HIGHER APPRENTICESHIPS:

Scoping report to Higher Education and Skills Group

AUTHORS

Hugh Guthrie, Work-based Education Research Centre

Natalie Dowling, Faculty of Technical & Trades Innovation

September 2012

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

CONTENTS

BACKGROUND

"TRAINING AND WORK-INTEGRATED LEARNING OPPORTUNITIES WILL BE REQUIRED TO SUPPORT JOB READINESS READINESS AT THESE HIGHER LEVELS."

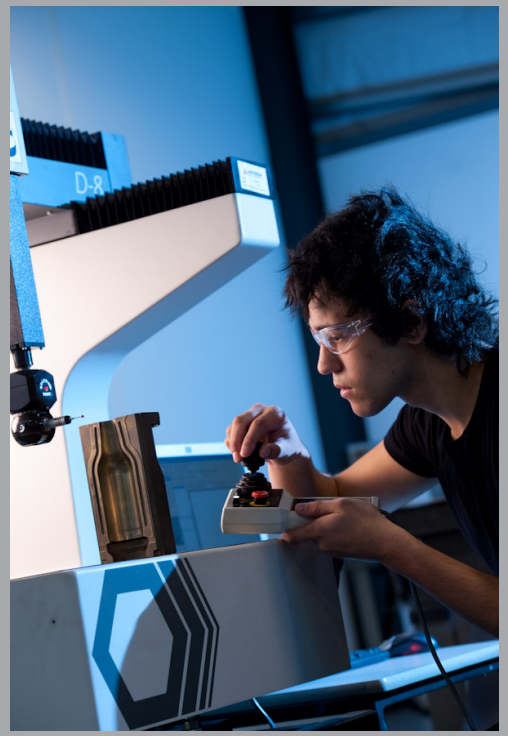
The shift to a more highly skilled and knowledge-based economy requires a workforce with the capacity and capability to deliver a range of skills to meet industry demand for trade, technical and managerial roles. This will require adaptable and flexible workers who are equipped with practical skills, professional knowledge and preparedness for lifelong learning. These skills and attributes enable them to respond to advances in technology, changing work and changing workplaces. Training and work-integrated learning opportunities will be required to support job readiness at these higher levels.

In this context of a changing economy, the Victorian Government is looking at ways to strengthen traditional trades training in Victoria. Through the 2012 Building Trade Pathways consultation process it outlined possible options to address limitations of the current apprenticeship system by attracting more and a greater diversity of people into trades training, supporting their success and completion and producing quality skills outcomes that meet future workforce and individual needs. While acknowledging the overall positive state of the apprenticeship system the report identified key challenges or limitations to confront.

These challenges and limitations necessitate consideration of the ways in which trades training can better meet the diverse workforce development needs of individual companies, industry sectors and individual apprentices. In particular, and in the context of this report, there is interest in whether apprenticeships are well packaged and attractive enough to encourage and support high achievers to undertake trade careers, and if the system provides sufficiently challenging and fulfilling opportunities to retain and develop future industry leaders.

While there are examples of high achievers succeeding across a range of trades, and a measure of local support for higher skills within the apprentice framework, demand and feasibility for formalised 'higher apprenticeship' qualifications has not been seriously tested in Victoria. The effort to embed competency-based progression and RPL frameworks provides a timely opportunity and a potentially good foundation for additional or higher skills to be acquired or recognised within the apprenticeship framework.

To explore this issue further Victoria University was commissioned by the Higher Education and Skills Group (HESG) to undertake scoping work to test demand for higher apprenticeship options.



METHODOLOGY

This scoping work sought to define what higher apprenticeships could mean in the Victorian context and propose models before proceeding to industry for feedback to test demand and feasibility, and to ascertain what skill areas higher apprenticeships might address.

The first stage involved an environmental scan (Appendix A). This informed the development of an information sheet (Appendix B) and a series of questions (Appendix C), which were distributed to industry stakeholders prior to consultation meetings.

This range of stakeholders included umbrella or peak organisations along with business enterprises, predominantly from the Engineering and Building and Construction sectors, but also incorporating manufacturing.

Most of these stakeholders could be dubbed 'Tier 1' (that is: the most highly valued apprentice employers) in that they foster a supportive apprenticeship culture[1].

A range of other stakeholders, mostly from the education sector, were collaboratively approached for feedback, experiences and ideas.

The outputs for this project were expected to outline how a higher apprenticeships model might be defined, obtain clarity around how it might be delivered and to identify barriers and incentives to implementation.

Additionally, ideas for pilots were to be gathered and champion proponents identified to participate in future developments.

Some of the critical questions to arise during the preliminary model development included:

- What AQF level was to be deemed 'higher'(e.g. Cert IV, Diploma, Degree)?
- What gap or need would a higher apprenticeship be filling?
- Whether the intent was for skills and knowledge to be broader (generic) or deeper (technical or specialist) than a traditional apprenticeship?
- Whether vocational or academic qualifications were preferable?
- When or at what stage the higher level could be incorporated into the training timeframe (including tapping into the existing trades workforce for its higher development and leadership potential)?
- What the logistics or nuts and bolts were on such issues as timetables, funding, Enterprise Bargaining Agreement (EBA), recruitment and selection?
- How people would be made aware of the higher opportunities and when they needed to know in order to make informed decisions?

There was an underlying question as to whether "higher apprenticeships" would precipitate the development of a distinct new qualification to combine with a traditional apprenticeship (such as the UK model) or whether what was really being considered was an enhanced trades training framework to better articulate, promote and open up existing pathways. In this sense much of the consultation involved discussion as to how the current system worked or was being navigated to deliver higher trades training that served industry and individual needs.

As a result we have gathered useful case studies and good practices, along with ideas for future developments.

[1] Appendix D outlines the characteristics of tier 1 to 3 employers as well as tier 1 to 3 apprentices. This concept was highlighted in Bardon, B 2010, The future of trade apprenticeships in Australia, Central West Group Apprentices, Bathurst

HIGH LEVEL FINDINGS

"MY FRUSTRATION IS THE OLD CONCEPTIONS OF WHAT AN APPRENTICE IS – THAT'S THE BIGGEST BARRIER".

- There was variance amongst and within industries about the need/demand for a higher apprenticeship, which indicates that there is not a one-size-fits-all approach that can be taken to developing higher apprenticeships.
- Within the industries consulted, the strongest demand for degree qualification or deeper skills seems to be in Engineering. This points to potential opportunities for mechatronics or a vocational Masters with a technical focus.
- Building and Construction stakeholders favour broadening studies, with the demand strongest for Certificate IV or Diploma in areas such as construction and project management, business studies or sustainability.
- There was insufficient support for the UK model of higher apprenticeships as an overarching model.
- There was a blend of responses (and examples) favouring sequential or concurrent models (see Appendix A). The majority of participants preferred additional training to be embedded into the apprenticeship rather than early completion of the qualification.
- In general, individuals and enterprises utilise the existing system and navigate it to their advantage. However this is limited to the extent that their awareness of the opportunities allows.
- On-the-job experiences and challenging opportunities are deemed just as - if not more - important than qualifications in terms of developing individuals and supporting their aspiration for high achievement and career development. The culture of the workplace is a significant factor in the success of an apprenticeship (see Appendix D). This raises the issue of whether some employers should be able to take on apprentices or would benefit from support programs.
- There is divergence amongst the trades in their capacity to attract and encourage 'high achievers' – licensed trades seem to enjoy a particularly high regard or prestige.
- Pre-apprenticeships are an important recruitment tool for demonstrating interest, passion and candidate commitment to a trade area and are deemed a pre-requisite by most stakeholders we consulted. Maturity and Year 12 completions are also deemed important by many employers – however 'attitude' and 'aptitude' seem to be key overarching elements
- Industries have divergent needs and there is no 'magic bullet' to attracting and rewarding high achievers. However a universal approach could be taken for better promotion or branding of higher trades training opportunities and developing a recognised trades training framework.

DISCUSSION

Many of those to whom we talked are a testament to the opportunities available through trade training pathways, which include a blend of qualifications and on the job experiences.

They have attained middle and senior positions in their organisations based on a trade background supported in many cases by aptitude, subsequent study and work experience. More needs to be made of the career paths and the work opportunities arising during a career beginning in the trades. This might involve government working more closely with and across key industry groups to foster a more collective, collaborative approach.

There seems to be considerable use of available pathways already, but the approaches taken vary with industry and company.

