribute to the looser association between qualifications and job roles relative to other sectors examined.

Higher-level VET qualifications will satisfy employers' needs if they:

- are up to date and provide for emerging needs and job roles. Training packages are tightly specified to particular occupations, which constrains their timely adaptability to changes in occupations. Relaxing the rules for the development of training packages to increase the range of options within and across training packages would reduce the constraining effects of tight specification to particular job roles and occupations
- integrate knowledge and skills across job roles and streams within the industry, including the ability to work across systems in engineering and electronics/electrotechnology roles
- increase work and industry experience to improve job outcomes for students undertaking higher-level VET qualifications in order to gain entry to employment in associate professional roles
- are credible to employers in the creative industries.

Associate degrees

Associate degrees are a relatively new addition to the Australian Qualifications Framework. They are delivered in higher education institutions. The associate degree is, at this stage, relatively unknown to employers and students in interviews and focus groups. No evidence exists to indicate that the associate degree will have an impact on participation in higher-level VET qualifications.

While there is little awareness of this qualification at present, there is potential for associate degrees to provide an alternative to advanced diplomas or a complementary pathway into an advanced diploma. Associate degrees may provide for employers' needs for employees with broader knowledge and skills, as well as the ability to work with greater autonomy, to be self-directed and to problem-solve across a range of situations within the industry context.

Conclusion

This research found that higher-level VET qualifications are valuable tools for providing higher-level skills and knowledge as required by employers, particularly in the highly regulated environment of nursing. However, employers in the multimedia, design, engineering and electronics/electrotechnology sectors fail to recognise the value of these qualifications.

The key areas where improvement is indicated lie in ensuring that higher-level qualifications are designed such that students' expectations for employment-related outcomes are realised by including opportunities within training programs for extended and practical workplace experience.

Introduction

The purpose of this research is to gain insights into the current and future delivery of higher-level vocational education and training (VET). The research considers the expressed need for higher-level skills as described in policy initiatives and industry reports and the subsequent responses from the VET sector both to improve participation in existing higher-level VET qualifications and develop new qualifications. These initiatives are contrasted with individuals' views of their learning programs and enterprise views of their skill requirements.

The context for higher-level VET

The skill needs of the economy have gained prominence in the media in recent times. Radio talk-back programs, news and current affairs programs on TV and newspaper headlines all report on a crisis in skill supply, particularly in skilled labour areas. While industry is exhorting government to assist them in addressing skill shortages, some employers are recruiting their employees from overseas (Foster 2006). The need to increase the supply of skilled workers to the economy has long been a focus of government, although today's drivers are more immediate and extensive than in the past. The Prime Minister, John Howard, recently announced new incentives to encourage employers and existing workers to undertake diploma and advanced diploma qualifications, particularly in engineering fields. The Australian Apprenticeships Incentives Program will be extended to support training at diploma and advanced diploma levels by:

- removing the rule which prevents workers with prior qualifications from attracting the Commonwealth incentive payment to employers
- extending the Incentives Program to existing workers
- increasing the range of eligible higher-level VET qualifications, particularly in engineering (Howard 2006).

The desire to increase participation in higher-level VET qualifications is not new. As the Australian training system expanded and became more sophisticated in the early 1990s, there was an acknowledgement of the need for vocational education and training to extend beyond entry-level skills to middle-level qualifications to address the increasingly complex skill requirements for higher-level workplace skills (Employment and Skills Formation Council 1993). Growth in medium-sized businesses and the increase in self-employment, coupled with the growth of high valued added exports, had focused attention on middle-level skills and their role in improving productivity and exports. It was proposed that middle-level qualifications would also assist the existing workforce to gain recognition of prior learning and improve access for diverse groups and those in rural locations (Employment and Skills Formation Council 1993).

Globalisation and the knowledge economy

In recent years, the focus has been on skills for the 'new' or 'global knowledge' economy, which has encouraged the growth of knowledge-intensive goods and services. Globalisation of

economic activity has driven calls for higher-level skills to improve the capacity of the labour market and increase international competitiveness. Globalisation has seen the rise of low-cost economies in south-east Asia, particularly in India and China, resulting in off-shoring of routine production activities. The impact on industries such as process manufacturing is driving local enterprises to seek alternative markets using more sophisticated and knowledge-intensive processes for competitive advantage (Foster 2006). In other words, 'we must choose the high-skill option of competitive industries and quality jobs' (Allen Consulting Group 2000, p.ii).

Other major drivers of skill supply and demand include:

- the rapid development and improvement of communication and information technologies, including the increased pace of technological change and deregulation both within and across national boundaries (Chappell, Hawke & Schofield 2002)
- the effects of changes to the conduct and organisation of work that extend the workplace beyond the enterprise as they involve networks of production, supply chains and outsourcing of labour and production (Lewis 2004)
- changes to the conduct of work that require a greater personal skill investment in work, including greater deployment of personal autonomy and generic skills across all occupational groups (Buchanan et al. 2001)
- skill shortages that result from rapid economic growth in the 1990s, particularly in higher-level occupations (Richardson 2007).

This context of globalisation, technological change and the changing nature and conduct of work have resulted in two areas of major skill demand:

- higher-level skills to serve the needs of industry, particularly associated with the growth of knowledge work
- lower-level skills associated with the growth in employment at lower occupation levels, particularly in service areas, but requiring greater complexity and a general shift to higher-level skills within lower occupation groups (NCVER 2003).

VET has a key role in developing skills for the new economy, as Fitzgerald (2001) argues:

> across the Australian economy generally, demand for those with VET skills, especially middle level and advanced VET skills, is both much larger than demand for HE [higher education] graduates and is the area of fastest growth of labour requirements by a significant margin: half as great again as projected growth in overall labour demand over the half decade we have just entered (p.4).

An analysis of the supply and demand of workers with qualifications in the Victorian labour market also confirms the role of higher-level VET in providing higher-level skills (Shah & Burke 2005). Shah and Burke (2005) projected an increase in the numbers of workers requiring higher levels of training in the period to 2015. The projections identified a growth in the proportion of workers with diploma and advanced diploma qualifications as well as growth in the numbers of workers holding both university and VET qualifications.

Policy to develop higher skill levels will target both the overall profile of skills in the population and increased participation in education and training at higher levels of certification. This will provide both a higher level of overall skill to the economy and benefits to individuals in terms of improved employment, higher wages and promotion opportunities (Sherman 2006).

What are we looking at? The Australian Qualifications Framework and expected outcomes

The training system has responded to demand for higher-level skills by extending the range of qualifications available to students in formal, recognised qualifications in VET and higher education. The most recent additions to the Australian Qualifications Framework (AQF) have focused on higher-level vocational skills.

Formal, recognised qualifications are described within the Australian Qualifications Framework, which classifies the qualifications that are conducted in schools, training and higher education. Importantly, work-based qualifications and academic qualifications are part of a single system. The organisation of Australian Qualifications Framework awards is described in table 1. Higher-level VET awards extend from certificate IV to the vocational graduate diploma.

Under the Australian Qualifications Framework, the diploma and the advanced diploma are considered dual-sector qualifications. Higher education self-accrediting and non-self-accrediting institutions accredit programs at these levels. The VET sector also provides nationally recognised diplomas and advanced diplomas through either training package endorsement or via state accreditation processes.

