RESEARCH REPORT

NCVER

Higher apprenticeships in Australia: what are we talking about?

National Centre for Vocational Education Research

INFORMING + INFLUENCING
THE AUSTRALIAN VET SECTOR

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About the research

Higher apprenticeships in Australia: what are we talking about?

National Centre for Vocational Education Research

The concept of utilising apprenticeship like models of training at higher qualifications levels to address the evolving skill needs of Australia's workforce is an emerging issue. Internationally, the application of the apprenticeship model (or similar) at higher vocational education and training (VET) levels, and in higher education, has fuelled discussions on whether these different models could or should be considered in Australia. In addition, the two trials currently being conducted through the 'Apprenticeship training — alternative delivery pilots' program, funded by the Australian Government, have further focused attention on the potential for higher apprenticeship models.

Through a national forum of industry reference committee chairs and service skills organisations, and interviews with a variety of stakeholders, this research explores how higher apprenticeships might be conceptualised in different industries and education sectors, the extent of their role and demand, possible structures of higher apprenticeships and the potential challenges to their broader use.

A spectrum of perspectives about higher apprenticeships was uncovered through the research, ranging from those who hold a traditional view of how apprenticeships should continue to be implemented, to those who have a broader perspective on how the model could be modified and expanded.

Key messages

- There is some stakeholder interest in various models of higher apprenticeships. However, the concept is complicated, given that higher apprenticeships potentially span both the VET and higher education sectors and are therefore subject to different educational, funding and regulatory arrangements. These complexities make it difficult for some stakeholders to hypothesise how higher apprenticeships would operate in their industry.
- Given the divergent views of stakeholders, it is unlikely that a 'standard' higher apprenticeship model can be developed and successfully implemented. A more likely scenario is the development of a variety of higher apprenticeships and apprenticeship-like models of learning within the constraints of the current system.
- Whether a higher apprenticeship is undertaken through contract of training or not, the key determinants of a successful model will be one that it is fit for purpose for the enterprise and has a demonstrable benefit for employers and their employees.

Simon Walker
Managing Director, NCVER

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Contents

Tables and figures

Tables

Figures

Executive summary

What is a higher apprenticeship?

The term ‘higher apprenticeship’ has recently entered the vocational education and training (VET) lexicon in Australia, partly as a result of the ‘Apprenticeships training — alternative delivery pilots’ program, currently underway and funded by the Australian Government. The 2018 National Partnership Agreement on Skilling Australians Fund also refers to ‘higher apprenticeships’.

The Apprenticeships training — alternative delivery pilots are being funded under two streams, with stream two focusing on higher-level apprenticeships, where ‘higher-level’ is defined as diploma or associate degree. The stream two pilots do not elaborate on what is meant by the term ‘apprenticeship’.

In the National Partnership Agreement on Skilling Australians Fund (Australian Government 2018a), a policy definition of higher apprenticeships for the purposes of the agreement is:

> Higher apprenticeships combine a program of structured on-the-job training with formal study, with the study component leading to the award of a VET qualification at the Australian Qualifications Framework level 5 (diploma) or level 6 (advanced diploma).

What can be gleaned from these definitions is that the word ‘higher’ in ‘higher apprenticeships’ refers to higher-level qualifications, including higher education qualifications, at the diploma level (AQF 5) and above, and that the term ‘apprenticeship’ can be an arrangement that does not explicitly require a contract of training.

By comparison, there is a long-standing and widely understood definition of an apprenticeship as a contract between an employer and an apprentice (training contract), one that involves a mixture of formal accredited training and on-the-job skills development as part of paid employment. Training contracts are prescribed and registered under states and territories’ legislation. Apprenticeships have traditionally been exclusively confined to a VET qualification.

Note that, for the purposes of this report, the term ‘apprenticeships’ includes both apprenticeships (sometimes referred to as traditional trades) and traineeships when each is undertaken as a contract of training.

As this report indicates, the use of the word ‘apprenticeship’ as a component of the term ‘higher apprenticeship’ has confused some stakeholders. Similarly, the use of the term ‘higher’ to include higher education qualifications is not easily comprehended by those same stakeholders.

Given the above, and to reflect that the term ‘higher apprenticeships’ has been applied in the context of the Australian Government’s alternative delivery pilots and the National Partnership Agreement on Skilling Australians Fund, the term ‘higher apprenticeships’, for the purposes of this report, is defined as:

> an integrated program of structured training and paid work, leading to a VET or higher education qualification at the Australian Qualifications Framework level 5 (diploma) or above, which may or may not be undertaken as a contract of training.

Why is there interest in higher apprenticeships?

The Australian Government's fact sheet (Australian Government 2015) on the Apprenticeships training — alternative delivery pilots states that they aim to:

- learn more about opportunities and barriers to increased industry usage, acceptance and validation of alternative apprenticeship training delivery arrangements
- drive more systemic adoption of alternative arrangements, explore challenges and examine potential regulatory or administrative barriers to innovative industry training practices.

These objectives need to be understood in light of the shift towards the attainment of higher-level skills that has been observed in the Australian (and broader global) labour market in recent years and, in parallel, of an expansion of participation in higher education. Technology and work practices are driving demand for people with skills associated with higher-level qualifications, at both the diploma and degree levels.

The Australian Industry Group has recently argued for the need to consider higher apprenticeships, not merely at the diploma and advanced diploma levels, but also in the form of higher education qualifications (Australian Industry Group 2018a). The rationale for this addition included the changing nature of work and the economy, the emergence of Industry 4.0 and the state of the current apprenticeship system.

Implicit in the reference to 'apprenticeships' is the view that the fundamental attributes of an apprenticeship, which focus on structured integration of formal training with employment, are desirable and can lead to better outcomes than the more prevalent pathway of individuals gaining a credential through institutional learning and subsequently seeking employment.

Higher apprenticeships are also gathering momentum in international training systems and labour markets. Significant reforms in the United Kingdom demonstrate the potential of different (alternative) higher apprenticeship models, with graduates being rated as more employable and having high completion and better staff-retention rates, as well as providing a strong return on investment for government.

The potential role for higher apprenticeships

The participants in this research identified several broad roles that different higher apprenticeship models could fulfil:

- to develop technical skills of a higher level than those developed through current apprenticeships
- to add skills other than technical skills, such as management and supervisory, project management, problem-solving and facilitation skills
- to provide a bridge between VET and higher education, either by combining elements of the two sectors into a higher apprenticeship, or by providing a pathway from VET to higher education.

The participants were also able to suggest specific industries where higher apprenticeships could have a role, in particular, industries with high technical skill requirements, especially those occupations which require a combination of mechanical and computer-based skills,

such as in advanced manufacturing. Other potential roles identified included those jobs where practical experience is just as valuable as knowledge-based skills, such as in human services, health and other para-professional occupations.

In some instances, higher apprenticeships were being considered primarily as an alternative recruitment strategy. Developed under the Apprenticeships training — alternative delivery pilot, the PricewaterhouseCoopers (PwC) Higher Apprenticeships and Traineeships Pilot, for example, is designed as an alternative pathway to the traditional graduate program.

Not all of the participants were able to identify what they thought the potential purpose of higher apprenticeships would be. This was particularly difficult for those who were unfamiliar with the concept of higher apprenticeships and those who could not conceptualise the application of higher apprenticeships in their particular industry.

The stakeholder consultations revealed that, for those coming from a VET sector perspective, there was broad agreement that the key elements of higher apprenticeships should retain the same features as traditional apprenticeships, but a higher level of training would be expected.

Interviewees who were more aligned with the higher education sector however tended to focus on the broader notion of integrated training and employment when asked about what they saw as the key elements of higher apprenticeships. Developing skills in a work context was seen as important.

Higher apprenticeships – opportunities and barriers

As the report indicates, assessment of the opportunities and barriers to higher apprenticeships is heavily influenced by what stakeholders conceptualise or prefer as a model for a higher apprenticeship, specifically, whether a contract of training is involved.

For those who conceive of a higher apprenticeship model without a contract of training, there are arguably no administrative or regulatory barriers to establishing an integrated training and employment higher apprenticeship program, other than a lack of awareness of what is possible (opportunity) and uncertainty regarding how to set it up.

For those who prefer the more traditional model, one that involves a contract of training, there are more challenges, especially for higher education programs. The process for establishing an apprenticeship (where one doesn't already exist) and navigating the intersection between state-based apprenticeship regulations and the industrial relations system, where applicable, can be daunting. The two pilot programs funded under the Australian Government's Apprenticeships training — alternative delivery pilots program, as well as other local initiatives being implemented across the country, provide some useful insights into these issues.

Demand for higher apprenticeships

In terms of assessing the demand for higher apprenticeships, it is again necessary to distinguish between demand for higher apprenticeships under a contract of training and demand for alternative training and employment pathways at higher qualification levels.

For higher apprenticeships under a contract of training, it needs to be acknowledged that many VET diploma and advanced diploma apprenticeships already exist in a range of industry areas.

A recent review of the published lists of registered/declared apprenticeships at the diploma and advanced diploma levels in each state and territory revealed that, nationally, 302 qualifications across around 50 training packages are currently available, ranging from 27 qualifications in South Australia, to 231 qualifications in the Northern Territory.

Of the 302 qualifications nationally, 259 qualifications (85%) had no apprenticeship commencements in 2017. Of the 3801 commencements in diploma and advanced diploma apprenticeships in 2017, the Diploma of Leadership and Management and the Diploma of Early Childhood Education and Care collectively accounted for three-quarters of all commencements.