For example:

a. An automotive company concentrates on broader and deeper technical skills in mechatronics, with their apprentices possibly having completed or part completed Certificate IV and Diploma level studies before they are out of their time. The program also emphasises self-growth, and the development of work cultures and attitudes consistent with the company's ethos.

b. The apprentices at another large automotive company have an agreement for 600 additional hours of study embedded into their initial training contract. This will generally be units at Certificate IV or Diploma level. The nature of additional study will depend on the apprentice's trade area (automotive, electrical or fabrication) and the specific skills required in their job context e.g. engineering Diploma, hydraulics, bearings, Computer Aided Design (CAD). This arrangement is supported by an enterprise bargaining agreement (EBA) that acknowledges the importance of apprentices to the workplace, and funding that allows for additional training. The apprentices are paid at half time wages for the time spent studying at night, assuming a successful achievement. The company implemented this program because the traditional Cert III was not meeting their needs for higher skills.

c. In the housing sector the emphasis may be on building apprentices' business management skills given that they are likely to become sub-contractors and small business owners. Others working with larger builders may gain skills to undertake supervisory roles on site. They may also begin the journey of the Certificate IV qualification required to register as a builder.

d. In the large scale building and civil construction sectors the orientation is towards gaining the management skills that will enable the best to become site foremen, site supervisors and subsequently move into construction, production and project management roles. Several of the large companies we visited noted that they preferred those coming from a trade background to those with formal higher education project and construction management qualifications as they were seen as more practical and aware of the issues that occurred in the day-to-day management of such construction sites and projects. Such studies involve undertaking qualifications at Certificate IV and at Diploma and Advanced Diploma level. Some study may begin for those showing most promise during their apprenticeship, and supported subsequently by their

"WHAT IS LACKING IS A PATHWAY OUT OF HANDS ON SKILLS INTO MANAGEMENT AND THOSE THINGS THAT INDUSTRY IS CRYING OUT FOR."

employers – together with appropriate experience and mentoring within the company.

Thus the major focus from those interviewed to date appears to be on skills broadening rather than deepening (although deepening is a characteristic in the manufacturing and engineering sectors).

Overall there does not seem to be strong support for approaches such as the higher apprenticeships model from the UK (where take up appears to have been limited to date) with university studies and pathways into the professions being amongst the core elements.

The tailored frameworks and opportunities are likely to appeal only to a particular range of companies. In the UK the enterprises taking up these options are generally large, vertically integrated organisations. Also, some of the 'apprentice' fields in which they are being taken up might be more comparable to traineeships or cadetships in the Victorian context.

Where they are providing relevant pathways are in large companies with trade, technical and professional roles and significant technological or management opportunities such as Rolls Royce or Airbus. In the Victorian context one approach to consider may be cadetships as a form of 'apprenticeship' or practical experience entered into at the beginning or during university studies.

A sound selection process for apprenticeships is essential to raising their prestige. Many of those to whom we spoke source their apprentices from those completing pre-apprenticeship qualifications.

This suggests that these programs could adopt an approach where they take a wide range of applicants and then identify the best, who would have the greatest chance of attaining a high quality apprenticeship with a highly regarded group scheme or a high quality employer.

An alternative or complementary approach is to establish a pre-apprenticeship program which is highly selective, and provide graduates which will meet the needs of particular group schemes and employers. Thus, the value of the program becomes recognised and is held in high esteem in industry and may therefore carry an increased prestige with schools having students wishing to enter careers in particular industries and do so through the trades.

The consensus is that a strong investment in initial selection is well repaid and helps to minimise subsequent attrition. Nevertheless, those who are academically able do not necessarily make the best trades people, so it is important to identify those with the potential and the drive to undertake such programs. While levels of literacy and numeracy are important – and tested for by many group schemes, it is manual dexterity, problem solving ability and an appropriate work ethic and interest in the occupational area that are also key, both to the group schemes and individual employers interviewed. Attitude and aptitude of candidates are also important.

One large construction company is quite explicit in its apprentice hiring effort by seeking 'leaders' who can demonstrate commitment to the trade and their future with the company. The two stage interview process involves discussion as to how the candidates will develop their career with the company to fill the gap for site supervisors and foremen in the short term, with construction and project management opportunities into the future. The expectation from the outset is that these apprentices will undertake Certificate IV or Diploma studies at night school concurrent with their apprenticeship. Upon successful completion and achievement at a high level, their expenses will be reimbursed by the company. They are also exposed to higher opportunities on the job, being given demanding aspects that put them under pressure – a situation that the company sees as integral to testing and developing their apprentices. While the company demands a significant time commitment from individuals, extra-curricular leadership activities or success, particularly in the sporting arena, are encouraged and also seen as an indicator of an individual's potential.

"THE RIGHT QUALITY IS PASSION FOR IT AND THEN PEOPLE CAN SUCCEED."

One company that hired apprentices across a range of occupations noted that while they can readily attract electrical apprentices their job is far more difficult in the mechanical trades. It was also noted by other participants that some of the building trades – for example bricklaying – were very much harder to fill than others.

A second key feature is sound support for the apprentice throughout the program both by the training provider and by the employer– whether an individual employer or a group scheme.

Such approaches may include a mentoring scheme, continuous monitoring of progress and adjustment of their individual training plan to meet emerging needs and interests, and advice about career options. The general

work and learning culture of their employer will also enhance the quality of the experience as an apprentice. This begs the question as to whether more attention should be paid to employers having an apprentice and the quality and breadth of the experience they provide.

This argument is particularly potent given that employers receive incentives and benefits for taking on an apprentice and both the government and the broader community should obtain the best possible return on this public expenditure. In short, perhaps a more stringent monitoring of the apprentice experience would lift the quality and, hopefully, help raise prestige and desirability of apprenticeships. While overall apprentice numbers might fall under such arrangements, this might be offset by improved completion rates [2].

It was common feedback that high achievers are supported by being given meaningful work with higher level responsibilities that challenge and test them and encourage internal pathways - if the individual demonstrates aptitude and decides that they want to "go somewhere". Maintaining employment with a company after the completion of the apprenticeship is also viewed as a reward.

The value of trades training and opportunities that can be opened up through it are not well understood by many, particularly by schools and careers advisors, and by significant influencers such as parents.

Some concerns were raised about SMEs having the awareness or capacity to support such pathways. While group schemes and industry bodies alike note that they are trying to address this issue, clearly more needs to be done. Sites such as "My Career" really do not contain very much information about career options in the trades, initially or subsequently. However, as we noted above, not all trades are or could be considered equally attractive.

In addition the earning potential of a range of trades is not well understood, especially beyond the licensed trades. And yet, one company pointed out that a range of their top mechatronics trades people were earning in excess of $100K.

Another employer reflected upon today's apprentices seeming more mature and informed in their choice to be tradespeople, which he saw as a positive difference from previous generations for whom the trades were a default option for non-academic types. But given the overall feedback, this is an area on which improvements can be made. It was suggested that high achievers will always find the opportunities but that there is potential to broaden exposure and encourage or motivate others through pathways and workforce development.

'WE'RE AFTER THE KID WHO CAN STRIVE TO BE THE BEST HE CAN BE."

Most of the companies and group schemes we met emphasised the need for quality and relevance of the training experiences.

The quality of relationship between the provider and employer is seen as critical, including the flexibility to accommodate employer needs and the capacity to deliver higher level training that meets company and apprentice requirements. While there can be a hierarchy in terms of desirability and perceptions of provider quality, employers will also consider a provider for the Certificate III training in a location that is relatively convenient for the apprentice. Many noted that RTOs have become more responsive to their needs in recent years. While workplace training was critical, most employers were adamant of the need for apprentices to continue to have off-site training to provide them with the full spectrum of necessary trades training that might not be fully available on site or in workplaces that tended to specialise in particular aspects.

It is important to celebrate and publicise the quality of apprentices and that career and leadership opportunities do exist.

This includes rewards and recognition both by their employers and more broadly, including awards offered by industry associations, scholarships, the state and national apprentice training awards, WorldSkills etc. It also involves tapping into career changers and older youth who make the transition to trades. Many commented on the success of older workers or some who might start university studies but feel the need for a more practical experience.

It is worth showcasing examples where apprentices

2 A recent report from NCVER notes that employer type and size and the social background of the apprentice affect completion rates, see Karmel, T & Roberts, D 2012, The role of 'culture' in apprenticeship completions, Adelaide, NCVER at http://www.ncver.edu.au/publications/2498.html

"TRADES ARE NOT SOMEWHERE YOU TIP THE DUMMIES."

are rewarded for their efforts as part of a team in the workforce. One company has a significant awards and recognition system in place, in addition to financial incentives for apprentices who perform well in successful project teams. Another has an awards system and a selective leadership program which provides identified high achievers with a leadership course and a project. The value of peers and champions were generally considered as powerful tools. The Australian Government's recent launch of Real Stories Real Achievements is an example of what can be done to promote trade careers and pathways.

Surprisingly, Training Packages are generally seen as flexible enough to meet needs as people navigate their way around and set up systems within their own companies to make it work for them.

One exception was a company that expressed a need for a mechatronics trade qualification which for a variety of IR and other reasons seems to be impossible to implement in Australia. Yet they have managed to get the programs and training they need through working with a TAFE. However they would acknowledge the situation is not ideal and puts them at a competitive disadvantage with other company manufacturing sites overseas. That is, the Training Packages are not international enough for a company such as them.

Another company is implementing an internal training structure that encourages higher skills through additional qualifications. However the initial focus seems to be getting a stronger foundation at the Cert III level through 'proof of competency" that is demonstrated through ongoing practice and tests on the job. This forms part of a framework and culture to support better utilisation of skills. It streams people into sequential higher level study that is targeted for work and job outcomes rather than having individuals cherry picking skill sets (e.g. hydraulics and pneumatics). This puts people in a stronger position to progress and allows the company to tailor its training needs to its requirements.

CONCLUSIONS

An apprenticeship system with articulated pathways for lifelong learning and career development, including tailored options and flexibility to meet the needs of apprentices and their employers, is essential for the trade and technical industries. Meeting future higher skill needs will be contingent on the timeliness and responsiveness of the training system to supply the right skills, but also of having the right people – in volume and aptitude - to acquire and utilise higher skills.