Table 1 AQF qualification by sector of accreditation

Schools sector accreditation	Vocational education and training sector accreditation	Higher education sector accreditation
		Doctoral degree
		Masters degree
	Vocational graduate diploma	Graduate diploma
	Vocational graduate certificate	Graduate certificate
		Bachelor degree
	Advanced diploma	Associate degree
		Advanced diploma
	Diploma	Diploma
Senior Secondary Certificate of Education	Certificate IV	
	Certificate III	
	Certificate II	
	Certificate I	

Source: Australian Qualifications Framework Advisory Board (2006)

The features that distinguish the higher-level VET qualifications from those at the lower end of higher education are that they are based on industry-endorsed competencies, may be integrated into training packages, and have distinct vocational outcomes.

The Australian Qualifications Framework is not a fixed construct. Recent changes to the suite of awards have added qualifications at the intersection of VET and higher education, including the vocational graduate certificate and the vocational graduate diploma. These new awards are designed to provide for greater flexibility in the qualifications framework as a response to a need for the higher-level skills so necessary for ensuring economic growth and increased productivity. They also allow greater flexibility to assist lower-skilled individuals to access pathways to work and further study. These qualifications offer 'a short-cycle VET-sector graduate pathway alternative to the graduate certificate or graduate diploma' as well as a VET-sector pathway from the bachelor degree for specialist industry or enterprise competencies' (Australian Qualifications Framework Advisory Board 2006).

The associate degree was endorsed by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in 2004. The associate degree enables both non-self-accrediting higher education providers and self-accrediting higher education providers to provide a qualification at this level.

Further information on the nature and intent of each qualification is provided in the support document to this report.

Where is demand for higher-level VET qualifications likely to come from?

Higher-level VET qualifications were developed with the intention of training associate professionals, trade and technical people in advanced occupational and management skills.

Demand for skills developed through higher-level VET courses may be inferred from the number of people employed in occupations that require skills at that level (Richardson & Tan 2007). In the period 1996–2002, labour market statistics showed associate professionals to be the fastest growing occupational group with a higher percentage of job openings than any other group (Allen & Gientzotis 2002). This trend continues today, with the largest increases from 2004 to 2005 occurring in managers and administrators (up by 95 100), associate professionals (up by 83 100) and elementary clerical, sales and services workers (up by 47 300). The growth rates in employment in the 12 months to May 2005 include increases for associate professionals of 7% (Department of Employment and Workplace Relations 2005).

Professionals (5.3%) and associate professionals (6.0%) had the highest rates of job openings for new entrants for the period 1997–98 to 2001–02 compared with the rate for all jobs (4.2%). Growth in these occupations was forecast to continue (Cully 2005).

It could be expected that this growth in potential demand would be reflected in growth in participation in higher-level VET courses.

Participation in higher-level VET qualifications

Increased participation in higher-level VET qualifications would, in part, provide some evidence of the role of higher-level VET in meeting demand for higher-level skills and VET qualifications, although this is qualified by the influence of funding decisions and available places. This discussion is limited to formal publicly funded qualifications. There is also a range of privately provided qualifications, but as data are not available on participation in these qualifications they are outside the scope of this paper.

Recent years have seen a decrease in the level of participation in diplomas and advanced diplomas in the VET sector. Students undertaking AQF qualifications in 2005 represented over two-thirds (69%) of the total VET population. The proportion of these students undertaking certificate IV or higher qualifications declined to 31% in 2005, down from 34% in 2000 and 33% in 2004 (NCVER 2006a). Table 2 provides further information on the distribution of students across AQF qualifications.

Student numbers at diploma level and above grew by 73% between 1991 and 2001, slightly below the growth in numbers in other VET courses. Most of the growth at diploma level and above took place in the early 1990s from a relatively small base. Since 1995, growth has been relatively slow compared with other VET courses; and numbers have increased by a modest 14% compared with 42% for other VET courses. While numbers in diploma courses declined from 164 100 in 1995 to 152 300 in 2001, the number of students in AQF advanced diploma courses tripled, from 13 100 in 1995 to 47 700 in 2001, albeit from a low base (Department of Education, Science and Training 2002).

Table 2 Students by major courses and qualifications (AQF qualifications), 2000–05

	2000 ('000)	2001 ('000)	2002 ('000)	2003 ('000)	2004 ('000)	2005 ('000)	2005 %	2004–05 % change
AQF qualifications								
Diploma or higher	198.0	200.6	197.3	188.4	175.9	173.1	10.5	-1.6
Certificate IV	172.4	189.0	193.9	198.3	189.6	179.1	10.9	-5.5
Certificate III	345.9	372.2	381.7	400.3	408.1	437.7	26.7	7.2
Certificate II	285.5	293.2	287.8	264.2	248.2	248.0	15.1	-0.1
Certificate I	79.8	81.0	88.4	86.9	82.7	94.0	5.7	13.7
All students (AQF qualifications)	**1081.5**	**1136.0**	**1149.0**	**1138.1**	**1104.6**	**1131.9**		

Source: NCVER (2006b, derived from tables 18 & 19)

As stated above, both universities and technical and further education (TAFE) institutes provide diploma and advanced diploma courses. VET appears to be the provider of choice for people undertaking accredited programs at that level. During 2001, 2913 students were enrolled in advanced diplomas in institutions of higher education, and in the same year 51 300 enrolled in advanced diplomas in VET institutes. Students enrolled in diploma studies in higher education numbered 6601, while 173 500 students undertook diploma studies at VET institutes (Allen & Gientzotis 2002).

Students enrolled in associate degrees represent a small share (less than 1%) of all higher education students (Department of Education, Science and Training 2006). In 2005, associate degree students numbered 2855 compared with 1952 in 2004. Enrolments at associate degree level grew (46%) from 2004 to 2005. This growth corresponded to a decline in undergraduate program enrolments, which include the diploma and advanced diploma (-11%) level.

The decline in students enrolled in higher-level VET courses suggests that participation in these programs does not match the growing demand for higher-level skills. As Stanwick (2006) observes:

> There is plenty of scope for diplomas and advanced diplomas to play a more important role in occupations requiring higher skill levels. At the moment, they are not a major skill source for professional and associate professional occupations, with degrees being the main qualification source at professional level, and diplomas/advanced diplomas being less important than degrees and certificates III and IV at the associate professional level (p.15).

Outcomes from higher-level VET courses

The outcomes from higher-level VET courses also provide information on the extent to which these qualifications are meeting the growth in demand for higher-level skills. That is:

- ✧ Do those with higher-level VET qualifications gain employment at a level commensurate with their level of qualification?
- ✧ Do those in associate professional occupations hold higher-level VET qualifications?
- ✧ Are higher-level VET qualifications used to upskill into associate professional occupations?

Do those with higher-level VET qualifications gain employment at a level commensurate with their level of qualification?

Employment outcomes for those completing diploma or advanced diploma courses are mixed, with many graduates employed below associate professional level in the short term (six months after graduation). This is particularly the case for school leavers, and to a lesser extent for those aged over 25. Experience, in addition to the qualification, is likely to be required by employers, as

employment at associate professional level increased in the longer term of 30 months after graduation (Stanwick 2006).