While some caution needs to be exercised in interpreting these data, since the state and territory lists were not validated and not all qualifications are available as apprenticeship pathways in every jurisdiction, the indications are that, despite the wide range and spread of available qualifications, there is very little demand outside these two qualifications.

By contrast, in 2017 there were 378 128 domestic enrolments in VET diploma and advanced diploma qualifications and a further 36 520 enrolments in higher education diploma and advanced diploma qualifications and 6631 enrolments in higher education associate degrees that were not under a contract of training. These data are however unable to reveal how many of these enrolments were ‘sponsored’ by firms as part of an integrated training and employment program.

What this perhaps suggests is that the overall potential level of demand for higher apprenticeships outside a contract of training is significant should firms wish to embrace models of higher apprenticeships, as outlined in this report.

Introduction

Technology and work practices are driving demand for people with skills associated with higher-level qualifications at both the diploma and degree levels.

Historically, the purpose of apprenticeships has been to provide structured high-value training, resulting in transferable skills and knowledge for young people seeking to enter work-based learning. Apprenticeship training was enabled by linking industry with local technical colleges and professional engineering institutions. The apprenticeship offered a clear pathway and competency outcomes that were designed to address the issues facing industry (broadly defined) and specific companies.

The tradition of apprenticeships is long established in many European countries (including England, Scotland, France, Germany and Switzerland) and in Australia and New Zealand, and the concept has been extended more recently to countries in North America and Asia. In the Australian context, an apprenticeship is a law-regulated system of training that combines on-the-job training and work experience gained while in paid employment with formal training (usually off the job). It involves a contract of training or training agreement between the apprentice and the employer that specifies obligations on both parties. Legislation and administration for apprentices and trainees fall constitutionally under state and territory powers. Historically, Australian apprenticeships were in traditional trade occupations and were typically of four years' duration, but possibly shorter (NCVER 2018).

A modification was made to the Australian apprenticeship system in 1985 in response to the Kirby report (Committee of Enquiry into Labour Market Programs 1985), broadening it to include other occupations. Termed 'traineeships', they also combine off-the-job training with an approved training provider and on-the-job training with practical work experience. Similar to apprenticeships, they involve paid employment but generally take one or two years and are typically in non-trade areas. They also require a contract of training and are legislated by the states and territories.

For this project, in terms of the model of training, apprenticeships and traineeships are considered broadly the same, with apprenticeships usually associated with trade occupations and traineeships with non-trade occupations.

The term 'higher apprenticeship' has recently entered the VET lexicon in Australia, partly a result of the Australian Government-funded project, 'Apprenticeship training — alternative delivery pilots', currently underway. This term was also used in the 2018 National Partnership Agreement on Skilling Australians Fund.

Two small-scale pilots of higher apprenticeships are being funded under the Apprenticeship training — alternative delivery pilots program. The first, the Industry 4.0 Higher Apprenticeships Project, is a partnership between the Australian Industry Group, Siemens Ltd and Swinburne University of Technology, leading, upon completion, to the Diploma and Associate Degree in Applied Technologies qualifications.[1] The second is the PricewaterhouseCoopers Higher Apprenticeships and Traineeships Pilot, which will enable participants to complete VET diplomas in fields that include business, information technology (IT) and professional services.[2]

1 <https://www.aigroup.com.au/policy-and-research/industrynewsletter/industry-extras/industry-4.0-higher-apprenticeships-project/>.

2 <https://www.pwc.com.au/careers/student-careers/higher-apprenticeship.html>

The Australian Government's fact sheet (Australian Government 2015) on the Apprenticeships training — alternative delivery pilots states that its aim is to:

- learn more about opportunities and barriers to increased industry usage, acceptance and validation of alternative apprenticeship training delivery arrangements
- drive more systemic adoption of alternative arrangements, explore challenges and examine potential regulatory or administrative barriers to innovative industry training practices.

These objectives need to be seen in light of the shift towards the attainment of higher-level skills that has been observed in the Australian (and broader global) labour market in recent years and, in parallel, the expansion of participation in higher or university-level education. Technology and work practices are driving demand for people with skills associated with higher-level qualifications at both the diploma and degree levels.

Among participants at the recent Apprenticeships Post-2020 Forum, there was a consensus that the apprenticeships system cannot stand still, recognising that it must be made relevant and attractive to changing workplaces and employer and employee expectations. Participants at the forum regarded the apprenticeships model as appropriate for delivering the education and training required for many occupations and noted that many professions use forms of work-based learning and training (PhillipsKPA 2018). Some speculated that if the VET sector fails to take up the opportunity presented by higher apprenticeships, the higher education sector itself might seize the opportunity.

The demand for and broader use of the apprenticeship model at higher (skill or qualification) levels has attracted increasing interest over recent times. In 2012, the Victorian State Government commissioned a scoping report to test the demand for higher apprenticeships. This report found variance amongst and within industries about the need and demand for higher apprenticeships, suggesting that a one-size-fits-all approach is not appropriate (Guthrie & Dowling 2012). This study found, for example, that within the industries consulted, the strongest demand for deeper skills or a degree qualification was found in engineering. Building and construction stakeholders, however, favoured broadening studies, mostly in certificate IV or diploma qualifications in areas such as construction, project management, business studies or sustainability.

More recently, a key message from the 2016 the Future of Australian Apprenticeships Forum, co-hosted by NCVER, was that extending the concept of apprenticeships to higher-level qualifications is a logical progression of the model in order to meet the needs of Industry 4.0 (Couldrey & Loveder 2017). Additionally, in response to the new Skilling Australians Fund, Fowler and Stanwick (2017) describe the potential opportunities of this fund in supporting higher-level apprenticeships.

Some peak industry stakeholders are calling for higher apprenticeships. The Australian Industry Group, for example, has suggested that the higher apprenticeship model be introduced into a wider range of industries and occupations, including para-professional occupations (Australian Industry Group 2016). Similarly, in a joint report, the Australian Chamber of Commerce and Industry, the Australian Industry Group and the Business Council of Australia highlighted that 'apprenticeships are also a model that can be expanded beyond the traditional trade base to include higher-level qualifications, new occupations and emerging areas of the economy' (2017, p.7). The Australian Industry Group has recently argued for the need to consider higher apprenticeships, not merely at the diploma and

advanced diploma level, but also to incorporate higher education qualifications (Australian Industry Group 2018a). The rationale included the changing nature of work and the economy, the emergence of Industry 4.0, the state of the current apprenticeship system, and the implementation of higher-level apprenticeships internationally.

Higher apprenticeships are also gathering momentum in other international training systems and labour markets. Significant reforms in the United Kingdom demonstrate the potential of different higher apprenticeship models, including at degree levels, with graduates being rated as more employable, reports of high completion rates and better staff retention, and strong return on investment for government. (See the support document, available at <https://www.ncver.edu.au/research-and-statistics/publications>). Closer to Australia, New Zealand has recently announced a pilot of a degree apprenticeship model in engineering, based on the United Kingdom model (Tertiary Education Commission, New Zealand 2018).

Research project

This research contributes to an understanding of the potential application of higher apprenticeship models in Australia and the possible barriers and solutions. The research explored the current landscape of 'higher apprenticeships' in Australia and gathered the perspectives of industry representatives on the higher apprenticeship concept, as well as the views of a broader group of stakeholders in the VET and higher education systems. A review of the higher apprenticeship models that have been implemented in other countries was also undertaken.

Research questions

The project explored the following research questions:

- What is the status of higher-skill-level training (in particular apprenticeships/ traineeships) in Australia?
- What international models exist regarding higher apprenticeships?
- What can be learnt from these comparisons for the Australian context?
- What do Australian stakeholders regard as the key features of any higher apprenticeship models and the potential opportunities and barriers?

Methodology

Both qualitative and quantitative methodological approaches were used to investigate the various components of this project, including a desktop review of the international literature, local forums, semi-structured interviews with stakeholders and an analysis of data from the National Apprentice and Trainee Collection. Details of these various approaches are provided below.

Evidence of higher apprenticeships in Australia

Data from the National Apprentice and Trainee Collection were used to investigate the higher VET-level qualifications utilised for apprenticeships or traineeships in Australia. This analysis is focused on diplomas and advanced diplomas delivered as part of a contract of training.

International approaches

An analysis of published literature and relevant websites was conducted to build a picture of international approaches to higher apprenticeships. Examples from the United Kingdom, Germany and New Zealand are presented in the next chapter. Further detail is also provided in the accompanying support document.

Gathering views of Australian stakeholders

The views of Australian stakeholders on the potential demand for higher apprenticeships and the potential benefits and challenges, as well as the possible solutions, were gathered using the two methods described below.

Industry forum

A forum of industry reference committee chairs and service skills organisations who had expressed a willingness to the Australian Government Department of Education and Training to be involved in work on apprenticeships was held in Melbourne in August 2017. Thirteen industry reference committees were represented from the current total of 66.[3] Nine representatives from the five skills service organisations that provide support to these industry reference committees were also in attendance.

Industry reference committees are the formal channel for considering the skills requirements of individual industries in the development and review of training packages. They advise on training package content, with the aim of ensuring that the National Training System provides qualifications whereby graduates have the knowledge, competencies and contemporary skills that employers need. The industry forum drew on the reference committees' expertise and knowledge of industry to seek their views on higher apprenticeships. Over the course of the session the participants were invited to discuss topics under four broad headings:

- industry demand for higher apprenticeships
- recruitment of higher apprentices
- quality delivery and outcomes
- system support and interactions.