This scoping project highlights that the current system is not necessarily precluding high achievers and that motivated individuals can obtain rewarding and fulfilling trade careers, when given a head start from employers with a positive apprentice culture and support for ongoing skills acquisition. However more could be done to broaden the scope, awareness and take up of these opportunities so that they become more prevalent and potentially less limited to particular types of employers. This would involve supporting the spread of positive apprentice culture and esteem so that these higher levels are more readily accessed by people starting in an entry-level trade qualification.

There is however no 'magic bullet' and only a wide-ranging and sustained approach to improving the attractiveness of the trades will succeed. With increased attractiveness will come an increasing interest from those high achievers who might not have otherwise considered such an option. As one of those we interviewed remarked, "Trades are not somewhere you tip the dummies."

A diverse and comprehensive set of approaches to attracting the best and brightest, rather than a limited range of models, is likely to be the way forward. It should also be noted that the best and brightest apprentices may be obvious from day one, or they may bloom through exposure to their off- and on-the-job experiences. Thus it is also about identifying those likely to have potential and that are capable of blossoming in the right environments during their apprenticeship, and offering them interesting and challenging experiences that will build their skills and enhance their own employability as well as their value to their employer.

Some ideas for government and the training sector to consider:

- Promotional trade career programs embedded into schools – coordinated by a cluster of local RTOs bringing together stakeholders and targeting parents, careers advisers and prospective students – to support trade careers as a first choice option (and not just a 'vocational' non-uni choice). Rather than being an isolated program it would attempt to 'mainstream' vocational programs in schools and tap into existing efforts such as WorldSkills, Real Stories etc. and promote a trades training framework. More comprehensive vocational guidance testing to assist students and their parents to make sound vocational choices needs to be available, however.
- Pre-apprenticeships with a high achievers stream or a selective entry program. It could provide opportunities for mature age or high achieving students to advance and support the transition to a trade career and beyond. It would also provide an opportunity to develop and validate a comprehensive range of tools that might be used in such a selection process.
- There are some opportunities in Engineering to pilot new curriculum that can focus on mechatronics or higher level vocational programs.
- Promotion of Cert IV or Diploma studies in Building & Construction – particularly for apprentices at SMEs (who, without Human Resource departments or larger training budgets might benefit from support or incentives). This could involve RTOs collaborating with Group Training Organisations to implement tailored training programs, and coincide with a support or mentoring program to foster positive apprentice culture in workplaces and to showcase the benefits for employers and apprentices alike.
- Work with a range of industry partners to develop a comprehensive approach to promoting trade programs by bringing together or linking existing resources on the opportunities and pathways opened up through trades training.

"HIGH ACHIEVERS WILL ALWAYS BE MOTIVATED BUT THERE IS POTENTIAL FOR OTHERS IF THEY HAD KNOWLEDGE OF THE SYSTEM AND THE STEPS WERE CLEARER FOR EVERYONE."

APPRENTICESHIPS: USING THEM TO UNLOCK INDIVIDUAL TALENT
AN ENVIRONMENTAL SCAN

Hugh Guthrie, Work-based Education Research Centre, Victoria University
Natalie Dowling, Faculty of Technical & Trades Innovation, Victoria University

THE CONTEXT

The Victorian Government, in collaboration with stakeholders, is looking at ways to strengthen traditional trades training in Victoria. HESG's (formerly Skills Victoria) 2012 consultation paper 'Building Trade Pathways' (Skills Victoria 2011) identified key challenges and broad reform opportunities to improve the apprentice system and build a more skilled and adaptable trade and technical workforce open to new ideas, new technologies and approaches to work. These include:

- Developing a more attractive, flexible and responsive training model in order to attract a broader range of apprentices
- Moving beyond a 'one size fits all' apprenticeship model to allow for different combinations of work and training to meet the needs of a broader range of learners and businesses
- Equipping apprentices for 21st century jobs
- Improving information, accessibility and support

One of the key challenges identified was the attractiveness of the apprenticeship model, particularly to high achievers and mature-aged workers with previous work experience. This is partly because of a broad perception in Australia - rightly or wrongly held - that vocational education and training is the default pathway for non-academically inclined students, and thus those who are more 'gifted' may be cut off from trade career options or that there are disincentives steering them away from what might be a rewarding and challenging choice: a career in the trades. The paper suggests that:

> "Providing innovative experiences, working with new technologies and exposure to other skills areas are not currently widely available and might prove a valuable way of attracting high achieving apprentices. Unlike many other areas of study/types of qualifications, opportunities for an apprentice to challenge themselves or to easily move to higher level qualifications are comparatively limited" (Skills Victoria 2011, p5)

The reform opportunities the paper suggests include:

- Exposing high achieving apprentices to new technologies, work experiences and broader skills (e.g. project management), and
- Working with training providers and innovative large employers to develop pathways for future industry leaders into master trade and other tertiary qualifications. (Skills Victoria 2011 p13)

Thus, this involves providing and promoting opportunities for skills broadening and deepening during, or following on from the apprenticeship. Such approaches may well be of considerable appeal to those with higher abilities and for certain employers. Indeed, O'Reilly-Briggs (2011) argues that:

> "Extending the existing education pathways for tradespeople in a way that makes a genuine progression clear from the outset has the potential to reinvigorate enthusiasm for those trades that suffer as a result of being socially undervalued and perceived by young people as undesirable career options — and may even encourage and inspire young people to undertake a trade." (O'Reilly-Briggs 2011, p27)

PURPOSE

This environmental scan examines ways in which outstanding apprentices can be provided with rewarding and challenging opportunities during and beyond their apprenticeship based on approaches used both overseas and within Australia. A range of pathways are already available and in use at present, but it appears that their take-up and use is limited. Other approaches have been trialled but do not appear to have taken hold for a variety of reasons. Thus this paper will look at ways in which existing systems and pathways might operate better as well as considering more innovative approaches.

In addition to providing an environmental scan, this paper will also be something of a 'think piece'. This is because a range of the practices in use overseas are culturally bound and dependent on system features not present in Australia's current approaches to apprentice training (for example the dual system characteristic of Austria, Germany and Switzerland versus Australia's British-derived approach).

In this paper we will first consider what an apprenticeship is and some

of the issues surrounding it. We will then go on to discuss a range of these key issues, drawing upon Australian and international practice. Finally we will consider some ways forward and models that might be considered worthy of consideration in moving to attract or recognise outstanding apprentices, and strengthen Victoria's apprenticeship system.

WHAT ARE THE KEY FEATURES OF AN APPRENTICESHIP?

Apprenticeships can be difficult to define with precision. In essence they are:

- an employment-based training arrangement involving an employer, an employee or prospective employee, and an education or training provider
- an occupational training program that consists of a combination of on-the-job training and formal learning (usually undertaken off-the-job)
- a set of regulatory arrangements or a legal contract (originally an 'indenture') that specifies the rights and obligations of the three parties involved—the individual apprentice, the employer and the training provider. (Knight 2011)

The feature that defines apprenticeships in Australia is that the apprentice is an employee from the start, and the on-the-job and the formal or off-the-job components of the training program proceed concurrently. Thus it is a 'place and train' system. (A variation is train, place and train if a pre-apprenticeship program is involved).

A number of other countries are characterised by a 'train and place' approach, including China and Singapore. The United States places very little reliance on employment-based apprenticeships, relying rather more on a combination of institutional and company training. According to Knight (2011), Sweden has dispensed with apprenticeships altogether.

France is characterised by offering apprenticeships at a variety of levels, including degrees. Switzerland has introduced a course of study and examination open only to those who have completed an apprenticeship and which can then lead to a vocational university course. Germany is currently encouraging similar arrangements (Steedman 2010).

The apprentice and trainee destination survey published by NCVER suggests that only 1.5% of Australian graduates in trade occupations (compared with 5.6% in non-trade occupations) went on to study at university within 9 months of completing their trade qualification: 2.8% of trade non-completers did so after leaving (NCVER 2010). A greater proportion of those completing trade went on to further study in TAFE (8.2%) or another provider (5.5%) in that same timeframe. In short, apprenticeships in Australia do not have a strong immediate path into higher education. A study of issues related to the movement between vocational or further education and higher education in the UK by apprentices (Thomas, Cox & Gallagher 2012) suggests that contributing reasons include:

- low awareness of their higher education options
- a dependence on their employer and their attitudes to taking such pathways
- their level of higher education readiness (Thomas, Cox and Gallagher 2012)

In discussions with colleagues who have attempted to establish such programs in the past employer attitudes are key to the uptake of any new approach to packaging apprenticeship programs, and to moving on to further and higher qualifications. Some employers see such opportunities as a reward for their most successful apprentices rather than an arrangement that is committed to at the outset of their apprenticeship. This is despite considerable interest from potential students who are then, in turn, not able to take up such opportunities without a supportive employer.

The British have recently (2009) introduced higher apprenticeships, principally in the Engineering and IT sectors. Designed to meet employers' need for higher level skills, they aim to deliver high-grade tradespeople and technicians, who possess practical skills combined with a higher education involving a range of on- and off-the-job training. They can vary in the time they take to complete, depending on business needs. Higher apprenticeships are also viewed as mechanisms to meet skills gaps and shortages, and to provide alternative, work-based pathways to the professions, particularly for lower SES groups who are more likely to opt for vocational qualifications in the first instance. We will discuss this concept in more detail later in the paper.