Students in higher-level VET qualifications may choose to use the qualification as a pathway to further study, rather than employment. In 2003, around 13% of commencing higher education students had a VET diploma or advanced diploma as their highest level of qualification, particularly those with a VET diploma (Stanwick 2006).

Do those in associate professional occupations hold higher-level VET qualifications?

The attainment of higher-level VET qualifications is not reflected in the qualifications held by those in associate professional positions. This is illustrated by the low level of associate professionals (only one-third) who hold the relevant qualification of a diploma or advanced diploma, despite the high rate of growth in employment for associate professionals. Over a third were found to have school-only qualifications as at May 2004 compared with only 13% who held a diploma or advanced diploma (Stanwick 2006).

The rate of certification at diploma and advanced diploma level, however, is higher for associate professionals than for the 7% of the general population aged 15 to 64 years at the 2001 Census who held diploma or advanced diploma qualifications from either VET or higher education (ABS 2003).

Are higher-level VET qualifications used to upskill existing workers into associate professional occupations?

Employers invest in training for employees, particularly those at the associate professional and professional occupation levels (Keating, Polesel & Watson 2005). However, this is not necessarily through higher-level VET training. Higher-level VET is in competition with university degrees and short vendor or professional association courses. The latter may not be accredited programs (Curtain 1998; Keating, Polesel & Watson 2005; Ridoutt et al. 2005). Curtain (1998) speculates that:

> Australia may follow the North American approach of using a large pool of university educated graduates to fill supervisory and technician level positions. The challenge for VET is to offer a product that better meets the needs of students and employers compared with other qualifications (p.40).

Conclusion and justification for the research questions

In summary, the literature suggests that government and industry increasingly value higher-level skills. This is a response to the dynamic context of globalisation, technological change, changes to the nature and operation of work and skill shortages in higher-level occupations. However, even though the need for higher-level VET skills is reflected in government policy and industry initiatives, the use of these qualifications by employers and by the public generally is not clearly understood.

There has been substantial development of qualifications in training packages at these higher levels and an extension of the Australian Qualifications Framework to include new qualifications in both VET and higher education.

Whether or not there is a real demand for higher-level skills and VET qualifications is uncertain, since little evidence exists in the literature to support claims for demand for higher-level VET qualifications. However, it has been shown that:

- participation in higher-level VET qualifications has not corresponded to the growth in skill needs in the labour market in relevant occupational categories
- growth in relevant occupations is not matched by a corresponding increase in people in these occupations who hold higher-level VET awards
- completion of higher-level VET qualifications may not necessarily result in employment at associate professional level in the short term
- employers are interested in upskilling their workers in higher-level occupations, but may prefer higher education, vendor or professional association programs over VET courses.

This project will explore the reasons for the mismatch between demand for higher-level skills and the outcomes of higher-level VET qualifications from the perspectives of employers, students and training package developers. The project will also provide suggestions for improvement in higher-level VET qualifications.

Methodology

The purpose of this research is to investigate the delivery of higher-level VET training in the context of learner and industry needs as well as its place within the delivery of AQF qualifications in VET and higher education.

Research questions

The project investigated three broad questions:

1. Why do higher-level VET qualifications not translate into labour market outcomes for some participants?
2. How can higher-level VET qualifications be improved to better meet employers' and students' needs?
3. What is the likely effect of associate degrees on participation in diploma and advanced diploma courses?

Certificate IV, diploma and advanced diploma qualifications are the focus of the research. Associate degrees are delivered in higher education, but are included in the analysis as they are potentially in competition with higher-level VET qualifications.

The approach

The approach to research included:

- a review of related literature on higher-level skills and qualifications and their use by employers and students
- quantitative analysis of data on labour force participation by relevant occupations, participation in VET and higher education awards, outcomes for students enrolled in higher-level VET qualifications and associate degrees
- qualitative data collection through
  - interviews with enterprises in selected industry sectors
  - focus groups with students enrolled in higher-level VET courses
  - telephone surveys of training package developers.

The targeted industries and sectors were disability services, nursing, engineering technologies, electronics, multimedia and design. They were selected to encompass:

- a sample of sectors from service and manufacturing industries
- sectors that draw from both higher education and VET at the associate professional level

- ✧ sectors that show increases in the nature and range of responsibilities of workers, which could signal corresponding requirements for higher levels of certification.

Sampling of enterprises within these sectors tried to represent a range of business activity and, where relevant, to include both large and small enterprises.

Data were collected through face-to-face interviews with employers, telephone interviews with training package developers, and focus groups with students in relevant courses. The sample is described in table 3.

Table 3 Numbers of employers, training package developers and students who contributed information to the research

Sector	Sample		
	Employers	Students	Training package/private course developers
Disability services	6	5	1
Nursing	6	14	1
Engineering	6	13	2
Electronics	6	13	2
Multimedia	6	17	1
Design	6	43	1

Full details of the methodology, including samples and the relevant data collection instruments, are provided in the support document for this report. The support document also contains the enterprise and student samples, the summary of industry perspectives and a summary of the focus group responses.

Discussion of findings

This research investigated questions related to labour market outcomes of higher-level VET qualifications and how these higher-level VET qualifications might better reflect employer needs. The relationship between the new associate degree qualification and participation in higher-level VET qualifications was also considered.

As explained in the previous chapter, the research examined these questions from the perspective of six industry sectors: engineering, electronics/electrotechnology, disability services, nursing, multimedia and design. The findings of the research are discussed below in relation to these industry sectors and the issues common to these sectors.

Why do higher-level VET qualifications not translate into labour market outcomes for some participants?

Higher-level VET qualifications are aligned to employment at the associate professional level of occupations, which involves a small (13%) but growing share of the employed population. Yet, as discussed earlier, graduates of these qualifications are not always able to gain employment at that level.

Consultation with employers, students and training package developers suggests that students' employment outcomes are not confined to the nature of qualifications held. They are likely to be influenced by the skill needs and employment practices of employers and the aspirations of the students themselves.

What are student intentions?

Labour market outcomes for VET graduates will be related, in part, to their reasons for enrolling in the qualification.

Getting a job was the main reason for enrolling in higher-level VET courses among students who participated in focus groups (table 4). This was particularly evident for those undertaking engineering, electronics/electrotechnology and design courses. The proportion of students who cited employment-related reasons for undertaking a VET course grew by 7% from 2001 to 2005, particularly for those undertaking a certificate IV. The next most popular reason for undertaking training was as a pathway to higher education, particularly for nursing and electronics students and also for those undertaking an advanced diploma (up by 6% from 2001). Just under one in five students were existing workers undertaking further skills development. These findings are consistent with the findings of the national Student Outcomes Survey (NCVER 2001, 2006c).