3 <https://www.aisc.net.au/content/industry-reference-committees>.

Semi-structured interviews

A total of 33 semi-structured interviews were then conducted with a variety of stakeholders. The first stage, completed in late 2017, involved interviews with 17 representatives from industry peak bodies and apprenticeship support groups. The industries represented by these interviewees included:

- automotive
- building and construction
- plumbing
- electrical
- retail
- manufacturing
- mining
- tourism and hospitality.

This was broadened to other stakeholder groups in the second phase of interviews, conducted in early 2018. This phase included 16 interviewees from government (four jurisdictions), the VET sector, the higher education sector, unions and apprenticeship support providers, along with some broad industry and business peak bodies.

The group of stakeholders consulted was broad but not fully representative of all industry sectors, as some invitees declined to participate. While invitations to participate were sent to a broad cross-section of industry, self-selection resulted in more interviewees representing the trades. Participants generally emphasised that their views were theirs alone and not necessarily representative of their industry or organisation.

Interviewees were invited to comment on their understanding of:

- the nature of higher apprenticeships, including their key elements and what these should/could be
- the role of and demand for higher apprenticeships, currently and potentially
- the potential structures of higher apprenticeships
- challenges in the broader use of higher apprenticeships and how these might be overcome.

There is no readily agreed definition of higher apprenticeships, with views ranging from a 'traditional' to a more 'progressive' view.

Defining higher apprenticeships

In the Skilling Australians Fund National Partnership Agreement of 2018, a policy definition of higher apprenticeships for the purposes of the agreement is:

> Higher apprenticeships combine a program of structured on-the-job training with formal study, with the study component leading to the award of a VET qualification at the Australian Qualification Framework level 5 (diploma) or level 6 (advanced diploma)
>
> (Australian Government 2018a, p.12)

This definition identifies 'higher apprenticeships' as based on the Australian Qualifications Framework (AQF) and as confined to the VET framework. Since this is a national partnership agreement for skills, the focus is on VET. Hence, it does not consider higher apprenticeships that involve a higher education qualification (of the same AQF 5 and 6 sub-bachelor levels, or higher AQF 7 bachelor level).

Given the above, and to reflect that the term 'higher apprenticeships' has been adopted in the context of the Australian Government's alternative delivery pilots, for the purpose of this report, the term 'higher apprenticeship' is defined as:

> an integrated program of structured training and paid work, leading to a VET or higher education qualification at the Australian Qualifications Framework level 5 (diploma) or above, which may or may not be undertaken as a contract of training.

The discussions at the forum of industry reference committee chairs and interviews with stakeholders revealed however that there is no readily agreed definition of a higher apprenticeship. The lack of consensus and varied individual viewpoints strongly influenced how forum participants and interviewees responded to questions on the potential future role of higher apprenticeships, perceived industry demand, possible policy, operational structures and barriers to implementation.

The varying opinions on higher apprenticeships ranged from what might be described as a more traditional perspective (that is, very much based on a traditional trade apprenticeship) to a more progressive view (that is, expanding the apprenticeship model to new areas, such as new occupational/industry areas, other education sector areas and/or different qualification levels).

Some participants indicated they did not have a clear understanding of how higher apprenticeships could be conceptualised in their industries; some had not considered the concept at all, while others had an issue with the term 'higher apprenticeship'. One participant, from the plumbing industry, explained that 'apprenticeships are traditionally trade occupations. The term, higher apprenticeship, does not resonate'. This person indicated that 'the idea of a pathway is good, keeping people engaged in education and training is good. It just needs another term'.

Another interviewee reported that the term 'higher apprenticeship' is being used interchangeably in the sector to mean different things. This participant, from an industry peak body, reported that people are using it to refer to the United Kingdom apprenticeship reforms, the Industry 4.0 higher apprenticeship project, and the idea of bringing the apprenticeship model into the higher education sector.

While there was mixed awareness about the status and provision of higher apprenticeships (however they individually defined such terms) in Australia, responses tended to broadly fall into four categories:

- no knowledge of currently offered higher apprenticeships
- awareness of the current Australian Government-funded higher apprenticeship pilots
- familiarity with higher-level qualifications (for example, diplomas) delivered through an apprenticeship model
- examples of various models that are delivered as apprenticeships, or apprenticeship-like arrangements (described later).

Defining 'higher': qualification versus skill

The participants representing trade industries tended to consider a higher apprenticeship as an apprenticeship done at a qualification level higher than the 'standard' level for their industry. So, for those from the mining, automotive and energy sectors, for example, a higher apprenticeship tended to be deemed an apprenticeship that was higher than certificate III. These participants were considering higher apprenticeships in relative terms, that is, relative to the most common qualification level for apprenticeships in their industry.

Other interviewees, particularly those from organisations that spanned multiple industries, such as apprenticeship support organisations, suggested that higher apprenticeships are apprenticeships at the diploma level or above, including the possibility of an apprenticeship at the bachelor level. In contrast to those representing the trade industries, these participants were thinking about the qualification level for higher apprenticeships in more absolute terms (rather than relative to a standard qualification level). This may be because they are not aligned with any one industry.

One interviewee suggested that defining higher apprenticeships by level of qualification was problematic:

> 'Higher apprenticeship' is an awkward term. It [an apprenticeship] is an employment-based learning contract where the outcome can be anything. It has already existed at varying [qualification] levels. Apprenticeships have never been differentiated at the level of the qualification. (Union representative)

This interviewee further explained:

> There's always been the capacity to do apprenticeships at any level. The question is, what are we funding? Do we fund higher-level apprenticeships?

An alternative to higher apprenticeships as apprenticeships at a *higher qualification level* was proposed by some interviewees. For example, representatives from the automotive and construction industries suggested a higher apprenticeship could be an apprenticeship at a *higher skill level*. This might involve additional skills sets or other higher-level training, done on top of a 'standard' apprenticeship.

These responses illustrate the differences of view, as well as some level of confusion, about what the descriptor 'higher' means in 'higher apprenticeships'.

Defining ‘apprenticeship’

The other dimension being directly or indirectly contested relates to the meaning of ‘apprenticeship and traineeship’. The traditional view is that it is an arrangement characterised by a contract of training between apprentice/trainee and employer (an employment-based training contract to qualify for a defined occupation), as approved by the training authorities in each jurisdiction according to their relevant legislation. In conjunction with industry advice, jurisdictions determine the specific trades or declared occupations that can be the subject of such contracts, with the expectation that training (typically at certificate III) specific to those trades or declared occupations will be undertaken. These arrangements then: may attract specified industrial conditions, including award salary rates at year levels; may link with trade licensing; set legally binding mutual obligations between employer and employee, including supervision; set expected durations; and normally require ‘dual’ sign-off — of completions from both the employer and the ‘off-the-job’ training qualification by a registered training organisation (RTO). Off-the-job training is typically subsidised at the VET level by a state or territory, while employers, in turn, may receive an incentive under the Australian Apprentices Incentives Programme or through their state/territory government department.

The more progressive view, expressed by some, questions whether all such ‘traditional’ features need to be replicated in either an ‘apprenticeship’ or ‘higher apprenticeship’ arrangement, especially if ‘higher’ encompasses non-VET higher education.

In the background of the Australian system, into which higher apprenticeships would need to fit, there is a gradient of differing educational/training, funding/financing and regulatory arrangements as the AQF level rises above certificate III. For example, a ‘higher apprentice’ training for a diploma and above (AQF VET levels 5 and 6), may (in full or part) be funded by state/territory subsidy and/or financed by loan, under the VET Student Loans program. If the latter, arrangements would need to meet all relevant funding rules, including a 20% loan fee, if applicable.

The next level up in complexity is a higher apprentice who undertakes a program at a sub-bachelor level (AQF higher education levels 5 and 6), which if publicly supported could be a ‘designated’ Commonwealth-supported place at a university, with potentially some additional HELP financing (under different rules from VET Student Loans). A further complication arises where an apprentice migrates from a VET award to a higher education award or perhaps seeks a dual award. Under such scenarios, the apprentice is undertaking combined or linked training and educational programs with institutions obliged to meet competency and/or examination sign-offs pertinent to two regulators, each operating under different provider standards and legislation. The duration of the apprenticeship, award rates, arrangements for supervision, time on and off the job need to be packaged as well. If a ‘higher’ apprentice is to be higher education alone, at sub-bachelor or bachelor level, then university study blocks also need to be flexibly agreed and in sync with the on-job needs of employers.

Such progressive views are seen by some, particularly those participants whose industries rely on traditional certificate III-level apprenticeships, as ill-conceived and inappropriate. These participants see only the strengths and virtues of the long-standing characteristics of (certificate III-level) apprenticeships. Their objections extend to concerns about dilution of the ‘brand’ reputation of apprenticeships and the risk of confused messaging to students and parents.

Given such complexities in navigating VET and higher education boundaries, Australian arrangements are implemented at institutional levels and tailored to specialist occupations and related education/training, such as in the present pilot examples.

In summary, the definitions of 'higher' and 'apprentice' occupy nuanced positions — between the fixed traditions and potential evolution pertaining to both words, separate and joint.