Key features which may need to be considered in this paper include the intentions of Victoria's apprenticeships to:

- be seen as a valued educational brand
- provide a high-quality apprenticeship experience
- be available at either a limited range of AQF levels (mainly Certificates III and IV) or broader and higher? Currently, traineeships are available at AQF Diploma and Advanced Diploma levels, although their uptake has been limited (Knight and Karmel 2011)
- be as flexible as possible in their design and to find an

appropriate balance between general education and skills training, formal training in a particular vocation and on-the-job training
- provide pathways and articulation arrangements, and opportunities for career development.

Each of these issues will now be considered briefly before going on to look at potential models for apprenticeship training drawn from Australia and overseas.

ADDRESSING THE ISSUES

THE VALUE OF THE APPRENTICESHIP BRAND

The Expert Panel on Apprenticeships for the 21st Century (Commonwealth of Australia 2011) noted:

> "Australian Apprenticeships, especially traditional trades are an undervalued career choice and often described in negative terms. For example, they are often perceived as physically demanding, unsafe, dirty and poorly paid. Australian Apprentices are often viewed as being from a lower socio-economic background, without the capabilities to enter university and so apply to enter an Australian Apprenticeship. The decision in 1998 to combine apprenticeships and traineeships together under the umbrella term 'Australian Apprenticeships' has created a branding confusion about what an Australian Apprenticeship is within the market place, partly because information on Australian Apprenticeships is produced by various organisations with disparate functions." (Commonwealth of Australia 2011, p13)

This re-labelling and branding issue is also reflected in the British literature (e.g. Keep and James, 2011) and has led to what Fuller and Unwin describe as a three-tier approach to apprenticeships in England:
- those apprenticeships that include full-time employment, good quality, on-the-job training and a knowledge-based qualification of sufficient rigour to provide a platform for progression to further and higher study
- apprenticeships that provide full-time employment, possibly with some off-the-job study, but with a restricted diet of largely job-specific training
- the Apprentice Training Agency-type model, comprising part-time work and minimal training. (Fuller and Unwin 2011, p34)

Perceived 'brand' quality is the key to enhancing the status of apprenticeships as a valued career pathway in Victoria and establishing its credibility as a desirable option for diverse cohorts not currently attracted to trade careers. At the end, the quality and value of the apprenticeship is determined by the:
- AQF level of the apprenticeship qualification (some might even argue that certain apprenticeships are placed too low given the knowledge, skills and attributes outcomes when an apprentice is fully trained)
- 'prestige' and esteem of their employer (and hence the short and longer-term value of working and training in that company to the apprentice)
- quality of training, work environment and support provided by employer and training provider alike, which is underpinned by the quality of the relationship between the employer and the off-job training provider
- recognition of excellence in achievement and moving beyond concepts of competent/not yet competent in assessment decision making
- quality of the apprenticeship applicants coming forward because of the value of the training to them both initially and subsequently. Such apprenticeships can afford to be the most selective, and hence it is the rigour and quality of selection that can lift the status of those apprentices. (One other option may be to develop an elite pre-apprenticeship program that attempts to attract the best and brightest, and which might therefore become a program from which respected enterprises might go to first as a source of the best apprentices.)
- return apprentices get from their experiences as an apprentice in terms intellectual stimulation, work attributes and capabilities, financial rewards, self-esteem and as a platform for personal and vocational progression so that they can grow on beyond as well as within their current job role and sector. (Fuller and Unwin 2011)

In much of Europe – and particularly in the dual-system - this is not an issue because apprenticeships aim to encompass a broad foundation of vocational skills as well as a substantial element of general education to enable people to enter and progress within a broadly defined occupation rather than merely equipping them to undertake a specific entry-level job. They are also built on a system where vocational education in general and apprenticeships in particular are highly esteemed. Employer commitment to apprenticeships is also high in terms of the commitment of time, energy and resources (Steedman 2010). In the dual-system countries 40% or more of school leavers are taken on by employers in a three-year apprenticeship leading to a recognised qualification (Steedman 2011). Steedman (2011) also notes that Swiss apprenticeships in particular recruit from a broad ability range, and well qualified school leavers are encouraged to enter them.

Building on the work of Cartledge (2010), O'Reilly-Briggs (2011) argues for the introduction of a master artisan category in Australia to assist tradespeople to achieve the social recognition and prestige enjoyed by many professions. Such an approach is similar to that available in dual-system countries and would offer pathways to

recognition at AQF 9 level (i.e. equivalent to a masters degree) as an equal but different qualification. It requires a better nexus between valuing the experiences gained in work and through institutional learning. As Karmel notes in introducing O'Reilly-Briggs' paper:

> "One question which is beyond the scope of Ms O'Reilly-Briggs's project is whether there would be sufficient demand for such a qualification to make it viable. While the concept of a master artisan is well established in a number of European countries, it is not one that has ready currency in Australia. The question that needs to be asked is whether employers will pay the premium that would need to be attached to the qualification to make it worth doing — and will providers be brave enough to offer such a qualification?" (O'Reilly-Briggs 2011 "About the research")

Keep and James (2011) comment on comparative studies of apprenticeship systems looking through an English lens:

> "This is a key reason why we find it so hard to learn from overseas apprenticeship systems: they are built upon conceptions of skill and occupational identity, and forms of work organisation and job design that are more or less wholly absent here." (Keep and James 2011, p61)

This is also why broad environmental scans on apprenticeships are challenging in Australia because our apprentice system remains deeply rooted in these British traditions. One is trying to compare an apple with an orange. Inevitably, we return to initiatives in those countries with the most similar apprenticeship traditions to our own to examine the comparative studies they have undertaken and the conclusions they have drawn.

THE QUALITY OF THE APPRENTICESHIP EXPERIENCE

Fuller and Unwin (2011) have documented what they describe as a continuum between an expansive and restricted conception of apprenticeship. Table 1 below adapts slightly what was in their paper. Their model encapsulates the following key organisational features:

1. relationship of the apprenticeship to the business
2. the way an apprentice's work and training are organised
3. pedagogical approach within the workplace and beyond
4. use of qualifications as a platform for progression.

At one end (the expansive) the employer creates environments that make full use of the employees' capabilities. At the other (the restrictive) the focus is on trying to perform a particular job and gain the related qualification. At the expansive end it is about making the most of each apprentice's potential, as well as growing and nurturing the apprentice's personal attributes as well as individual and organisational expertise. This model only reinforces the importance of the employer in establishing the value and scope of an apprenticeship.

Table 1: The expansive-restrictive continuum for apprenticeship (Fuller and Unwin 2011)

Expansive	Restrictive
Apprenticeship is a vehicle for aligning goals of individual development and organisational capability	Apprenticeship is used to tailor individual capability to immediate organisational need
Workplace, training provider and (where present) trade union share post-apprenticeship vision: progression for career	Post-apprenticeship vision: static for job
Apprentice has dual status as learner and employee	Status as employee dominates: status as learner restricted to minimum required to meet statutory 'apprenticeship framework'
Apprentice makes gradual transition to productive worker, gaining expertise in occupational field	Fast transition to productive worker with limited knowledge of occupational field; existing productive workers given minimal development
Apprentice treated as member of occupational and workplace community with access to community's rules, history, knowledge and expertise	Apprentice treated as extra pair of hands who only needs access to limited knowledge and skills to perform job
Apprentice participates in different communities of practice inside and outside the workplace	Participation restricted to narrowly defined job role and work station
Workplace maps everyday work tasks against qualification requirements – qualification valued as extending beyond immediate job requirements	Weak relationship between workplace tasks and qualifications – no recognition for skills and knowledge acquired beyond immediate work tasks
Qualifications develop knowledge for progression to next level and platform for further education	Qualifications accredit limited range of on-the-job competence
Apprentice has time off-the-job for study and to gain a wider perspective	Off-the-job simply a minor extension of on-the-job
Apprentice's existing skills and knowledge recognised, valued and used as platform for new learning	Apprentices regarded as 'blank sheets' or 'empty vessels'
Apprentice's progress closely monitored – regular constructive feedback from range of employer and provider personnel who take a holistic approach	Apprentice's progress monitored for job performance with limited feedback – provider involvement restricted to formal assessments for qualifications

LEVELS OF APPRENTICESHIP: LIMITED OR MULTIPLE?

In Australia most apprenticeships are currently at AQF level 3, with a number at AQF 4. One possibility is to examine the opportunity to offer apprenticeships at higher levels, particularly AQF levels 5 and 6 which, in turn, would potentially improve pathways into higher studies – particularly at university.

There is no denying that such an approach may not be welcomed in some quarters, but it may also provide an impetus to consider whether at least some apprenticeships were designated at the appropriate level and to canvass whether changes to the nature and level of work (with the associated underpinning knowledge and skills) have been adequately recognised in the traditional level of AQF 3 – or if apprentices are in fact operating at a higher level. However, another way to address this issue may be the flexibility of the underpinning training packages and qualifications design.

FLEXIBILITY OF OFFERINGS AND DESIGN

Clearly the flexibility of apprenticeship training packages is critical to individuals and enterprises being able to address their training needs if they are working within the formal training system. Maximising the value of training packages related to apprenticeships might open improved opportunities to:

- undertake optional units of competency drawn from qualifications at higher AQF levels
- develop and offer enterprise-specific units of competence if no suitable unit is available in this or another package
- ensure high quality structured but non-formalised training which is relevant to enterprise or individual needs is appropriately recognised.