Table 4 Main reasons for enrolling in a higher-level VET course, focus group students (%)

	Multimedia	Design	Engineering	Electronics	Nursing	Disability	Total
As advanced training for experienced practitioners	18	18	15	8	14	100	**18**
For entry to employment	12	53	62	58	14	0	**41**
As substitutes for university qualifications	29	15	0	0	0	0	**10**
As a pathway to higher education	12	15	23	35	57	0	**24**
To assist with making a decision about a career	29	0	0	0	14	0	**7**
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Sample size	n=17	n=43	n=13	n=13	n=14	n=5	n=105

Source: Focus group participants

Higher-level VET courses are in competition with university courses—from diploma to associate degree as well as bachelor courses for students. Students in design, multimedia, electronics and engineering courses chose the higher-level VET course, as it provided a cheaper, less academic, skills orientation relative to the higher education pathway. This was for both entry-level students and experienced workers:

> Diplomas are cheaper and shorter with less theory and a wider choice of practical subjects. However, they are not as recognised as a degree and the resources aren't as good and there is less fee help. (Design student)

Other existing workers in electronics and disability services used the knowledge and skills to assist them to perform in their current work roles and in career progression:

> I was working as a chemical engineer and wanted the skills to assist me to automate many of the testing routines. (Electronics student)

Vocational education and training also assists multimedia, design, engineering, electronics and nursing students to gain employment. It is a quick option that will provide a return relatively quickly:

> In the creative industries it depends a lot on your portfolio rather than your qualification . . . so it depends on what course suits you . . . the diploma finishes more quickly so that means quicker employment, that's why I picked it. (Design student)

Students in each of the focus groups recognised that higher-level courses imparted a greater level of skill, status and opportunity by comparison with lower Australian Qualifications Framework courses:

> The advanced diploma provides greater depth and level of detail. You can get employment after the first year, but if you do the rest then you get more scope. Practical application and experience. (Design student)

> Advanced diploma sounds better . . . it's the highest level in TAFE. (Electronics student)

Certificate IV courses had different levels of value for students in different sectors. For students in design courses, certificate IV was perceived to be too basic to provide real value in the employment market, relative to higher-level VET courses:

> Certificate IV is not worthwhile. Diplomas or advanced diplomas are the pathway to a degree. (Design employer)
>
> You need at least a diploma to get a job. Cert IV isn't broad enough. (Design student)

Students in design focus groups stated that they were attracted to the emphasis on practical application and creative design aspects of the VET program:

> I was doing cabinet making in Germany and wasn't impressed. It wasn't creative enough for me. I was looking for a course in Germany that would teach furniture design and there was nothing with really practical exercises in Germany and I found TAFE and it was interesting and that's why I'm here, because of the practical things . . . I came specifically for study . . . all the way from Germany. (Design student)

Other students in creative industries of multimedia and design saw that attaining a qualification benefited them in refining their skills, but they also recognised that employers preferred a portfolio to qualifications as evidence of their suitability for a job:

> Industry doesn't care what you do or what you've studied, if they like what you do they'll hire you. The folio is more important than a qualification. (Design student)

Students' perceptions are influential in their choice of course, but whether or not they realise their aspirations depends on the nature of the labour market and decisions of individual employers, which are shaped by the forces affecting their businesses and skill needs.

What is the context for higher-level skills in enterprises?

A range of factors shapes employers' skill needs. Those drivers that are common to most industries studied are rapid technological change and globalisation and competition.

Rapid technological change

Technological change is the most common influence on the demand for higher-level knowledge and skills across the industries studied, particularly the influence of growth in digital technologies and convergence of these technologies with communications technologies.

The increase in automation of production processes, together with the convergence of digital and communications technologies in these processes, alters the nature of work in manufacturing; for example, using program logic through the network rather than motherboards, as well as new robotic welders and laser cutters. This has resulted in mechanical engineering and electrical engineering becoming closely aligned. Each must have a working understanding of the other's field of knowledge and skills. The growth in digital technologies provides a mixed set of requirements, including higher levels of skill such as:

> medical security, satellite technology, biometrics, television (cable and satellite). There are two groups, the functional people or installer and those who are getting up into the technical detail at the high end. Those who get into the top end just keep growing. (Training package developer)

While technologies are increasingly sophisticated in their design and functionality, servicing of equipment is simplified through increased 'plug and play' components. Technicians diagnose faults and then maintain the equipment until replacement components are supplied, rather than designing new solutions (industry service, water tools, medical technology).

The multimedia sector is subject to rapid technological change based increasingly on digital technology; this affords new creative and production opportunities as well as distribution streams

direct to the user; for example, through iPods, mp3s and mobile phone technology. This has an impact on creative processes as well as technical support for the distribution of content.

Design specialities are also affected by technological change. There is increased reliance on computerised design and desktop printing, with the ability now to complete a whole design process from a desktop. These changes are particularly pertinent in the specialisations of animation technology, information communications technology and digital technology design.

Globalisation and competition

Increased competition is a key driver of business activity and workforce management in engineering, electrotechnology, design (insofar as it is an integral feature of activity in each of these industries) and some areas of multimedia.

In engineering, for example, enterprises have initiated a range of strategies to respond to increased competition in global markets. Three of the six companies are diversifying their products and value-adding to improve their competitiveness globally:

> The shape of the business is changing toward value added areas. For example, in the past the product range was concerned with bulk cheese and milk powders. Now we produce skim milk powder and sell it to the USA according to customer specifications. Therefore, we're processing to a higher level of product specification, which involves direct customer interaction. Quality systems are needed. (Moo juice)

Competition is based on the costs of production as well as the capacity to build workforce capability to remain competitive.

> [Our company] in India takes in two intakes of 800 apprentices a year in one plant. In Australia we take in 6 apprentices! They're strong in quality, but we can't compete with that level of skilled workforce. (Car stuff)

One strategy to manage competition is to offshore long-run manufacture, while retaining more highly skilled design functions in Australian sites:

> We are shifting from lower to higher-level skills, because of competition. We have a plant in Thailand for long-run production. Short-term or customised products are done here and with a higher skill set. (Small parts)

In electronics/electrotechnologies, globalisation has also resulted in off-shoring, in this case of some information technology and call centre functions.

Increased access to global markets has increased the scope and complexity of business for some multimedia companies, for example, the company, 'Animators', benefits from the recent popularity of animated feature films and has gained contracts to produce new features for international television distribution companies.

Other drivers are more pertinent to some industry sectors than others. They include skill shortages that result from:

- external regulation and compliance (engineering, electronics/electrotechnology, nursing, disability services)
- demographic change, including an ageing population with particular health and service needs as well as ageing workforces that influence the supply of skilled workers (engineering, electronics/electrotechnology, nursing, disability services)
- difficulties in attracting and retaining workers (engineering, electronics/electrotechnology, nursing and disability services)

- ✧ industry restructuring (electronics/electrotechnology)
- ✧ increased non-standard work (electronics/electrotechnology, nursing, disability services).

These factors have also been identified in other reports (Buchanan & Hall 2003; Allen Consulting Group 2006). The approaches to addressing these drivers are described in the support document.

These drivers have an impact on each sector to require higher-level skills. While higher-level VET qualifications had a place in developing these skills, vocational education and training may not necessarily be the preferred sector to provide the higher-level skills that are created by these drivers. Employers interviewed from the engineering, electronics, design and multimedia sectors commonly expressed a strong preference for higher education graduates over VET graduates when recruiting for advanced professional positions.