Positive and negative perceptions of the term 'apprenticeship'

Some interviewees discussed both the positive and negative perceptions of apprenticeships as a training pathway and how these influence interest in both 'traditional' and higher apprenticeships.

Interviewees tended to fall into two camps when considering the term 'higher apprenticeship' in the context of the current reputation of apprenticeships. Some suggested that there are negative connotations surrounding current apprenticeships and that these would diminish the attractiveness of higher apprenticeships, particularly amongst the potential target group. One interviewee explained:

> There is already a push-back from parents — a bias against apprenticeships. Recruitment is a struggle. Apprenticeships are not viewed as a good pathway compared to university. If the aim is to attract intelligent students who might otherwise overlook an apprenticeship, calling it an apprenticeship will undermine that effort. It would take a generation to change the negative connotations of apprenticeships. It needs to be pitched with a fancy and attractive name. (Plumbing)

Within this group some suggested that, if marketed well and uptake is good, higher apprenticeships might lift perceptions about apprenticeships more generally. An example comes from the tourism industry:

> The term 'apprenticeship' is not well perceived. Apprenticeships are associated with being low paid, anti-social hours, poor work—life balance — all negative perceptions. Higher apprenticeships could be an opportunity to reposition some of these roles and make them more prestigious. (Tourism)

An alternative view was that current apprenticeships are highly valued and that the addition of higher apprenticeships will confuse the market:

> There is a global understanding of what apprenticeships are. Creating higher-level apprenticeships will confuse the market and make it harder to attract students. Higher apprenticeships send the message that apprenticeships can be all sorts of things.
>
> (Automotive)

This interviewee was concerned that higher apprenticeships, perceived by them as an apprenticeship above certificate III, will confuse the branding of apprenticeships. The idea of higher-level training was not an issue for this interviewee but they also made the point that the structures and pathways for that are already in place.

Other 'non-apprenticeship' names were proposed by some participants, including 'internship' and 'cadetship', which have also been used in the higher education sector. Since these terms have been used in various ways, consideration of how they might be used in this higher apprenticeship context may be worthwhile. For those participants who saw

higher apprenticeships as potentially sitting at the degree level, the term ‘higher education apprenticeship’ was suggested as a way of distinguishing degree-based apprenticeships from apprenticeships traditionally undertaken in the VET system. This is similar to the use of the term ‘degree apprenticeships’ in the United Kingdom.

International approaches

In the United Kingdom, 'higher' and 'degree' apprenticeships have been successful in accountancy, engineering, IT, banking and finance, and public sector programs.

A review of the international literature and relevant websites was conducted to investigate how higher apprenticeships have been approached and implemented in other countries. Information from the United Kingdom, Germany (and other European countries) and New Zealand is summarised briefly here, as the first two of these countries have well-documented higher apprenticeship programs, and New Zealand is of interest, given its proximity and cultural and economic similarity to Australia. The full review, which also examines higher apprenticeships in other countries, is available in the support document for this report. The countries summarised here demonstrate that a variety of models exist internationally for what might be termed a 'higher apprenticeship'.

United Kingdom

In the United Kingdom, higher apprenticeships include *higher apprenticeships* and *degree apprenticeships*.

Introduced in 2009, higher apprenticeships were designed to expand progression routes into higher education levels or as an alternative to an academic degree, and to enable employers to develop their workforce. They are vocational qualifications.

Degree apprenticeships were launched in 2015 and were driven by the necessity to address employer-identified skill shortages (particularly in management, digital skills and engineering) and a recognised need to develop new forms of degree courses that reflect employer-focused higher education. Including work-based training, paid tuition, a competitive wage and available in a wide range of areas, these provide the opportunity for university students to gain a bachelor degree or higher qualification.

Higher apprenticeships and degree apprenticeships have been established in accountancy, engineering, information technology, banking and finance, and public sector programs.

All apprenticeships in the United Kingdom require an apprenticeship agreement and a commitment statement. The apprenticeship agreement details the individual employment arrangements between the apprentice and the employer and includes a statement of the skill, trade or occupation for which the apprentice is being trained. The commitment statement is a tripartite agreement between the apprentice, employer and education provider and outlines the mutual responsibilities of the three parties.

The development of degree apprenticeships was a collaborative process involving employers from different industrial sectors and universities, who worked to develop new standards, programs, processes and requirements. It is probably too early to assess the effectiveness of degree apprenticeships, although variability in quality appears to be an issue across all levels of apprenticeships in the United Kingdom (Hordern 2015; Lanning 2016).

The development and implementation of higher-level apprenticeships in the United Kingdom is potentially informative to Australia, should similar models be pursued here. The literature details the learnings that can be taken from the United Kingdom experience and provides recommendations for continued development for the various stakeholders, including policy-makers, training providers and employers. These are detailed in the support document to this report and include, but are not limited to, the following areas:

Apprenticeships in Germany's dual training system are a widely used and well-respected pathway into employment for young people.

- continuation of policy support and guidance on policy to stakeholders
- promotion of VET and the aspiration of parity of esteem and opportunity
- continued engagement with universities regarding opportunities, and enabling engagement and partnerships between universities and industry
- a proactive role for training providers, particularly in their engagement with employers about their requirements and how apprenticeships could work for them
- a role for employers in developing new standards and providing information on sector-specific issues.

Germany

The German VET system, also known as the 'dual training system', is firmly established in the education system and is highly regarded worldwide (Federal Ministry of Education and Research, Germany 2018). Apprenticeships in Germany's dual training system are a widely used and well-respected pathway into employment for young people. Trainees in the dual system typically spend part of each week at a vocational school and the remainder at a company, or they may spend longer periods at each place before alternating. The cooperation between these companies and the vocational schools is one of the main characteristics of the German dual system and is regulated by law. Dual training usually lasts between two and three-and-a-half years.

Traditionally, there has been a strong separation between VET and higher education in Germany (Baethge 2006, cited in Graf 2017). In recent times, however, there has been a gradual change through the development of 'dual study programs' (Graf 2017).

Dual study programs sit at the interface of VET and higher education and are offered in areas that are well aligned with the world of work and associated with high-skilled jobs such as economics, engineering, computer sciences and health care. They are formally located at the post-secondary level but are not part of the higher vocational training system where master craftsman and technician training sits. Instead, they are located within the university system (Graf 2017). While they are not called higher apprenticeships, they are apprenticeship-like, in that they are employment-based and utilise a combination of on-the-job and off-the-job training. A dual study program involves a contract between the employer and student.

There are several types of dual study programs (see table 1), the original being the *Ausbilungsintegrierende* (apprenticeship-integrating) program, which typically leads to both a VET qualification and a bachelor's degree. The other types lead to a bachelor's degree only.

The dual study programs are of interest to people with higher education entrance qualifications who, despite their academically focused secondary education, seek hands-on, salaried, academic training with a good chance of being employed in the training company afterwards (Graf 2017).

Table 1 Dual study programs in Germany

Type of dual study program	Qualifications gained	Purpose
Ausbilungsintegrierende (apprenticeship-integrating)	VET qualification and bachelor's degree	Designed as an initial VET program for prospective students with a higher education entrance qualification. In some cases, also involves a vocational school.
Praxisintegrierende (practice-integrating)	Bachelor degree	Designed as an initial VET program for prospective students with a higher education entrance qualification.
Berufsintegrierende (job-integrating)	Bachelor degree	Mainly conceived as professional development for people already in the workforce.
Berufsbegleitende (job-accompanying)	Bachelor degree	Mainly conceived as professional development for people already in the workforce.

Source: Graf (2017).

The form of the dual study program is typically negotiated between the higher education organisation and the associated companies (employers). Hence, there is a much lower level of standardisation in these programs by comparison with traditional apprenticeships. Only the *Ausbilungsintegrierende* program has more universal in-company and external standards, as this is associated with the VET qualification obtained through the program. In terms of funding, while the practical component of dual study programs is financed by the training companies (the employers), the mix of private and public funding for the theory component varies from case to case (Graf 2017).

By embedding dual study programs in the constantly evolving labour market, apprentices receive a high standard of relevant training and occupation-specific skills, from which employers can choose, reducing a company's level of risk and saving money during the recruitment process (Graf 2017; Solga et al. 2014).

Dual systems of training are not directly comparable with other concepts of stage- or level-based vocational education. However, some general learnings from Germany (also applicable to other European countries) include:

- Different countries have VET programs with different characteristics, all called 'apprenticeships'. A broad definition of 'apprenticeship-type' schemes (those which formally combine and alternate company-based training with school-based education, leading to nationally recognised initial VET certification degrees), is necessary.
- Contracts need regulation by law and apprenticeship rules or collective agreements that specify duration, balance between training and work-based activities, working conditions, remuneration etc.
- Standards should include content and curricula, terms of training, duration of work placements, required resources, assessment outcomes and qualifications of trainers.

Other European countries

Emerging examples of higher apprenticeship-like developments are to be found in several other European countries, including in the Netherlands, where a two-year associate degree enables transition for vocational specialists, workers, job seekers and VET students into higher education as an alternative to direct entry to a traditional degree.

In Italy, there have been some moves to develop higher apprenticeships and industrial doctorates (similar to an internship program), whereby both programs span upper-secondary VET and post-secondary higher education with the addition of individual company-level training plans.

Denmark has many options for furthering VET at the tertiary level, with mandatory three-month apprenticeships integrated into all courses, which are also used for professional development amongst skilled workers (European Commission Directorate General for Employment Social Affairs and Inclusion 2012).