While this is not necessarily key to attracting higher quality apprentices, such an approach may offer leading edge companies (and their apprentices) greater opportunities to undertake training that is of high value to their business, and ultimately develop higher level or broader skills in their apprentices. In examining this issue further we will discuss a range of models through which this might be achieved, including the Applied Technology Framework developed at RMIT University (Down 2004)

APPRENTICESHIPS AS A PATHWAY NOT AN END-POINT

We have already discussed the extent to which apprentices access further study shortly after completing their apprenticeship. By and large, these levels are relatively low. Unfortunately we have little or no access to information about study undertaken in the longer term, nor about the nature of Continuing Professional Development undertaken to broaden or deepen skills and to retain vocational currency.

Such a pathway may begin during the apprenticeship with sufficient flexibility in award design, or follow after completion of the apprenticeship. The pathways open depend on the availability of suitable programs and the ways in which they might be packaged to increase appeal. Their take up and use by apprentices is dependent, as we have seen in the UK, on their knowledge of their options. It is also highly dependent on the attitudes of their employers.

A key aspect of this, in Victoria at least, will be that dual-sector universities, TAFE institutes and other organisations offer apprentice programs that provide pathways between their awards and across sectors to facilitate opportunities for their apprentice alumni to access further and higher qualifications – and work actively with their employers. For example, such an approach is in the spirit of Victoria University's latest strategic plan (Victoria University 2011) incorporating – amongst other things - a distinctive curriculum and approach to learning and teaching emphasising work-integrated learning, learning-integrated work and problem solving. As such it is committed as an institution to working more closely with enterprises and industry, providing pathways between sectors, and is committed to lifelong learning.

MODELS OF INNOVATIVE PRACTICE IN APPRENTICESHIPS

Here we pose several general models for apprenticeship training. Essentially the models draw upon three related but different approaches:

- **a sequential model:** *which opens pathways to a series of qualifications and skills sets which build progressively deeper or broader skills, beginning with an apprenticeship.*
  For example, this might be where a tradesperson opts to undertake business studies to support becoming their own boss, or a Certificate IV/Diploma to progress to the role of construction site or project manager. Sequential options are more likely to be taken up by motivated individuals at their own pace and in line with career intentions, experience and opportunities, rather

than being considered as part of the formal apprenticeship structure. In this sense the option reflects existing arrangements, but there is scope to potentially promote sequential 'packages' upfront, to formalise stronger links and pathways and to improve the awareness, availability and use of pathways to up-skill the trade workforce and encourage lifelong learning and career development. Consideration could be given to RPL, bridging programs or Associate Degrees that could support pathways from competency based certificate level courses into higher degrees rather than requiring apprentices to climb all rungs of the AQF ladder in sequence towards higher degrees. A more significant innovation to attract high achievers could be to develop a selective pre-apprenticeship program which would aim to attract high quality candidates and thus be a desirable source of high quality apprentices for a range of employers. Such a program might be run by a single provider, or involve a partnership between a range of providers to draw upon the best available staff and expertise.

- **a concurrent model:** *which allows a series of qualifications to be undertaken at the same or different levels of a sequence to be undertaken concurrently, as part of apprenticeship arrangement.* There are motivated students who we know navigate multiple systems to undertaken concurrent studies but can only do so in an ad hoc rather than a systematised or structured way. At Victoria University for example, we know of a student who commenced his university degree in construction management part-time upon completion of the first year of his apprenticeship at a different institution. In order to maintain this work and course load, he attended university some evenings and continued to work through his apprenticeship on-site and at VU during the week. He intends to finish his university course on a full-time basis when he completes his apprenticeship. Alternatively a concurrent model could require a commitment embedded in the training plan or apprenticeship contract that is formalised with an employer. For example, at least one institution delivers a Diploma of Engineering – Advanced Trades.
- **an integrated model:** *which uses a qualifications framework as the basis to develop an apprenticeship qualification of a level and type which most meets the needs of the enterprise.* Potentially, and at its most radical, it might draw from a range of training packages and accredited training programs, as well as allowing for the development of enterprise specific units of competency, such as higher apprenticeships or the Applied Technology Framework (Down 2004) which we discuss shortly. This is a particularly valuable approach if the occupational area is evolving rapidly, or to accommodate the needs of enterprises and individuals working in niche or emergent areas.

It should be noted that limitations on these models will include the:

- flexibility of the training packages on which they are drawn and the extent to which programs can be customised. The most limited arrangement is where a training package qualification is core only and most adaptable where it is elective only. However, the three most common approaches are the core and elective, core and specialisation or core, specialisation and elective models. Their flexibility depends on the proportion of required versus elective units
- extent of employer commitment which will be contingent upon the workplace approach to training and career progression, incentives and funding implications, work scheduling and other business imperatives.

Table 2 attempts to map these three models from the perspective of students/apprentices, employers, VET providers and government.

Model	Student/apprentice	Possible support through CPD	VET provider	Government
Sequential	At own pace for career progression and direction	Up front commitment	Pathways & articulation	Funding
Concurrent	Up front commitment Timetabling	Scheduling implications Industrial award implications	Timetabling	Incentives
Integrated	Fit for current purpose and future skill need	Tailored to suit Industrial Award implications	Curriculum development	Funding Approval processes

FROM OVERSEAS

HIGHER APPRENTICESHIPS

In the UK higher apprenticeships (modern apprenticeships in Scotland) are being used by large and prestigious companies like Airbus, Rolls Royce, British Telecom and Vodafone. Their frameworks vary, which is made possible by legislation that allows organisations, including employers, to propose and develop a framework with the support of the Issuing Authority (SSC/UKCES commissioned body) for that sector (http://www.afo.sscalliance.org/). The apprenticeships may combine an NVQ4 qualification with a foundation degree and embed the possibility to top up to a bachelor degree (Hall, Joslin and Ward 2010).[1] They potentially provide a pathway into higher education and the professions through work-based routes, and the opportunity to 'learn while you earn' (Williams & Hanson 2011).

Such awards need to be demand led, both locally and at national level to ensure buy-in from all relevant stakeholders, including apprentices – who need to see value[2]. This value may not be perceived at outset. Therefore the model has to be adaptable to pick up those who become outstanding in the course of their apprenticeship. Employers are particularly important, and solutions are likely to be locally-based and even enterprise specific. Collaboration is critical, especially between employers and providers.

There has been a considerable talking up of the value of such approaches as this article by Cera Murtagh in the Scottish magazine Holyrood shows (see Box 1). However, it seems that take-up has not been high in the UK and the approach is not without its critics (Sweet, pers. comm.). For example, Boswell (2011) notes:

> "Given that we are only now reaching a critical mass of numbers of apprentices of any kind, it is worthwhile rehearsing what will be the function of these higher apprenticeships, other than merely creating qualifications matching across to levels 4 to 7 of the academic route… Certainly, even for those interested in progression and personal development, there are remarkable cultural barriers in the current system. While admission to a prestigious engineering apprenticeship may be more selective than Oxbridge in terms of applications turned down, it is equally striking that the number of advanced apprentices progressing to higher education is only some 4 per cent. This either implies, implausibly, that the apprenticeship system optimises its coverage, or, realistically, that the necessary flexibility and progression are lacking.
>
> In reviewing the policy framework, we need to ask bluntly: what is the appetite for activities leading to an advanced apprenticeship? The honest answer is that there is comparatively little pressure for their introduction. Any enthusiasm is concentrated in certain sectors (such as engineering) and among larger employers. There is no sign of significant demand among small and medium-sized firms, or in major sectors like construction or retailing…
>
> It may well be that the pursuit of advanced apprenticeships as a universal pattern is misaligned with requirements of firms and that, here again, we are suffering from the pursuit of 'parity of esteem' to be delivered through equivalence of qualifications. The history of vocational skills is characterised by abortive, serial initiatives designed to engineer employer demand by decree, rather than objective need." (Boswell 2011, p88)

BOX 1

These high-end apprenticeships offer "stunning opportunities" with high earning ability, according to Damien Yeates, the Chief Executive of Skills Development Scotland (SDS). So before automatically opting for university, young people should give the Modern Apprenticeship (MA) route some thought.

"At the high end [of apprenticeships], at level 3 and level 4, you come out with three or four years' industry experience behind you, you're almost on degree-level curriculum, you're on a real incredible trajectory for your career in comparison to going to university," he says.

"So even in these hard economic times, I think there's a challenge to communicate more critically the value and the variety of apprenticeships as they exist because it shouldn't be viewed as a lesser option.

"The engineering apprenticeships with people like Babcock's, with Rolls Royce, with BAE Systems, they are stunning opportunities. And they would stand up much, much more forcibly to university opportunities than people might think

"Because I still think there's a psyche out there that it's a vocational route which is a lesser route to the university route, and I tell you, in these hard economic times, having a job and upskilling while you're in a job is certainly more productive than an investment in university. That's not to say one is good and one is bad. It's just to say it's a balance issue that could be better addressed." Yeates adds: "My personal view is that I would like to see more going down that route and I think the potential opportunities are far more diverse than people would have thought before." MAs with firms like BAE Systems are particularly prestigious. The defence company is one of the biggest employers of apprentices in Scotland, with 200 currently going through the system. It offers a range of technician MAs in areas like combat systems engineering. And after starting their careers as apprentices, many move on to much bigger things, says Andrew Smith, HR Director at BAE Systems in Scotland

1 A foundation degree is a combination of work based learning and academic study and because it is validated by universities, it can be developed collaboratively with employers on a local basis to ensure it covers both the knowledge and competence elements both employers and Sector Skills Councils (The British equivalent of our Industry Skills Councils) require.