Employers' views of higher-level VET qualifications

Employers differed in their perceptions of the value of higher-level VET qualifications in providing the skills they required at the associate professional or advanced technician levels. (The support document gives the summary of industry perspectives.) Three perspectives reflect the three broad industries sampled in this project. That is:

- ✧ *Clear expectations of minimum qualifications*: the community service and health industry has clearly defined qualifications requirements for people working in nursing and disability services. These are understood by employers. Students who complete the various levels of qualification have a clear understanding of the employment outcomes that are likely to arise from the qualification. Those engaged as enrolled nurses are expected to hold at least a certificate IV in states and territories other than Queensland and South Australia, which require diploma as the minimum requirement. These higher-level VET qualifications provide entry to employment and also a strong pathway to university qualifications in registered nursing, a pathway understood and accessed by students in nursing courses. These qualification requirements reflect the high levels of qualifications in this industry and the influence of the regulatory environment on workforce management.

  Disability services is not as highly regulated as nursing, and disability service workers in the non-government sector are often unqualified. Qualifications are required for the government disability workforce, but these are largely at certificate III rather than higher-level VET qualifications, except in Victoria where certificate IV is required for entry to permanent positions for those providing direct care support. Higher-level VET training is accessed by those seeking employment in management roles. Students and employers have limited capacity to take time out of work for training and prefer to undertake units rather than full qualifications.

- ✧ *A relevant qualification plus experience*: employers in the engineering and electronics/ electrotechnology sectors require workers to have a relevant base qualification for employment in associate professional roles. Higher-level VET qualifications are seen to be directly relevant to those employed in principal technical officer roles in engineering. At present this is at advanced diploma level, but the new vocational graduate certificate may be more appropriate to the higher industrial award (training package developer).

  Higher-level VET qualifications were not seen to be as relevant as either higher education graduates or existing workers with trade qualifications to the needs of employers in the engineering and electronics/electrotechnology sectors. Existing workers with trade qualifications have rich experience of the company's production processes as well as additional training and qualifications gained while working.

- ✧ *Experience and talent first*: employers in the creative industries of multimedia and design were more likely to value experience and talent, as demonstrated through a portfolio, rather than a

qualification. Where a qualification was required, they tended to prefer higher education graduates, who were seen to have more maturity, personal autonomy and initiative than VET graduates. Not all employers perceived that their skill needs required a higher education qualification:

> It's frock making. Why do you need a degree? (Clothing manufacturer)

At least half of the multimedia and design employers interviewed had a limited understanding of what higher-level VET qualifications had to offer them. They tended to equate all VET qualifications with trade and operator level roles. This was confirmed by a training package developer:

> Do employers prefer university graduates? Yes they do, but not because of any understanding of what happens in VET. (Training package developer)

The three design employers interviewed who did employ people with higher-level VET qualifications stated that a certificate IV provided technical skills, but not at a level that was adequate for their needs. A diploma was perceived to provide a more suitable grounding for the ability to apply advanced technical skills in a workplace context. Advanced diplomas were seen to provide a broader understanding of the industry and stronger management skills than diplomas.

How can higher-level VET qualifications be improved to better meet employers' and students' needs?

Employers and students identified those aspects of higher-level VET qualifications where they believed improvements could be made so as to ensure that current and future skill needs could be met.

Work/industry experience

Prior work or industry experience is a key factor in employers' recruitment decisions across sectors. Students who undertake higher-level VET courses but who have little work experience have limited evidence of their suitability for a work role at an associate professional level. They are unlikely to be recruited at the associate professional level they aspire to. For example:

> I would choose a different course next time . . . doesn't provide an opportunity to work . . . when you go to a company here you may have to be experienced, but where to get the experience? If you don't open your door I can't enter! In Mauritius you get an opportunity to work and the employer or HR [human resources] manager sees you work and you get a job. Here you get a piece of paper . . . but to get a job is hard, you don't have the experience! (Electronics student)

As stated earlier, employers interviewed in the engineering and electrotechnology sectors preferred that workers should progress into associate professional roles via a trade, with subsequent skill development to higher levels of technical and management expertise. Recruiting staff who had progressed via this pathway was preferred to recruiting graduates of higher-level VET courses who did not have this experience of a workplace and work process. Work experience is a critical element of higher-level VET for these employers.

Where work experience is built into the learning program, the timing of the experience is important. Work experience needs to balance the need for practice of knowledge and skills learnt in a course with the need for students to determine their suitability for an occupation, particularly for those in nursing roles:

> You need practical experience early in the course to see if you are suited to it. You don't get that until second year after a huge commitment. We should be hitting the floor early on. The placement comes at the end of the course . . . a bit late to find out that you don't like it. (Nursing student)

It was apparent in interviews with employers in the electronics/electrotechnology, engineering, multimedia and design sectors that entry-level job candidates with a higher-level VET qualification are in a very competitive job market. They are in competition with existing workers with a high level of technical competence and workplace experience. They are also in competition with university graduates for limited places. This is particularly important for students entering creative industries, as university graduates are often preferred by employers as providing greater initiative, autonomy and a higher level of skill and conceptual ability than do VET graduates, particularly in multimedia and design areas.

Qualifications for workforce flexibility

Employers need a workforce comprising people able to deal with change and who have strong problem-solving, communication and organisational management skills as well as possessing business acumen. Employers' nomination of generic and employability skills is well documented in the broader research and is evident in the skill needs of the sample of employers in this study (Australian Chamber of Commerce and Industry & Business Council of Australia 2002; Allen Consulting Group 2006). Employers seek qualifications that contribute to high levels of autonomy, accountability and responsibility in their work roles:

> We have a stable workforce, but have to do more with less. We have flat structures that require operator level staff to manage production, which requires them to be more highly skilled than in the past. There is greater emphasis on management, problem solving and teamwork. Senior management need better skills in mentoring to facilitate staff development. (Chemical factory)

Employers and workers in the disability and aged care sector value qualifications that prepare staff to work across the range of service areas, such as aged care disability and nursing. For example, in disability services, clients present with complex care needs such as prematurely aged clients with drug and alcohol dependencies and some levels of disability. Employers want workers who can be deployed across a range of service areas. Workers themselves wanted greater cross-discipline training to provide for increased career mobility:

> As a disability worker you tend to move across the sector, but the courses don't give you the flexibility to do that. You do have old people with mental disabilities (or blind or physical disabilities), but people can only work in one stream. (Disabilities worker)

Design students also suggested that a cross-discipline perspective would provide them with a more realistic learning experience that parallels the world of work:

> [We need] to have different streams working together as they do in industry, so that we could learn different aspects of design—for example, interior design students working with 'design for industry' students on industry projects. (Design student)

In the engineering and electrotechnology sectors each of the employers interviewed sought people who were able to integrate the various systems for maintenance in a production line, for developing new products and for providing ongoing service for clients:

> Automation increases linkages between mechanical engineering and electronics/ electrotechnology fields and the need for cross-trade skills and understanding. (Moo juice)

> They need to understand the interface between the different systems . . . electricals, mechanics, air conditioning and bogie systems. (Trains 'n trams)

Eight of the twelve employers interviewed in the sectors of multimedia and design value workers who not only have talent and skill in their area of specialisation, but also have a strong understanding of allied areas and roles in their industry; for example, skilled photographers and animators who understand the roles of others in a production team to assist their capacity to operate productively in the team:

> There is a lot of work for people with skills. They can congregate together to be multi-skilled. They need to integrate light, sound and movement, text and graphics. Skilled people need to work with others to produce a product that is multimedia.
>
> (Digital media/photography)

> They work as highly skilled specialists in 'communities of specialisation'.
>
> (Training package developer)

The challenge for higher-level VET is to produce people who have this breadth of perspective on their work; that is, graduates with highly developed specialist skills as well as strong cross-trade and cross-discipline knowledge. Developing broader skills of communication, management, teamwork and creativity are also required.