New Zealand

New Zealand is currently piloting a degree apprenticeship model that will lead to an engineering degree apprenticeship qualification. During 2014—15, to increase the number of engineers, the New Zealand Tertiary Education Commission began researching the viability of apprenticeship models to educate degree-level engineering technologists. The success of such models was seen to be directly related to the process of curriculum development, requiring a three-way relationship between employers, policy-makers and tertiary institutions (Tertiary Education Commission, New Zealand 2018). Lessons learned in the development of the United Kingdom degree apprenticeship models were used as a guide, with a focus on the government's employer-led approach.

The first phase of the New Zealand pilot involved the development of a degree standard by employers. Phase two will involve the expansion of this standard into a curriculum, complete with program design and end-point assessments, after which the model will be ready for implementation.

Although the pilot program has not yet been completed, recommendations from the research undertaken in New Zealand (Goodyer, Poskitt & Mackay 2017, p.11—12) include:

- Build in sufficient time to allow employers to balance various commitments with the requirements of the project and allow employers freedom to explore concepts and issues of immediate concern to them.
- Create multiple pathways, from school leavers to those with employment experience who wish to reskill or upskill.
- Develop a marketing plan to begin recruiting students for program start.
- Confirm numbers of apprentices for the first intake and decide where they will be located. This may have a bearing on which institutes will be involved in developing a program of study.

Uptake of diploma and advanced diploma apprenticeships

Data show that diploma-level qualifications delivered as part of a contract of training are numerous.

In terms of assessing the demand for higher apprenticeships, it is necessary to distinguish between demand for higher apprenticeships under a contract of training and demand for alternative training and employment pathways at higher qualification levels.

For higher apprenticeships under a contract of training, it needs to be acknowledged that many VET diploma and advanced diploma apprenticeships have already been established in a range of industry areas. This is determined by states/territories, based on industry advice and analysis of the labour market, who update their classifications accordingly. Each state training authority publishes an updated list semi-regularly. Some states appear to undertake a review every month or so and update a range of qualifications immediately, while other states do this less often.

To determine the uptake of these apprenticeships, the published lists of registered apprenticeships and traineeships at the diploma and advanced diploma level in each state and territory were obtained (in November 2018) and the number of apprenticeship/ traineeship commencements (in 2017) for each of the qualifications were extracted from the National Apprenticeship and Traineeship Collection (appendix A, table A1).

There are some limitations to this analysis, which must be noted:

- The list of apprenticeships is a point-in-time record, while the commencement data available came from the preceding year. This means that any changes to commencements due to recent additions to, or subtractions from, the list of registered/declared apprenticeships will not be reflected in the data. This may explain the presence of commencements in jurisdictions where the qualification is seemingly not registered and may also mean the uptake of recently registered qualifications is underrepresented.
- The lists were not validated with the states and territories to ensure accuracy at that point in time.

Despite these limitations, the data reveal there are currently 302 diploma and advanced diploma qualifications available across around 50 training packages. Of these, 259 qualifications (85%) had no apprenticeship commencements in 2017.

There were 3801 commencements in registered diploma and advanced diploma apprenticeships in 2017, with two qualifications, the Diploma of Leadership and Management (859) and the Diploma of Early Childhood Education and Care (2009), collectively accounting for three-quarters of all commencements. While some caution needs to be exercised in interpreting these data, they indicate that, despite the wide range and spread of available qualifications, there is very little demand outside these two qualifications.

By comparison, table A2 in appendix A shows, for those same qualifications, the number of program enrolments in 2017 that were not under an apprenticeship or traineeship arrangement. In stark contrast with the above, there were 359 427 program enrolments, demonstrating that the vast majority of these diploma and advanced diploma qualifications are not conducted as apprenticeships or traineeships.

Furthermore, considering all qualifications (not just those approved as apprenticeships/traineeships by the states and territories), in 2017 there were 378 128 domestic enrolments in VET diploma and advanced diploma qualifications (National VET Provider Collection 2017, unpublished), a further 36 520 enrolments in higher education diploma and advanced diploma qualifications, and 6631 enrolments in higher education associate degrees that were not under a contract of training (Australian Government 2018b). These data however cannot show how many of these enrolments were 'sponsored' by firms as part of an integrated training and employment program. These findings suggest that the vast majority of qualifications at the diploma and above levels are conducted outside apprenticeship arrangements.

The history of VET-level diplomas and advanced diplomas (AQF levels 5 and 6) undertaken as part of a contract of training is examined further here by an additional analysis of NCVER's National Apprentice and Trainee Collection. Data on contracts of training at the diploma and advanced diploma level have been extracted from January 2000 to December 2017. Note that there were some infrequent instances of training at these levels extending back to July 1994. Data on commencements, completions and cancellations/withdrawals associated with program enrolments in VET (AQF level 5) diplomas and (AQF level 6) advanced diplomas from 2000 to 2017 are shown in table 2.

These data indicate that there was a total of 121 781 diploma-level qualification commencements and 66 954 qualification completions delivered under a contract of training from January 2000 to December 2017. Advanced diplomas are less common over the same period, with 2241 commencements and 1054 completions (also shown in table 2).

Table 2 The number of diplomas and advanced diplomas delivered through a contract of training, 2000–17

	Diploma			Advanced diploma		
Calendar year	Commence	Complete	Cancellation/ withdrawal	Commence	Complete	Cancellation/ withdrawal
2000	327	36	51	43	18	12
2001	249	66	85	18	13	6
2002	566	153	193	33	30	9
2003	790	287	297	43	13	35
2004	731	435	281	17	10	19
2005	856	387	327	56	6	22
2006	1 063	508	402	56	5	28
2007	2 453	553	677	105	20	59
2008	3 658	1 028	1 212	106	27	51
2009	4 109	1 444	1 461	132	41	84
2010	15 590	2 685	2 818	326	35	89
2011	29 368	6 597	6 187	500	180	131
2012	35 756	14 931	10 605	488	242	193
2013	6 279	22 357	7 934	131	215	159
2014	7 073	6 246	4 751	94	101	57
2015	4 442	3 220	3 044	33	49	40
2016	4 686	3 256	2 565	32	28	18
2017	3 785	2 765	2 514	28	21	9
Total	**121 781**	**66 954**	**45 404**	**2 241**	**1 054**	**1 021**

Note: The sum of completions and cancellation/withdrawals does not equal commencements as these events often occur in different years.

Source: National Apprentice and Trainee Collection, December 2017 estimates, unpublished.

Using data from the National VET Provider Collection, we can determine the proportion of all diplomas and advanced diplomas that are conducted as apprenticeships or traineeships (table 3). Note that direct comparisons with the National Apprentice and Trainee Collection are difficult.

Table 3 Diplomas and advanced diplomas by apprentice/trainee status, 2003–17

	Diploma			Advanced diploma		
Calendar year	Apprentices and trainees	Not an apprentice or trainee	Total	Apprentices and trainees	Not an apprentice or trainee	Total
2003	2 124	128 885	131 009	283	41 743	42 026
2004	1 440	121 432	122 872	125	36 633	36 758
2005	1 504	119 439	120 943	92	34 052	34 144
2006	1 571	116 747	118 318	82	32 479	32 561
2007	2 218	116 501	118 719	118	29 315	29 433
2008	3 203	115 969	119 172	147	29 047	29 194
2009	4 132	129 716	133 848	183	32 177	32 360
2010	7 245	155 232	162 477	306	32 940	33 246
2011	13 824	172 196	186 020	516	33 331	33 847
2012	19 837	164 506	184 343	559	32 858	33 417
2013	14 136	140 123	154 259	402	25 378	25 780
2014	10 930	135 053	145 983	213	20 939	21 152
2015	8 541	117 127	125 668	142	16 253	16 395
2016	9 135	131 247	140 382	73	14 478	14 551
2017	9 339	121 278	130 617	54	12 469	12 523

Source: National VET Provider Collection, unpublished.

Using the variables contained in the National VET Provider Collection to identify VET program enrolments that were part of an apprenticeship/traineeship shows that these accounted for between 1.2% to 10.8% of all diploma-level program enrolments in each year over the period 2003 to 2017. Advanced diplomas as part of an apprenticeship/traineeship accounted for between 0.3% to 1.7% of all advanced diploma enrolments in each year over the period 2003 to 2017. This further confirms the analysis above that diplomas and advanced diplomas conducted through an apprenticeship or traineeship arrangement are only a small percentage of all the VET diplomas and advanced diplomas undertaken.