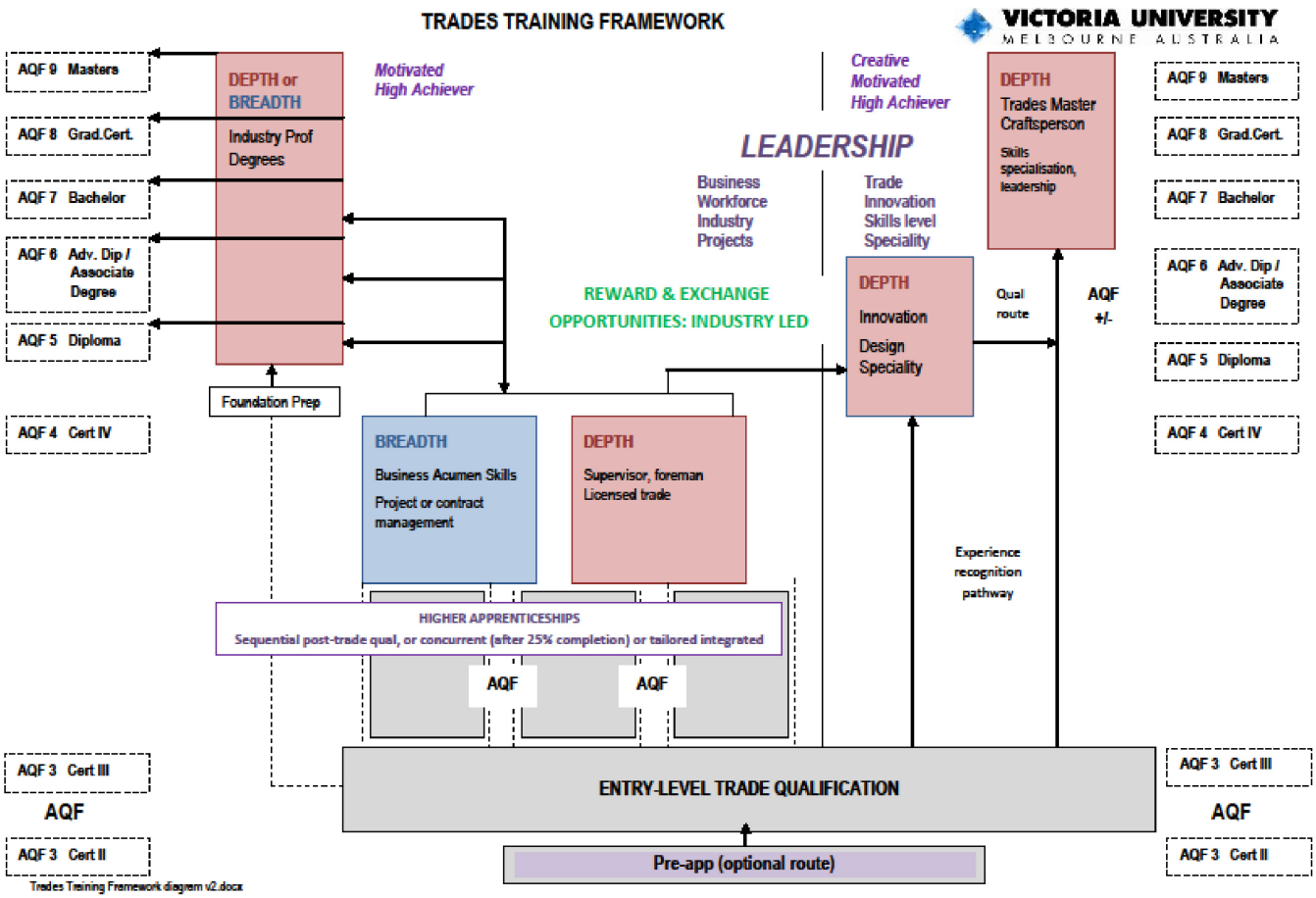
2 As a aside it might be noted that in a case study on higher apprenticeships it was noted (Williams and Hanson 2011, p19): "You get one set of apprentices who just want to finish their apprenticeship and go out [and] earn a good wage, but you also get a different type of apprentice who sees it as a way to progress onto better things. But at the moment the only way they can progress is by going back into knowledge based learning."

Boswell (2011) argues that, while such higher level apprenticeships may be appropriate in some contexts, a much more flexible overall approach may be needed: one which is not so much about a rigid apprenticeship label, but rather about a coherent programme of continuing professional development that offers learners and their employers' flexibility without incoherence.

In Australia higher apprenticeships could provide a way of attracting and supporting high achievers by providing pathways to higher qualifications and leadership development opportunities through the apprentice system. The approach is not necessarily about taking and adopting what has been done in the UK; rather it is about establishing a model – or models – that could be trialled and then possibly implemented here. Possible frameworks and approaches therefore need to be defined and then tested. In the first instance at least it is likely that higher apprenticeships would complement traditional approaches, and appeal most to particular enterprises and industry sectors; most likely larger companies and those in niche areas. Nevertheless, other models should also be considered, but these may be challenging to implement given VET system and industrial relations rigidities and policy which values qualifications over high levels of skills acquired, held and used through experience and non-formal training. This is what potentially makes flexible training frameworks that incorporate the formal and informal potentially appealing.

A recent fellow for the International Specialised Skills Institute investigated overseas models in furniture making with particular interest in how to incorporate design or other elements perceived to be missing from the Australian apprenticeship. In comparing models Bury (2012) noted that examples in the US where business skills were embedded into a course and other models such as Steneby Skolan in Sweden where design elements are embedded into vocational courses and that the creative process, informs pathway opportunities to higher degree levels. Design elements could form part of a higher apprenticeship framework in certain trades (such as furniture making) where the artisan craft is viewed as important, and a potential pathway into a Master Artisan program could be developed as part of a trades training framework.

The Precision Engineering Workforce Skills Qualification System Singapore is an example of a skills competency and qualification matrix that outlines operational, supervisory and managerial roles and allows for progression into two main pathways – generalist managerial or specialist technical, which could be viewed in our context in terms of depth or breadth in the trades training framework below.



FROM AUSTRALIA.

There are a number of pathways to higher degrees, particularly diplomas but not many are formalised, tailored or well promoted to trades people. ISCs have flow charts outlining career options relative to qualifications and existing training packages but these are largely based on the sequential model.

Entry level to diplomas regularly state Year 12 as a pre-requisite or promote mature age entry. Although there might be acknowledgement at policy or institutional contexts of the equivalency of Certificate III, it is unlikely that this is well understood by apprentices and it might be detracting them from realising the pathway potential of their qualification.

The Qld IACT 3DArticulation project is a good example of visually mapping career pathways from Certificate IIs through to Bachelor degrees including Building and Construction and Engineering flowcharts. There could be merit in exploring similar for the Victorian landscape, but the diagram is also illustrative of the complexities that would need to be worked through and then navigated by potential apprentices.

RMIT does deliver a Diploma of Engineering – Advanced Trades that is designed for existing apprentices who wish to further their qualification or newly employed apprentices whose employer registers them for an apprenticeship over 5 years. The qualification is based on the Metal and Engineering Training Package but includes a modified curriculum to allow for the concurrent achievement of a work-based apprenticeship. Despite the innovative and considered course design, RMIT have informally reported limited success. Student interest has been strong but employer demand required for a training contract has been weak, given the need for a longer than usual up-front commitment to an apprentice training period. Although competency-based progression models could make the duration more compact, there are issues around employer commitment that will be further explored in the scoping discussions of this project.

The importance of higher degree development in technical and trade areas being industry led is highlighted by the mining industry, which through the Minerals Council of Australia and enterprises are working with a group of tertiary institutions to pilot Associate Degrees to address skills shortages in geosciences and engineering. The Associate Degree option is being explored as pathway or up-skilling opportunity into the industry as a paraprofessional, a model which could potentially work well for engaging tradespeople. The pilot program is looking in particular at how the model would be implemented and the practicalities around combining work and study in practice, which are issues critical to the development of any higher apprenticeships model.

There are examples of industry recognising opportunities to credential existing trade skills such as the Master Builders of Australia Diploma of Building and Construction (Building) CPC50210 operating in NSW. Certainly recognition would be part of a wider trades training framework but the key to providing higher opportunities would seem to be collaborative development by industry and training organisations of stronger pathways and new curriculum. http://www.masterbuilderstraining.com.au/courses-and-qualifications/builders-a-tradies-qualifications/diploma-of-building-and-construction.html

THE APPLIED TECHNOLOGY FRAMEWORK

This concept (Down 2004) is based on an accredited training framework rather than on accredited qualifications. Underpinning this is the assumption that learning is expansive and unbounded, and shaped by need and context. The program, which was largely experimental, aimed to facilitate and develop programs which:

- related to one another and thus provided development frameworks which link to job and career structures within a number of industry sectors
- enabled the lifelong development of design, process, project management and business competence as well as acquisition of current and emerging technical competencies
- allowed for cross-sectoral skill development
- could be easily broken up into relatively short intensive programs to meet the needs of individuals and specific industry enterprises
- used mentoring, active learning approaches and reflective practice to integrate formal and experiential learning within the context of the workplace
- provided multiple entry and exit points which enable them to be accessed in a variety of ways (Down 2004, p173).