Currency and relevance of qualifications

Currency and relevance are significant challenges for higher-level VET qualifications in times of rapid change within industries. Training package and/or curriculum development must be sufficiently flexible to reflect changes in skill needs and the roles of those who work in industries. That is, the frequency of training package development and updating processes should ensure that training packages are relevant to contemporary workplaces:

> . . . courses out there are quite pedestrian. We shouldn't think in isolated compartments dictated by traditional occupational settings. Training packages should have a clear vision, be truly innovative and be capable of changing every 18 months, because that is the current cycle, or they will lag behind. There is no conceptual underpinning and respect for the work environment in the courses . . . Training packages are the reactive follower, they should be the proactive leader. If they are the follower, they are around three years behind and, hence, irrelevant to industry. (Digital media/photography)

The implications for VET qualifications are whether or not they reflect changing industry directions and are up to date. They should reflect the rapid changes in skills and knowledge in changing work roles and occupations and the interrelated nature of these work roles. Training packages are closely aligned to specific occupations, which may act as a constraint on their adaptability to future changes in work roles. Changing the packaging rules of training packages to incorporate increased options may assist in accommodating changes in occupations and industry needs. A summary of the key issues identified by employers in each of the focus industries is listed below.

Disability

- Demand for higher-level VET qualifications for disability care work is limited. This demand is strongest in Victoria, which requires a certificate IV to work in a public provider. The employers and industry representatives interviewed were interested in developing, initially, acceptance of qualifications for workers in this industry. This short-term focus is at certificate III level in most states and territories, other than Victoria.
- Training packages tend to be focused on silos or streams; however, they need greater breadth to enable workers to operate across the range of care environments—including aged care, disability, and drug and alcohol care—for clients in these settings.
- Employees have broad responsibilities, including, for some, running the residential house and providing care to clients. Employers, particularly private providers, need multitasking across

management and care skills. Units are more valuable than full qualifications because of time constraints for existing workers. Given the complexity and level of responsibility of management roles in this sector, certificate IV or diploma level were suggested for these units.

Nursing

- Because of the impact of skill shortages on registered nurses, skill sets of enrolled nurses are becoming broader. Opportunities for specialist roles are also being expanded.
- Entry-level qualifications are generally at certificate IV level, although Queensland and South Australia require qualifications at diploma level. Nursing qualifications are not, as yet, included in the suite of training package qualifications.[1] They operate as courses rather than training packages. Efforts to include nursing within training packages should take particular account of the increased responsibility and new and emerging roles for enrolled nurses. The suitability of certificate IV for this level of responsibility should be reviewed.
- Training and qualifications at higher levels provide retention and skill development strategies for employers, including providing articulation pathways to fill the shortfall of registered nurses. These pathways are relevant to both employers and employees and were actively promoted by hospitals interviewed. Students in focus groups, particularly those in disability services and those with an aged care background, were accessing higher-level VET courses to enable them to articulate into university nursing courses. Anecdotal reports from the focus groups suggest that there are advantages in terms of recognition arrangements for those who progress directly from a higher-level VET course into higher education relative to those who seek entry to higher education while working in the field.

Engineering and related technologies

- The industry is subject to pressure from globalisation and competition from low-cost labour markets. Enterprises have limited capacity to absorb additional costs from labour, including costs from higher levels of training and credentials. This is likely to act as a disincentive to employer-sponsored training to full higher-level VET qualifications. It is possible that employers will continue to prefer to train existing workers through short courses rather than full qualifications, although recent incentives to attract workers to higher-level VET qualifications may provide an incentive for training at this level.
- Employers were concerned that the need for higher-level skills might result in an artificial inflation of qualifications requirements. They asserted that higher-level skills should be included within base qualification levels as required by the nature of the work at that level, rather than increasing qualifications at higher levels.
- Advanced technicians require high-level technical skills as well as a depth of understanding and experience in production processes. Employers prefer to recruit experienced trade-qualified personnel to entry-level workers. Not all of these will hold higher-level VET qualifications. Three of the six employers interviewed reported that internal recruitment was preferred for these positions, as their existing staff understand the enterprise-specific production processes and can be trained through short courses and in-house programs to take on new roles at this level.
- There is a greater emphasis on design and quality processes that arise from greater customisation in production. This increases the need for a breadth of skills in higher-level VET qualifications as well as a need for cross-trade skills and knowledge across systems.

[1] Since the research was completed, enrolled nursing qualifications have been added to the Health Training Package (HLT07).

Electronics/electrotechnologies

- This sector is experiencing rapid technological change with existing and new technologies. For installation and service technicians, problem-solving and fault-finding is important; however, the increase in components reduces the technical complexity of new knowledge requirements, since technicians plug in pre-fabricated components rather than designing and developing customised solutions. For those in a developmental role, higher-level design skills are required.
- A broad understanding across electrotechnologies, as well as other areas of engineering, is required to be able to work with the integrated nature of technologies and production processes.
- Employer preference for industry-based pathways makes it difficult for those undertaking higher-level VET qualifications for entry to middle-level occupations.
- Currency of skills is a key factor for the existing workforce, which must update skills and knowledge throughout their working life.

Multimedia

- Employers look for talent, skills and experience, as demonstrated through the applicant's portfolio, rather than a qualification.
- Creative industries are largely small businesses and sole traders who need business acumen. These industries would benefit from qualifications that developed the technical and creative aspects of the work, along with skills in business management such as finance, time and project management and marketing.
- Industry tends to value higher education graduates over VET graduates. The former are seen to be more creative, innovative and able to work autonomously.

Design

- Employers value the applicant's portfolio, rather than qualifications, as a signal of talent and adequacy for the role.
- Employers prefer higher education graduates over VET graduates, as they hold broader skills. VET programs are seen to provide base skills.
- Existing workers need a high level of design capability, together with a breadth of understanding across the related areas in a creative working team.
- Many design staff are self-employed. They need business acumen and management skills. As is the case for those in multimedia, self-employed design staff would benefit from training that develops their technical, creative and business management skills.

What is the likely effect of associate degrees on participation in higher-level VET courses?

The associate degree is a relatively new qualification in the Australian Qualifications Framework (endorsed 2004). It is considered a higher education sector qualification: one that holds a small, but growing, share of higher education students.

The associate degree is, at this stage, relatively unknown. Neither students in the focus groups nor employers in the interviews had heard of the associate degree. When queried, few students indicated that they were interested in undertaking an associate degree. This may be due, in part, to the following reasons: many students had come from a higher education background into their higher-level VET course as a change of direction; some students saw the practicality of TAFE

programs as more suited to their needs; and some were using the TAFE program as preparation or as a pathway to a higher education qualification.

There is no indication from the employer interviews or student focus groups that demand for the associate degree will have an impact on participation in higher-level VET courses. However, such is the make-up of the associate degree that it could provide a useful model for considering how higher-level VET qualifications might address employers' expressed need for broader knowledge and skills currently on offer from qualifications; for example, the ability to work with greater autonomy, to be self-directed and to be able to problem-solve across a range of situations within the industry context.