Examining trends in diplomas and advanced diplomas conducted as apprenticeships/ traineeships under a contract of training (figures 1 and 2, respectively) from the National Apprentice and Trainee Collection, we see broadly similar patterns of peaking commencements around 2011 and 2012, followed by a slightly delayed peak of completions and cancellations/withdrawals. The underlying reasons for the increases and decreases seen in figures 1 and 2 may be explained, at least in part, as follows. From 2009, Australia's VET system underwent significant reforms. A key target of the new National Agreement for Skills and Workforce Development (NASWD), which came into effect on 1 January 2009, was to double the number of higher-level qualification completions (diploma and advanced diploma) nationally between 2009 and 2020. Other policy initiatives likely to have driven the increase in commencements in apprenticeships and traineeships at diploma and advanced diploma levels were:

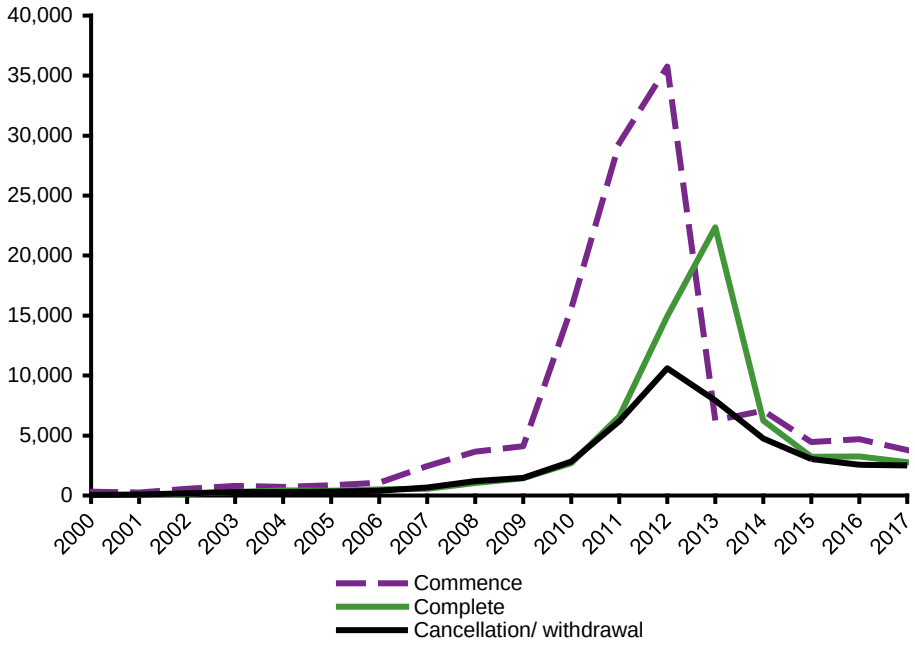
- National Partnership Agreement on Productivity Places Program (2009—12)
- National Partnership Agreements on TAFE Fee Waivers for Child Care Qualifications (2009, 2009—14)
- Jobs and Training Compact (2009—11)
- Introduction of VET FEE-HELP (2009).[4]

Notably, of the 36 244 commencements of diplomas and advanced diplomas in 2012, 28 927 were for existing worker apprenticeships. In response to concerns about the increase of existing worker apprenticeships and traineeships (Noonan & Pilcher 2017), the Commonwealth Government made changes to the commencement incentive payments:

- From 1 July 2012, commencement incentives for existing worker apprenticeships and traineeships not on the National Skills Needs List were removed.
- From 23 October 2012, commencement and completion incentives for diploma and advanced diploma qualifications not leading to aged care, child care or enrolled nursing were removed.

Clearly, demand for VET higher apprenticeships under a contract of training is acutely sensitive to the availability of financial incentives for employers.

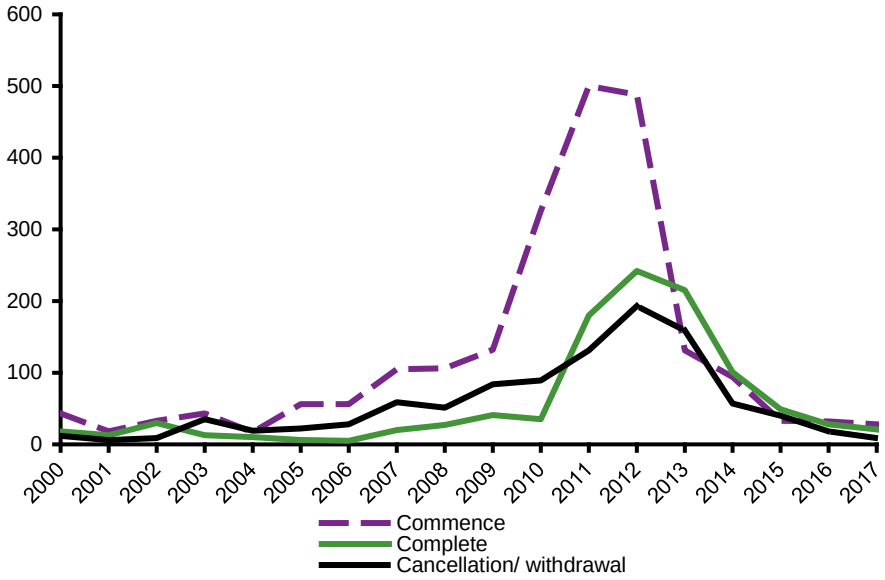
Figure 1 Diplomas delivered through a contract of training, 2000–17



Source: National Apprentice and Trainee Collection, December 2017 estimates, unpublished.

4 For more information on policy changes affecting apprenticeships and traineeships in Australia, see NCVER's *Historical time series of apprenticeships and traineeships in Australia from 1963 to 2017* <https://www.ncver.edu.au/research-and-statistics/data/all-data/historical-time-series-tables>. Also available is the *Timeline of Australian VET policy initiatives 1998—2017* <http://www.voced.edu.au/vet-knowledge-bank-timeline-australian-vet-policy-initiatives-1998-2017>.

Figure 2 Advanced diplomas delivered through a contract of training, 2000–17



Source: National Apprentice and Trainee Collection, December 2017 estimates, unpublished.

Diplomas and advanced diplomas delivered under a contract of training in the trades are a relatively small proportion of all diplomas and advanced diplomas delivered under a contract of training.

To gain a sense of which industries are supporting training at this level, the Australian and New Zealand Standard Industrial Classification (ANZSIC) codes of employers were examined. The top industry group for both diplomas and advanced diplomas delivered under a contract of training was health care and social assistance, making up 38.4% of diplomas and 43.5% of advanced diplomas (table 4).

Table 4 ANZSIC codes of employers associated with diploma and advanced diploma commencements, delivered through a contract of training, 2000–17

ANZSIC codes	Diploma		Advanced diploma	
	N	%	N	%
Health care and social assistance	467 94	38.4	975	43.5
Administrative and support services	546	7.0	83	3.7
Accommodation	8 322	6.8	44	2.0
Manufacturing	7 526	6.2	118	5.3
Retail trade	6 759	5.6	28	1.2
Public administration and safety	5 945	4.9	72	3.2
Education and training	5 364	4.4	126	5.6
Construction	4 763	3.9	60	2.7
Transport, postal and warehousing	4 328	3.6	34	1.5
Professional, scientific and technical services	4 306	3.5	295	13.2
Other services	3 935	3.2	31	1.4
Financial and insurance services	3 261	2.7	16	0.7
Wholesale trade	2 162	1.8	9	0.4
Information media and telecommunication	2 040	1.7	24	1.1
Arts and recreation services	1 668	1.4	14	0.6
Mining	1 630	1.3	60	2.7
Electricity, gas, water and waste services	1 621	1.3	171	7.6
Rental, hiring and real estate services	1 460	1.2	4	0.2
Agriculture, forestry and fishing	584	0.5	11	0.5
Not known	765	0.6	66	2.9
Total	**121 780**	**100**	**2 241**	**100**

Source: National Apprentice and Trainee Collection, December 2017 estimates, unpublished.

A range of 'higher apprenticeship' initiatives currently underway or being developed were described by research participants.

Industry approaches to higher apprenticeships and skilling

The views of industry and key stakeholders on existing mechanisms for developing higher-level skills were captured through a forum of industry reference committee chairs and service skills organisations, along with semi-structured interviews with a number of key stakeholders.

Some interviewees could point to specific industries or occupations where apprenticeships at the diploma and advanced diploma level are already available, for example, diploma-level apprenticeships in aeroskills and the Diploma of Dental Technology. However, others, such as one interviewee from the automotive industry, reported that higher-level qualifications (for example, certificate IV and diploma) have been available in their industry for a few years, but that, in their experience, uptake is low. This observation supports the evidence presented in the previous section. This interviewee questioned the benefit of doing these qualifications:

> What is the relevance of these higher-level quals for employees? What is the benefit of them doing it? They are already working in their jobs, getting any additional relevant training they need (via the manufacturers of the equipment … the training is more appropriate/relevant to what they're working on). Why go do the less relevant (or less specific) higher-level quals?

Examples of higher-level skill development conducted after apprenticeship completion were provided. For example, many trades have a two-stage process, one that involves completing an apprenticeship with the option of then moving onto higher-level training for licensing or registration purposes. An interviewee from the plumbing industry explained that in this trade the pathway involves a certificate III apprenticeship, followed by certificate IV-level training, often involving skills sets only, undertaken in a person's own time, to obtain a licence. A similar scenario was described in the construction industry, where the current pathway is from a certificate III trade qualification to builders' registration, which requires certificate IV or diploma-level training.

Examples of advanced post-apprenticeship in-house training were also given for the mining industry. This training, which was described as 'not accredited but is certified to a standard that is over and above Australian standards', comprises both on- and off-the-job components, some of which are delivered by registered training organisations (RTOs). This training pathway is offered to those who excel in their apprenticeship, and so is not planned from the outset of an apprenticeship.

These examples were not considered higher apprenticeships by those who described them and do not fit the definition provided earlier in this report. However, they demonstrate the various ways in which people gain higher-level skills in their industries.

Other examples of initiatives currently underway, or under development, were also provided (see box 1 for brief descriptions). These include models actually described by interviewees as 'higher apprenticeships' and they demonstrate the diversity in what stakeholders consider alternative models of higher apprenticeships could look like.