It was aimed primarily at those studying post-trade. Nevertheless, its first stage could be a trade program. It contained a series of qualifications across a range of AQF levels. It also sought to recognise structured but non-accredited programs run by the enterprise itself, professional organisations, vendors and suppliers. This could be done through recognition of current competency or by using specific units of competency focused on recognising on-going professional development.

THE CONSTRUCTION MANAGEMENT PROJECT (RMIT UNIVERSITY)

This project was undertaken in the School of Property, Construction and Project management at RMIT University, and aimed to:

- provide higher education students with industry relevant practical education and learning
- develop a model of staff exchange and curriculum between HE and TAFE in construction
- promote pathways for dual sector qualifications (McLaughlin & Mills 2011)

The program coupled hands-on practical experience gained through TAFE programs with a higher education knowledge base. It uses carefully selected TAFE construction electives together with reverse articulation agreements and Recognition of Prior Learning (RPL) to qualify students for both a degree and a diploma at the same time. Students felt that such parallel qualifications might give them an employment edge with practical skills. While not run as an apprenticeship, such an approach might be possible with appropriate employer support (McLaughlin & Mills 2011).

WHERE TO FROM HERE?

SOME KEY CONCLUSIONS

Employers with the high levels of apprentice retention seem to share a view that their industry values formal qualifications and acknowledges that young people cannot go far without them. Yet for many SMEs (which form the majority of apprentice employers in Victoria) taking this broader view can be a challenge in the context of their day-to-day business imperatives.

The work underway in Victoria to embed competency-based completion/progression and RPL frameworks could provide a good foundation for additional or higher skills to be acquired or recognised within the apprenticeship framework. If a student opted for a higher apprenticeship course either at commencement or designated milestone, simultaneous delivery could result in swift completion, meaning that skills could be utilised more readily, harnessed by business for productivity gains and to meet skills shortages. Current and projected shortages for roles such as Construction Project Manager or Surveyors are examples of where higher apprenticeships could fill a void and provide well-defined career pathways and outcomes.

However, it is not going to be easy. It will require overcoming existing systems, or building on or over existing arrangements to broaden the concept of what an apprenticeship is, what it entails and can lead to. Some of the challenges will include:

- applicability and take-up, especially employer commitment
- strengthening general education
- improving the quality of the work-based learning experience
- parity of esteem: raising the status of VET and addressing quality issues
- value of learning: skills versus qualifications
- recognising the value of additional training
- addressing any industrial award issues.

The next steps will be to discuss opportunities with industry and employers to test demand and identify barriers and incentives to trialling a higher apprenticeships model or developing a more systematic trades training framework.

Feedback should also be sought from an NCVER 'work in progress' project entitled, 'Hurdling the great divide: Investigating enabling factors in AQF 5, 6 & 7 transitions in the construction industry'. Subsequent to scoping discussions it would seem that pilot programs would best be developed by identifying industry and enterprise partners that take an expansive approach to apprenticeships and workforce development to work with training organisations. In particular, industries that have identified skills shortages or workforce objectives that could be addressed through the delivery of higher qualifications would be important.

SOURCE MATERIALS AND REFERENCES CITED

Alliance Sector Skills Council, Apprenticeship Frameworks Online. http://www.afo.sscalliance.org/ (accessed June 2012)

Bury, R., Accelerated Apprenticeship Delivery Programs. International Specialised Skills Institute. Skills Victoria International TAFE Fellowship report, May 2012.

Boswell, T., Advanced apprenticeships: Progression routes in vocational education, in Dolphin, T. & Lanning, T. (Eds), Rethinking apprenticeships, London: Institute for Public Policy Research at http://www.ippr.org/publications/55/8028/rethinking-apprenticeships (accessed May 2012)

Cartledge, D., 2010, STEM — a technical renaissance? Proceedings: 2010 International Conference on Science, Technology, Engineering and Mathematics STEM education, Queensland University of Technology, Brisbane, 25—27 November 2010.

Commonwealth of Australia, 2011, A shared responsibility: Apprenticeships for the 21st Century, Final report of the Apprenticeships for the 21st Century Expert Panel at http://www.australianapprenticeships.gov.au/FAQ/Publications.asp (accessed May 2012)

Down, C., 2004, Tackling emergent needs: The Applied Technology Framework project ,in Dawe, S., (ed.), Vocational education and training and innovation: Research readings, Adelaide: National Centre for Vocational Education Research at http://www.ncver.edu.au/publications/1486.html (accessed May 2012)

Fuller, A. & Unwin, L., 2011, The content of apprenticeships, in Dolphin, T. & Lanning, T. (Eds), Rethinking apprenticeships, London: Institute for Public Policy Research at http://www.ippr.org/publications/55/8028/rethinking-apprenticeships (accessed May 2012)

Hall, G., Joslin, H. & Ward, J., 2010, Developing higher apprenticeships in England, Policy paper: Lifelong Learning networks National Forum at http://www.llnstaffordshireshropshire.org/assets/user/files/1275042571_developing-higher-apprenticeships-in-england-lln-national-forum-policy-paper-13-may-2010.pdf (accessed April 2012)

Keep, E. & James, S., 2011, Employer demand for apprenticeships, in Dolphin, T. & Lanning, T. (Eds), Rethinking apprenticeships, London: Institute for Public Policy Research at http://www.ippr.org/publications/55/8028/rethinking-apprenticeships (accessed May 2012)

Knight, B., 2011, International comparisons, in NCVER 2011, Report 2: Overview of apprenticeship and traineeship institutional structure, NCVER Research Reports for Apprenticeships for the 21st Century Expert Panel at http://www.australianapprenticeships.gov.au/FAQ/Publications.asp (accessed May 2012)

Knight, B. & Karmel, T., 2011, Apprenticeships and Traineeships in Australia, in Dolphin, T. & Lanning, T. (Eds), Rethinking apprenticeships, London: Institute for Public Policy Research at http://www.ippr.org/publications/55/8028/rethinking-apprenticeships (accessed May 2012)

McLaughlin, P. & Mills, A., 2011, Combining vocational and higher education studies to provide dual parallel qualifications, Journal of Further and Higher Education, 35:2, 233-245

Murtagh, C., 2011, Are apprenticeships the key to getting Scotland working again? Holyrood Magazine at http://www.holyrood.com/articles/2011/01/28/learning-on-the-job/ (accessed may 2012)

NCVER, 2010, Australian vocational education and training statistics: apprentice and trainee destinations 2010, Adelaide: National Centre for Vocational Education Research at http://www.ncver.edu.au/statistic/21077.html (accessed May 2012)

O'Reilly-Briggs, K., 2011, The master artisan: a framework for master tradespeople in Australia, Adelaide: National Centre for Vocational Education Research at http://www.ncver.edu.au/publications/2452.html (accessed may 2012)

Skills Victoria, 2011, Building trade pathways: Strengthening trades training in Victoria. Melbourne: Department of Education and Early Childhood Development at http://www.eduweb.vic.gov.au/edulibrary/public/commrel/about/skills/buildtradepathconsultation.pdf (accessed April 2012)

Steedman , H., 2010, The State of Apprenticeship in 2010: A report for the Apprenticeship Ambassadors Network. International comparisons Australia, Austria, England, France, Germany, Ireland, Sweden, Switzerland. At http://cep.lse.ac.uk/pubs/download/special/cepsp22.pdf London: Centre for Economic Performance, The London School of Economics and Political Science (accessed May 2012)

Steedman, H., 2011, Challenges and change: Apprenticeships in German-speaking Europe in Dolphin, T. & Lanning, T. (Eds), Rethinking apprenticeships, London: Institute for Public Policy Research at http://www.ippr.org/publications/55/8028/rethinking-apprenticeships (accessed May 2012)

Thomas, E., Cox, J. & Gallagher, P., 2012, Progression to higher education: the voice of the apprentice, Research in Post-Compulsory Education, 17:1, 93-113

Victoria University, 2011, Excellent, engaged and accessible: Victoria University's Strategic Plan to be a great University of the 21st Century, 2012 – 2016, Melbourne; Victoria university at http://www.vu.edu.au/about-vu/vus-vision/strategic-plan (accessed May 2012)

Williams, C. & Hanson, W., 2011, Higher apprenticeships and professional bodies: A report for the National Apprenticeship Service, Bristol: Professional Associations Research Network at http://www.parnglobal.com/uploads/files/907.pdf (accessed April 2012)

CONSIDERING APPRENTICESHIPS TO REWARD AND CHALLENGE HIGH ACHIEVERS: A TRADES TRAINING FRAMEWORK TO AIM HIGHER

WHY EXPLORE APPRENTICESHIPS FOR HIGH ACHIEVERS?

The Victorian Government, in collaboration with stakeholders, is looking at ways to strengthen traditional trades training in Victoria.

New approaches to trades training or ways of re-packaging apprenticeships have the potential to attract and support high achievers to trade careers, by providing pathways to higher qualifications and leadership development opportunities.