The associate degree emphasises developing academic skills and attributes as well as related generic skills, with a focus on broad-based knowledge content (Australian Qualifications Framework 2006). It is possible that the associate degree could provide either:

- an alternative model for developing greater breadth of skill at higher levels of VET qualifications
- an alternative to the advanced diploma
- a complementary pathway to a specialist advanced diploma.

Implications for policy and practice

Analysis of the views of employers, students and training package developers identified common issues with implications for improving higher-level VET qualifications. Higher-level VET qualifications need to:

- be up to date to encompass changing skills and knowledge of relevant occupations
- integrate knowledge and skills across job roles and streams within an industry field
- lead to relevant employment outcomes for those seeking entry to employment at associate professional levels
- be credible to employers in the creative industries.

Currency of qualifications

There is a perception among employers that qualifications are not sufficiently up to date to reflect the changing skills and knowledge requirements of industry.

The underlying premise of training package development is that a qualification outcome is directly linked to a job role or occupation. Training packages follow a specific developmental process to endorsement to reflect industry needs and, by definition, will always lag behind changes in industry and that of job roles or occupation. Hence, training packages and their qualifications run the risk of being outdated before the review process is begun. In rapidly changing and emerging industries this may occur while training packages are relatively new. In addition, in some industries, job roles are changing too rapidly to warrant an over-specification of qualifications to that of job roles/occupations, especially at the higher levels.

Providing greater flexibility to accommodate emerging needs and job roles requires that the tight specification of training packages at the higher qualification levels in VET to specific job roles is relaxed; in this way, it will be possible to more readily incorporate emerging roles and skills into qualifications. The packaging rules could incorporate greater options, in terms of electives within and across training packages. For example, core units and electives could be specified from within the relevant training package, but it could be that a number of additional units are selected across existing training packages and/or accredited curriculum to meet emerging job roles.

Integration of knowledge and skills

Employers are seeking employees with cross-trade and cross-discipline skills and knowledge to enable them to work across roles and to understand the relationship between their work and that of others in a production process. For example, maintenance staff need to be able to work across a range of trade areas as well as taking on a management role; designers need to understand the

entire design process from concept to completion; and disability workers need to be able to work across service lines of disability support, aged care and community support.

Employers seek a greater emphasis on generic employability skills, such as communication, teamwork, self-management and problem-solving, than is perceived to be met by current higher-level VET qualifications. This is possible within the provisions of current Australian Qualifications Framework descriptors which allow for flexibility in terms of breadth and/or depth. However, the perception of users is often that higher-level qualifications imply higher-order specialised knowledge and skills. In fact, it may be that the qualification already encompasses a significant breadth of knowledge and skills. It would be useful for industry skills councils to communicate the extent to which relevant higher-level skills provide for breadth and depth in knowledge and skills. Furthermore, they need to explain how this qualification and what it entails meet the expressed desire for employees to have greater generic skills and knowledge in their work roles.

Training package developers may need to re-think the construction of higher-level VET qualifications, in terms of the core and electives, offering various areas of specialisation and with sufficient rigour to provide a broad base of knowledge and skills across the industry. Possible models include:

- provision for specialisation within an area, coupled with a broad understanding of allied areas and management skills. In engineering and electronics, for example, employees require high specialisation coupled with cross-trade skills to enable them to understand, manage and maintain integrated systems. In creative industries, expertise is required in a chosen field, together with an understanding of how this expertise links with that of others in the production team.
- provision for generalist knowledge and skills in an industry with specialist expertise in one or more areas. This model of qualification construction could include a generic core plus electives that apply across an industry, with one specialist area being a major stream and the other allied areas being minor streams. For example, from the aged care or disability area a general core could deal with care skills and be coupled with a specialisation in either disability, drug and alcohol and aged care. A set of competencies selected from the non-specialist areas could be included to enable workers to move across community service areas.

Employment outcomes of higher-level VET qualifications at associate professional levels

The preferred model for associate professionals in the engineering and electrotechnology industry is for employees to be drawn from the existing trade base with appropriate upskilling and skills and experience in the workplace. This places those students who are undertaking diplomas and advanced diplomas in these sectors at a significant disadvantage in realising their vocational aspirations.

Training at these qualification levels needs to ensure that students have opportunities for extended and authentic workplace experience within their programs. The following options should be examined for their suitability for application to higher-level VET qualifications. These are likely to improve the qualification as an effective pathway for school leavers into employment at associate professional levels:

- the Australian Apprenticeship and cadetship models, particularly at diploma and advanced diploma levels

- ✧ incorporation of industry partner projects that involve students working directly with industry to design solutions to enterprise needs and problems as part of their training program.

Where a higher-level VET qualification is unlikely to lead to a vocational outcome, then the higher-level VET qualification should not be developed merely to fill missing levels in a qualification framework. If the qualification is mainly to serve as a vehicle for articulation into a higher education qualification, then this should be explicitly stated in the qualification design to ensure that students' expectations are realistic.

Credibility of higher-level VET in the creative industries

The multimedia and design sectors are different from other sectors being considered, in that they value experience and performance over qualifications when recruiting. It is the portfolio that demonstrates the quality of the creator's work and forms the most influential component of the applicant's curriculum vitae. Qualifications are not a major consideration for potential employers.

Where employers do consider qualifications, it is in relation to higher-level conceptual understanding and the qualities of autonomy, initiative and creativity that employers currently associate with higher education qualifications rather than VET.

This places a greater burden on higher-level VET qualifications to develop highly skilled students, to provide sufficient breadth of experience to enable the construction of rich portfolios, and to ensure extended contact and familiarity with enterprises in related fields; for example, through work placements and/or consultations on project services to industry.

Conclusion

Higher-level VET qualifications provide a valuable, yet often underutilised, tool for meeting the growth in demand for highly skilled workers, particularly at the associate professional level. The key areas where improvement is indicated are in building credibility with employers in the creative arts and in ensuring that higher-level qualifications are designed to meet students' expectations for employment-related outcomes; that is, at an occupation level commensurate with the qualification being undertaken. This is particularly important for students seeking entry to work in engineering, electronics/electrotechnology, multimedia and design.

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Appendix A
Enterprise interview questions

The interview items are described with reference to the research questions for this project.

A. Why do diploma and advanced diploma qualifications not translate into labour market outcomes for some participants?

Key issues	Questions posed as appropriate[2]
	General background information on the enterprise
	What is the nature of your business activities?
	What kinds of jobs and occupations are represented in your workforce? How many trades, technicians or associate professionals do you employ?
	Has there been a change in the proportion of these occupations in the past five years?
What is the demand for higher-level skills in relevant industries?	What changes are occurring in your business?
How is this demand changing?	Are these changes occurring in other areas of your sector/ industry?
	Generally?
	In supply chain/network enterprises?
	What are the key drivers of these changes?
	What workforce management strategies are you using to respond to these changes?
	How are these changes affecting your skill needs or producing skill shortages?
	Could these skills shortages be met by merging job functions? If so, what roles or combinations of functions could be merged?
	Are new or expanded roles emerging? If yes, what are the new roles/expanded roles?
	What job roles are likely to be affected?—lower level routine job roles? Trades or technical occupations? Middle management? Senior management?
	Thinking of trade, technicians and associate professional job roles. What specific skills and levels of skills are you likely to seek in your workforce?—for existing workers? For new recruits?