Box 1 Current 'higher apprenticeship' models

Apprenticeships training – alternative delivery pilots

Two Australian Government-funded higher apprenticeship pilots are in progress. In addition to these, other examples of higher apprenticeships currently underway or being planned were identified during this project. The two pilots and the other examples identified are described below. The variability in the characteristics of these models reflects the way in which different people have conceptualised higher apprenticeships. These examples provide a snapshot of the array of initiatives undertaken in this area.

Ai Group industry project

Funded through the Apprenticeships training – alternative delivery pilots initiative, this project is a collaboration between the Ai Group, Siemens Ltd and Swinburne University of Technology. Swinburne has developed two new higher education qualifications for the pilot, a Diploma and Associate Degree in Applied Technologies. Siemens recruited 20 new employees to start the program in 2017. Participants completed their diploma in the first year and commenced their two-year associate degree in 2018. Pathways to a relevant bachelor degree will also be available. As they are completing higher education qualifications, eligible participants can access a Commonwealth-supported place, covering part of the tuition fee, and can defer the student contribution via the Higher Education Contribution Scheme – Higher Education Loan Program (HECS HELP). Since the program began, Swinburne (a dual-sector provider) has secured accreditation from the Victorian Registration and Qualifications Authority (VRQA) to deliver the diploma as a VET qualification and it is now listed as an accredited course on the National Register of VET.

PwC higher apprenticeships and traineeships pilot

Also funded through the Apprenticeships training – alternative delivery pilots initiative, this project is led by PwC in collaboration with a number of employers and RTOs in Sydney, Melbourne, Canberra and the Gold Coast. Around 2000 participants are undertaking a one-year VET diploma in fields that include business, leadership and management, and information technology, delivered through a combination of classroom, online and on-the-job training tailored to the participants' employment. Some of the training is eligible for state/territory government subsidies, with employers covering any gaps in training costs. Most of the participants are undertaking their qualification as a registered traineeship linked to a contract of training. Some participants are using the program to train new recruits, while others are using it to develop existing staff for career development.

Hyne Timber cadet program

This program offers participants the opportunity to earn a salary while learning about all areas of production, customer service, engineering innovation and technology, finance and business while also being sponsored to undertake agreed national qualifications in a certificate IV, diploma, or degree. This program, announced in April 2017, was reintroduced after Hyne Timber had successfully run its cadet program until the mid-2000s, providing the company with technical and leadership capability over many years. The cadetship lasts approximately three years, similar to a business degree but with the additional benefits of commercial leadership experience, workplace mentoring and a diverse day-to-day learning environment across a range of Hyne Timber's locations and operations. Details are available at: <https://www.hyne.com.au/article/105/hyne-timber-reintroduces-cadet-program>.

Box 1 continued

Plumbing-focused Diploma of Project Management

An interviewee from the plumbing industry described a plumbing-focused Diploma of Project Management that had been developed. It is a 12-month program in which employers pay for and release the employees for one day per month for attendance at workshops (participants also do an online component). These participants are already working in the role of project manager. The future of the program is unclear. There were 15 participants in the first intake, with a further two awaiting the next intake.

Industry 4.0 higher apprenticeships project (Tasmania)

The objective of the project, which is just commencing, is to create an integrated apprenticeship model that supports the higher skills needed for the emerging Fourth Industrial Revolution. It will do this through the development of a hybrid qualification, one that will see the participants complete, over a four-year period, a trade qualification plus an associate degree. The project involves a partnership between industry, the University of Tasmania and TasTAFE. It aims to combine the benefits of a VET qualification with the benefits of a higher education qualification, while also increasing engagement between higher education and industry. The model will be flexible and tailored to industry and the companies involved. The project will involve a couple of trades that were yet to be determined at the time of interview but interest had been shown in the advanced manufacturing, mining and wood technology industries.

Charles Sturt University Bachelor of Technology / Master of Engineering (Civil Systems)

Developed in consultation with industry leaders to meet demand for entrepreneurial engineers, this double degree builds engineering expertise over five-and-a-half years. The first one-and-a-half years are completed full-time on campus, while the final four years are completed part-time while in a paid work placement. While not labelled as a higher apprenticeship or degree apprenticeship, this model exhibits many of the characteristics explored in this research project. Further details are available at: <http://futurestudents.csu.edu.au/courses/engineering/bachelor-technology-master-engineering-civil-systems>.

The future demand for higher apprenticeships

Forum participants identified a gap in training between certificate III/IV and degree-level qualifications for many industries, which higher apprenticeships potentially could help address.

The forum participants and stakeholder interviewees were invited to comment on what they thought the future demand for higher apprenticeships would or could be. Several interviewees were able to suggest industries and occupations where they considered that demand for higher apprenticeships would be strong, with some suggesting that future demand would be in industries with technical skill requirements. Examples included 'electronic robotics, fixing AI systems, any jobs with the combination of mechanical and computer-based skills', 'engineering is an obvious one, maybe IT' and 'I could imagine a Diploma of Engineering, Diploma of Electrotechnology, Diploma of Automotive'.

The manufacturing industry, where one interviewee described the decrease in need for low-skilled labour and a future requiring higher-level skills, was also proposed as an industry where higher apprenticeships may provide an opportunity to address skills needs:

> Over time there has been a decrease in technician-type people employed alongside an increase in university graduates employed. Many uni grads will have learning beyond the requirements of the job but will lack the applied skills. There's an opportunity around the growth of technicians. (Manufacturing)

Other potential areas of demand included growth areas such as human services and health: 'those types of jobs where practical experience is just as valuable as technical skills'. An example was provided by an apprenticeship support provider:

> For example, youth workers in NSW … they need a diploma as an entry-level qualification. This would really suit the higher apprenticeship model. They may have some experience, there's high turnover, they're dealing with complex human support needs — it really suits a higher apprenticeship model rather than getting this qualification online. (Apprenticeship support provider)

In line with this thinking, forum participants identified a gap in training between certificate III/IV and degree-level qualifications for many industries, occurring in developing para-professional roles and in structured, contextualised, practical learning pathways for management, leadership and supervisory skills. Higher apprenticeships were suggested as a way to potentially address this gap.

Those participants who lacked a strong understanding of the nature of higher apprenticeships, their purpose and how they might be structured had difficulty in estimating the possible level of demand for them. Nonetheless, these participants considered current (non-apprenticeship) methods of higher-level skill acquisition and speculated whether higher apprenticeships might better meet that need. For example, as was demonstrated in the earlier section examining the data, one interviewee noted that most diplomas are not undertaken as apprenticeships. This interviewee, from an apprenticeship support provider, reported that many diplomas tend to be undertaken outside working hours (presumably referring to those who are employed). This interviewee surmised that these people, and those who choose not to undertake such higher-level training because of having to do it after hours, might show interest in higher-level apprenticeships as the training would then be incorporated into their jobs.

As many of the participants indicated, the demand for higher apprenticeships is closely linked to their possible roles and structures, particularly when alternative models are considered. These are discussed in the next section.

Many interviewees suggested that the role of higher apprenticeships would be to develop higher-level technical skills.

Potential roles and models of higher apprenticeships

The possible role of higher apprenticeships

Discussions at the forum and with stakeholder interviewees revealed the likely roles that higher apprenticeships would play.

Higher-level technical skills

Many of the interviewees, including a number from the mining, electrical and automotive industries, suggested that the objective of higher apprenticeships would be to develop higher-level technical skills. An interviewee from the mining industry suggested that this could be done by 'attaching skill sets … training up specialists'. In line with this view of the role, an interviewee from an apprenticeships support provider stated:

> Higher apprenticeships would fill a big gap in workforce development. The Australian economy won't be needing those mid-tier skills. Higher apprenticeships are a way to tackle the higher-skill market. (Apprenticeship support provider)

Several industry interviewees spoke of the non-accredited training that often occurs following a trade apprenticeship; for example, from the mining industry:

> An alternative, which is what we do now, is in-house training. Advanced in-house training done post-apprenticeship. It's not accredited, we have our own certification. (Mining)

It was suggested that higher apprenticeships could be a way of accrediting this higher-level non-accredited post-trade training; for example, from the electrical industry:

> Currently, much of the post-trade training is not accredited. But there are statements of attainment. The non-accredited training we do could fit this model [of higher apprenticeships]. (Electrical)

However, further consideration on if, and how, this would be an improvement on current practice (for the employer and/or the individual) is required.

Non-technical skills

Some interviewees spoke about the possibility of higher apprenticeships for developing management and/or supervisory skills, although views on this were mixed. While some interviewees were of the opinion that higher apprenticeships could involve the development of management and supervisory skills, others indicated that other pathways for people to develop those skills were already available (such as through existing management courses or through development on the job).

Apart from management and supervisory skills, it was proposed that higher apprenticeships could be used to develop skills such as project management, as well as equip people for disruption, problem-solving and facilitation. One interviewee, from the higher education sector, explained:

> It is giving people the opportunity to get into jobs that have higher-level, 21st century, whatever you want to call them, skills. They would learn these in addition to the technical skills. (Higher education)

The widespread demand for project management skills was raised by several interviewees, with an apprenticeships support provider highlighting their importance across all industries:

> Project management is not an industry skill need — it doesn't fit into industry skill needs so it doesn't attract funding. But it's needed across all industries.
>
> (Apprenticeship support provider)

An example was given by an interviewee from the plumbing industry, where a program had been developed to deliver a Diploma of Project Management (with a plumbing focus) 'for tradies who had come off the tools who felt they couldn't hold their own with university graduates' (see box 1 for more information). The program, completed over a 12-month period, involved work release one day per month to attend workshops, as well as an online component. The participants were those already working as project managers and so had been developing their skills informally on the job.