WHAT IS THIS PROJECT ABOUT?

This scoping project is investigating the feasibility of providing outstanding apprentices with rewarding and challenging opportunities during their apprenticeship.

It is also exploring the broader potential to unlock pathways to career progression and recognition in the trades by incorporating opportunities for further or higher level study during or following an apprenticeship.

While a range of pathway models are in use at present, the project will explore the viability of more innovative approaches before considering a pilot development phase. The likely approach is to adopt - or adapt – ideas that have been tried before in Australia, as well as others in use overseas.

WHAT WILL BE THE BENEFITS OF NEW APPROACHES?

Apprenticeships within a Victorian trades training framework could possibly be improved so that they:

- Up-skill the trade workforce to a *higher* level as required by and tailored to industry and enterprises, particularly in areas of skills shortage
- Attract *high* calibre people into trade and technical industries
- Afford *higher* status and recognition to trade careers and apprentices
- Provide accessible pathways to *higher* skills, knowledge and qualifications
- Support *higher* commencement, satisfaction and completion rates by attracting and engaging new and existing workers with challenging and rewarding opportunities
- Deliver *higher* quality training and assessments with appropriate breadth and/or depth of skills and knowledge

WHAT FORMS COULD THESE NEW APPROACHES TO APPRENTICESHIPS TAKE?

Apprenticeships could be used more effectively to:

- Develop in depth skills and knowledge in a particular field through formal study and/or informal training (for example, high level supplier-based training)
- Develop a breadth of knowledge in related fields – for example training in a broader range of trades skills and knowledge or developing supervisory or management skills as part of an integrated package
- Develop new occupational levels and titles which meet particular business needs (e.g. Master Artisan or Craftsperson classifications)

WHAT ARE THE POTENTIAL FEATURES OF THESE APPRENTICESHIPS?

- Being specifically developed to meet the needs of a particular company or industry sector with their active input to design and delivery
- Being suited for both initial entrants or experienced workers
- Providing employees the opportunity to earn while they learn, and through their employer to have an internal career path
- Incorporating very significant components of integrated learning at work
- Very flexible packaging rules for higher qualifications, drawing on existing and specially developed units of competency
- Allowing for ready recognition of informal or structured but non-accredited learning
- Developing and incorporating specific units of competency not available elsewhere, but which meet a specific company training or business need
- Being offered at levels above a traditional trade certificate (Certificate III)
- Concurrent or end-on studies at a variety of qualification levels
- Effective collaborative arrangements across educational sectors and within or between institutions
- Using entrepreneurial providers with the skills to work closely with particular enterprises.

WHAT ARE SOME MODELS TO CONSIDER?

The sequential model

This type of model would support accessible pathways, beginning with an apprenticeship, moving through to qualifications and skills sets that build progressively deeper or broader skills.

For example, this might include a qualified tradesperson undertaking a Certificate IV/Diploma to progress to the role of construction site or project manager; or it could mean enrolling in business studies to support becoming their own boss.

This model reflects existing arrangements that are not necessarily part of the formal apprenticeship structure.

There could also be expanded promotion of sequential 'packages' upfront to better highlight trade career opportunities. Formal links and pathways might improve awareness, availability and use of pathways to up-skill the trade workforce and encourage lifelong learning and career development.

There may be scope to develop new curriculum or qualifications to expand the range of available options, such as Associate Degrees or Master Artisan.

There are examples of industry recognising opportunities to credential existing trade skills such as the Master Builders of Australia Diploma of Building and Construction (Building) CPC50210 operating in NSW. Certainly recognition would be part of a wider trades training framework but the key to providing higher opportunities would seem to be collaborative development by industry and training organisations of stronger pathways and new curriculum.

The concurrent model

This model would support two or more qualifications being done at the same time, as part of the formal apprenticeship arrangement, for example a Certificate III combined with a Certificate IV or a Diploma or potentially a degree.

Some apprentices undertake Cert IV courses concurrently with their apprenticeship, often attending night classes. We also know of motivated apprentices who navigate multiple systems to enrol simultaneously in degree studies, such as construction management. This tends to happens in an ad hoc rather than a systematised or structured way.

A formal concurrent model would likely require a commitment embedded in the training plan or apprenticeship contract that is agreed to by an employer.

It might allow for an apprentice to undertake diploma or degree studies simultaneously with practical apprentice training. The qualification would be based on a Training Package but include a modified curriculum to allow for the concurrent achievement of a work-based apprenticeship with another qualification. Flexible scheduling – utilising competency based completion models - could allow for broader and deeper skills to be obtained within a nominal training timeframe.

The integrated model

This would involve a qualifications framework as the basis to develop an apprenticeship qualification of a level and type which most meets the needs of the enterprise.

This is the most radical of the potential approaches proposed, as it might draw from a range of training packages and accredited training programs for its component parts, as well as allowing for the development of enterprise specific units of competency. This is similar in approach to the higher apprenticeship model in the UK which allows for cross sectoral skill development above diploma level. The approach may also enable structured but non-formal training (such as supplier-based training) to be formally recognised. Thus, it is flexible and strongly focussed on the needs of particular enterprises.

Trades Training Framework

There is potential for opportunities to attract and support high achievers to trade careers. How the higher models would be developed and where they would fit in the bigger picture of trade qualifications also needs to be considered.

There is potential for a more systematic trades training framework in Victoria with clearly articulated streams for career entry and advancement at different levels. This could include a range of breadth and depth opportunities across both higher vocational and professional / academic courses.

Competency-based completion/progression and RPL frameworks could provide a foundation for additional or higher skills to be acquired or recognised within an apprenticeship. If a student and employer opted for a higher apprenticeship model either at commencement or designated milestone, simultaneous delivery could result in swift completion, meaning that skills could be utilised more readily, harnessed by business for productivity gains and to help meet skills shortages. Current and projected shortages for roles such as Construction Project Manager or Surveyors are examples of where higher apprenticeships could fill a void and provide well-defined career pathways and outcomes.

The Precision Engineering Workforce Skills Qualification System Singapore is an example of a skills competency and qualification matrix that outlines operational, supervisory and managerial roles and allows for progression into divergent pathways – generalist managerial or specialist technical.

New master artisan degrees (AQF 9) in Australia might assist tradespeople to achieve social recognition and esteem, and thereby reward and attract high achievers. While the concept is well established in a number of European countries, demand in Australia needs to be tested. It could contain design elements as part of a higher apprenticeship depth framework in craft oriented trades such as furniture making.

Next steps

This paper will inform discussions with industry and employers to test demand and identify barriers and incentives to higher apprenticeships model or trades training framework.

CONSULTATION QUESTIONS

CONSULTATION QUESTION - employers

1. How do you identify and select apprentices? How difficult is it to find high quality apprentices?
2. How do you recognise, reward and retain your best apprentices?
3. What job roles and/or skill requirements – if any - are not being met through traditional apprenticeships at Cert III or IV level?
4. Are there existing ways to ensure high achieving apprentices are challenged and rewarded?
   a. If yes, what are they?
   b. If not, what could be improved or developed?
5. Think about the models or examples presented in the accompanying paper:
   a. What are the benefits, barriers and practical implications of implementing each?
   b. Are there other ways or ideas about higher apprenticeship training that you would consider?
6. Would you support 'higher apprenticeship' qualifications and/or the development of higher vocation pathways such as Master Artisan degrees?
7. Would you prefer to have an apprentice qualified more quickly or for them to have access to broader or deeper training as part of their training contract?
8. How could apprenticeship training better suit the needs of your organisation?
9. How could training providers work with you to develop your trade and technical workforce more highly?
10. Would you be willing to participate in a pilot to develop a framework and/or curriculum for a 'higher apprenticeships' model?

Hugh Guthrie,
Principal Research Fellow
Work-based Education Research Centre
03 9919 8529 / 0478 405 785
Hugh.Guthrie@vu.edu.au

Natalie Dowling,
Executive Officer – Strategy & Projects
Faculty of Technical & Trades Innovation
03 9919 7346 / 0421 573 781

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

TIERS IN THE APPRENTICESHIP MARKET

Employer tiers (Bardon 2010, p10):

Tier 1- Employers of Choice	Tier 2 - Conventional employers	Tier 3 - Challenging workplaces:
Iconic regional or national brand Above Award wages Long term apprenticeship program Supportive apprenticeship culture Involved in VET in schools Clear about skill requirements Exemplary OHS Strong HR systems Good career prospects	Pay award wages Have identified skill needs OHS systems OK Cyclical business patterns Need apprentices in the medium term Sound HR practices Contemporary apprentice support Trade pathway	Do not fully comply with award OHS systems patchy Short term need for labour Basic HR processes Old fashioned apprentice support Motivated by cheap labour

Employer tiers (Bardon 2010, p10):

Tier 1 - Aspirational	Tier 2 - Ambivalent	Tier 3 - Apathetic
Family support Family trade background Clear vocational path Trade network VET in school Aptitude for trade Prepared to commit Prepared to work for low wages Realistic expectations Confident learner Good match to employer	Want to acquire skills Trade is one possible pathway Want skills recognised through pay Ready to move jobs Some aptitude	Unsure about carer goals No relevant work history No 'trade' culture Identified learning issues

See Bardon, B 2010, The future of trade apprenticeships in Australia, Central West Group Apprentices, Bathurst.