[2] These questions were intended as prompts to the interviewer and were asked if appropriate to the enterprise.

B. How can higher-level VET qualifications be improved to better meet employers' and students' needs?

Key issues	Questions posed as appropriate[3]
To what extent do higher-level VET qualifications reflect employer expectations of skills in relevant occupations?	What role do formal qualifications have in your recruitment for these positions? Or for training your existing staff to meet skill needs? Do you use qualifications as a pre-requisite for employment? If so, to what extent are these graduates able to 'hit the ground running' when they join your organisation? If they require further training, what sort? Do you have any preference for higher education or vocational qualifications? Why? Which ones in particular? New qualifications at diploma, advanced diploma and associate degrees are being developed in education and training. Do you have an idea of what these qualifications signify for skills? Do you see that they are relevant to your workforce management strategies? What benefits do they offer you? How might they be improved for your needs? What weight would they carry in a selection process ✧ generally? ✧ in comparison to applicants with trade qualifications or without formal qualifications? ✧ in comparison to applicants with a degree level qualification? Would this differ for different occupations? What else would affect your decisions?
How might higher-level VET qualifications be adapted to meet employer expectations?	How might higher-level VET qualifications meet your needs ✧ for upskilling staff or ✧ to better prepare new employees for your industry?

[3] These questions were intended as prompts to the interviewer and were asked if appropriate to the enterprise.

Appendix B Telephone survey questions: Training package developers

The interview items are described with reference to the research questions for this project.

A. Why do higher-level VET qualifications not translate into labour market outcomes for some participants?

Key questions for interviews	Prompts as appropriate[4]
	General background information on the range of higher-level VET courses in the industry.
	Do you have information on which qualifications have the highest levels of participation?
	What are the main areas that training packages have been developed for higher-level VET? Which qualifications have the highest levels of participation?
	What is your industry considering for higher education qualifications?
	Which are new qualifications? Are these higher-level courses or single modules only?
	Do qualifications have an impact on wages in your industry?
	What research did the ISC draw on to support the development of these?
	If training packages are under review, are there indications for further development of higher-level VET courses? If yes, in what areas?
What is the demand for higher-level skills in relevant industries?	Is there evidence of increased demand for higher-level skills in the industry?
How is this demand changing?	From which sectors and involving which occupations?
	What are the drivers of demand?
	What are the implications for skill needs or shortages in these sectors?
	What are the key drivers of demand for skills in the industry sectors?

[4] These questions were intended as prompts to the interviewer and were asked if appropriate to the enterprise.

Key questions for interviews	Prompts as appropriate[4]
	What workforce management strategies are being employed to manage demand for skills or to address skill shortages? Do you have examples of these?
	Merging job functions?
	Developing new or expanded roles? If yes, what are the new roles/expanded roles?
	Sourcing labour from the external job market?
	Qualified in the area?
	From complimentary occupations with training support
	From migration or guest workers
	At what occupation levels?—lower level routine job roles? Trades or technical occupations? Middle management? Senior management?
What use do employers make of higher-level skills and qualifications from VET and higher education or other training provision to satisfy this demand?	What kind of demand is there for higher-level VET qualifications, i.e. certificate IV, diplomas, advanced diplomas, vocational graduate certificates and vocational graduate diplomas? How does this differ for different awards?
	Where is demand for higher-level VET awards strongest? Is there evidence for this? In what job classifications?
	Is there a difference between the demand for higher-level VET qualifications and higher-level units of competency that employers may use in workplace training?

B. How can higher-level VET qualifications be improved to better meet employers' and students' needs?

Key questions for interviews	Prompts as appropriate[5]
To what extent do higher-level VET qualifications reflect employer expectations of skills in relevant occupations?	Do you think that higher-level VET qualifications reflect what employers want/need? Why?
	Are higher-level qualifications suited to the needs of large and small enterprises?
	What are employers telling you about the effectiveness of higher-level VET qualifications?
	Do you have any data on outcomes for people who complete higher-level qualifications?

[5] These questions were intended as prompts to the interviewer and were asked if appropriate to the enterprise.

Key questions for interviews	Prompts as appropriate[5]
How might higher-level VET qualifications be adapted to meet employer expectations?	Do you think that higher-level VET qualifications can be adapted to meet employers' needs? How? What improvements do you think are needed to higher-level qualifications to better suit them to employer needs and expectation? What flexibilities are built into higher-level VET qualifications to assist them to meet employer needs/expectations? Have you collected any data from employers about the usefulness of higher-level VET qualifications? If so, in what way has this data had an impact on the design of these qualifications?

C. What is the likely effect of associate degrees on participation in diploma and advanced diploma courses?

Key questions for interviews	Prompts as appropriate[6]
What is the nature of competition between higher-level VET qualifications and higher education qualifications in industries with higher levels of associate professional qualifications? *For what occupations and qualifications?*	What is the nature of competition between higher-level VET qualifications and higher education qualifications in industries with higher-levels of associate professional qualifications? Is this changing? How and why? Is competition between VET and higher education different in different sectors? For what occupations and qualifications? Why?
Who is undertaking associate degree programs? Why?	See questions above.

[6] These questions were intended as prompts to the interviewer and were asked if appropriate to the enterprise.

Appendix C
Student focus group questions

The focus group items are described with reference to the research questions for this project.

Background information—on a record sheet	What qualification are you enrolled in?
	What level of qualification is it a: [record course on entry to the focus group]
	What other qualifications do you have already?
	Have you requested recognition for components of the course? Y/N
In focus group	How did you know about the particular courses you are enrolled in?
	Are you supported by your employer to do the training?

A. How can higher-level VET qualifications be improved to better meet employers' and students' needs?

What is the relationship between the intent of higher-level VET qualifications and their actual use by students?	Why did you select this particular course?
	Did you consider other courses? Which ones?
As advanced training for experienced practitioners?	Why did you prefer the course that you are enrolled in over others? Over other levels of qualification?
For entry to employment?	Why did you choose to do the particular qualification level, e.g. diploma, associate diploma?
As substitutes for university qualifications?	Does the course relate directly to skills needed at work or that you may need in another position?
As a pathway to higher education?	Are you interested in completing the whole qualification or just particular units? Why?
	Do you plan further study after this course?
If you are training to get a job	What occupation are you training for?

B. What is the likely effect of associate degrees on participation in diploma and advanced diploma courses?

What is the nature of competition between higher-level VET qualifications and higher education qualifications in industries with higher levels of associate professional qualifications?	If you were starting the course tomorrow, would you have enrolled in the same or different course? At the same or different qualification level?
For what occupations and qualifications?	
For TAFE students:	Have you considered undertaking a university qualification? Would that be an associate degree or a degree course? Why didn't you enrol in one this time?

Support document details

Additional information relating to this research is available in *Higher-level vocational education and training qualifications: Their importance in today's training market—Support document*. It can be accessed from NCVER's website <http://www.ncver.edu.au/publications/1800.html>. This document contains information regarding:

- ✧ The Australian Qualifications Framework
- ✧ Methodology
- ✧ Enterprise sample
- ✧ Student sample
- ✧ Summary of industry perspectives
- ✧ Summary of focus group responses
- ✧ References.

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