'Dual-trade' skill outcomes

Some interviewees spoke of situations where there is a need or demand for dual-trade skill outcomes. An example of this was provided by an interviewee from the energy sector: 'Something we've got are these dual trades. We might have one trade, like an electrical cable jointer … and we put them through another apprenticeship'.

A further example of apprentices undertaking more than one qualification was provided by the automotive industry; for example, auto electrical plus light vehicle mechanics, or both light and heavy vehicle mechanics.

An interviewee from the mining industry suggested that higher apprenticeships could be used to combine elements of two trades into one. This employer's proposal is based on a real labour market need, with the example provided involving diesel fitters and electricians. The interviewee explained that, currently, when a problem arises, two tradespeople — a diesel fitter and an electrician — are dispatched to assess the issue, and the relevant one then deals with the problem. More useful would be the capacity to send one person, someone possessing skills from both trades, to assess the situation and then call in the appropriate specialist. This requires a more diverse skills set.

A higher apprenticeship model that diversifies the skills of an apprentice into another area may be of interest, for these industries at least.

Bridging VET and higher education

The research participants identified two ways by which higher apprenticeships could play a role in bridging VET and higher education:

- by combining elements of the two sectors into the higher apprenticeship; or
- by providing a pathway from VET to higher education.[5]

5 No participants raised higher education-to-VET pathways. Although we know these transitions do occur, they may not have been considered higher apprenticeships by the research participants.

Higher apprenticeships could offer participants the opportunity to develop a more rounded set of skills, both technical and general, which are authenticated in the workplace.

In terms of combining elements of the two sectors, an interviewee from the higher education sector suggested that:

> There's a convergence of broader skills, traditionally delivered by higher ed, with technical skills, traditionally delivered by VET. The predicted future of work sees a convergence of these things. (Higher education)

This was reiterated by a union representative:

> We even see demands at the bachelor level. Employers saying that the graduates have the required technical skills, but no work skills. Higher apprenticeships may help address this. (Union)

An instance where higher apprenticeships offer a possible solution to an identified problem was provided by another interviewee from the higher education sector:

> We're increasingly seeing a requirement for higher education students to do work placement as part of their studies — employers want work experience. Higher apprenticeships could be a better option, doing work experience and the employer signing off on skills. (Higher education)

These views indicate that, depending on how they are structured, higher apprenticeships could offer participants the opportunity to develop a more rounded set of skills, both technical and general, which are authenticated in the workplace.

There was some interest in the idea of higher apprenticeships providing a pathway from VET to higher education. A number of the participants saw this as an opportunity for people with trade qualifications to 'move off the tools' into higher-level leadership or project management-type roles. However, others argued that pathways from VET to higher education already exist and questioned the need for a higher apprenticeship model to facilitate this. Indeed, Fowler (2017) provides a useful overview of student movement between VET and higher education and summarises a number of ways by which the two sectors work together to enable articulation. The forum participants were also able to provide examples of VET and higher education articulation, such as in civil construction and infrastructure. While higher apprenticeships might provide another mechanism for articulation, whether this would be any more effective than other already-established pathways is not known.

Uncertainty about the role of higher apprenticeships

The issue of the specific problem higher apprenticeships are attempting to resolve emerged from the forum of industry reference committee chairs and was a point raised by many of the interviewees across the different stakeholder groups. The interviewed stakeholders (in particular) consistently highlighted that the important question is, 'What does industry want?'. The focus, it was suggested, should be on what the workplace requires, and once that question has been answered, then the qualification to deliver the required skills can be determined. It was noted that many industries already have higher-level qualifications, but they are perhaps not being accessed through an apprenticeship model. Indeed, this was confirmed in the data analysis presented earlier in this report. In this scenario, delivery via an apprenticeship model may be more effective and should be considered.

In line with the above, many interviewees described the various ways in which the current system delivers the required skills and desired pathways. For example, an interviewee from the automotive industry explained that higher-level skill training occurs through structures already in place (for example, through a certificate IV or diploma qualification, or on the job as technology develops). Some of these interviewees used these examples as the basis to question the need for higher apprenticeships.

The potential structure of higher apprenticeships

Interviewees were asked how alternative models of higher apprenticeships might be structured, either within their industry, or given their professional experience. To help them to answer this question, examples of possible structures, as described by Guthrie and Dowling (2012), were provided to participants. These structures were:

- *Sequential model*: begins with an apprenticeship with a formalised pathway, which is promoted up-front, into a higher apprenticeship.
- *Concurrent model*: is a series of individual qualifications undertaken at the same time as part of an apprenticeship arrangement.
- *Customised model*: uses a qualifications framework as the basis to develop a qualification at the required level.

No single model garnered more support than the others. Many interviewees saw merit in all three of the proposed models, while others thought it too difficult to decide what model/s might work without a better understanding of the higher apprenticeship concept more generally.

Some interviewees were able to draw similarities between one or more of the proposed models and current thinking or activities in their industry. For example, one participant involved in the hospitality industry described a trial they are considering. They are looking at a three- to four-year qualification that would involve a Certificate III or IV in Commercial Cookery plus a Diploma in Hospitality, to be completed concurrently.

Another interviewee referred to the dual-trade scenario being employed in the energy sector, whereby a tradesperson undertakes a second apprenticeship. Unlike the sequential model described above, however, this pathway is not formalised or promoted up-front (before commencing the first apprenticeship) but is still sequential in its structure.

An interviewee from the plumbing industry expressed concern about the concurrent model, suggesting it would undermine the current (single) trade apprenticeship: ‘you don’t want to create a situation where there are “good” versus “bad” apprentices … “smart” versus “dumb”’. The idea of a two-tiered apprenticeship system was of concern to this participant. A preferred approach for this interviewee was one where a tradesperson who has completed an apprenticeship goes on to do a post-trade qualification. It was suggested it could be done like a ‘masterclass … to differentiate between run-of-the-mill tradespeople versus someone who has invested in themselves and their education’. A similar ‘add-on’ approach was also suggested by an interviewee from the automotive industry, who described it as an honours-like undertaking, while another interviewee who described it as a ‘top-up’. These ideas align most closely with the sequential model described above. This additional training could focus on both employability skills and high-level technical skills.

There is a balance required between standardisation to help understanding and portability, with flexibility and customisation to meet industry and employer needs.

However, some interviewees raised concerns about the lengthy time commitment potentially required under a sequential model (which would depend on the nature of the training or qualification conducted after the initial apprenticeship):

> It might be hard to get people to sign up for seven years. (Apprenticeship support organisation)
>
> Employers won't employ people for more than four years. (Business peak body)
>
> No one will sign up for a cert. IV apprenticeship — it takes too long. (Automotive industry)
>
> Diplomas require cert. III or IV before you can do it, so you're facing seven years of training. You can do medicine in less time than that! (Automotive industry)

One interviewee from an apprenticeship support organisation suggested that, in addition to the time commitment potentially required by the apprentice and the employer under this sequential model, 'you also need to consider the financial impact of six years on apprenticeship wages, if that's how it pans out … the impact of that?'.

There was a suggestion that the 'best' model is likely to depend on the particular industry, and that trade versus non-trade might matter. Interviewees, particularly those not from industry, often reiterated that 'we need industry to tell us what they want' (RTO representative).

The issue of the structure of the model was also raised, with a suggestion that diversity in the model be embraced (interviewee from a business peak body). However, it was acknowledged that it needs to include some standardised elements, as well as flexible components. Some participants were concerned that too much flexibility in the model would make higher apprenticeships difficult to manage; others expressed concern about qualification proliferation, especially where models are highly tailored. This suggests there is a balance required between standardisation to help understanding of the concept and portability, with flexibility and customisation to meet industry and employer needs.

More generally, some interviewees indicated that attempting to determine a structure in isolation from a purpose was tackling the problem via qualification construction rather than labour market need: 'the aim should be to meet unmet demand … and what do people need to fulfil this' (interviewee from a business peak body), a view confirmed by one of the government participants, who stated that the structure needs to be driven from the bottom up, ensuring that it's meeting industry need. This, the interviewee suggested, would lead to better outcomes. The forum participants held similar views: that innovation and change in the job and workplace should drive the modification of training, rather than the reverse.

Key elements of higher apprenticeships

Participants' views on the desirable fundamental characteristics of higher apprenticeships tended to fall into two groups, depending on which sector (VET or higher education) they were most strongly aligned or familiar with, and their position on the spectrum of 'traditional' to 'progressive' views on apprenticeships.

For those who were thinking about higher apprenticeships from a VET sector perspective, there was a general overarching consensus that the key elements of higher apprenticeships would be similar to current apprenticeships, but at a higher level of training. Hence, they would be employment-based with on-the-job training and formal off-the-job training, and bound by a contract of training between the apprentice and employer, stipulating the

obligations of both parties. It was suggested that higher apprenticeships without these standard key elements should not be considered apprenticeships at all.

One interviewee, a union representative, was concerned that, if higher apprenticeships were structured without the key elements of current apprenticeships, the strength of the current model could be undermined:

> The model needs to incorporate on-the-job and off-the-job training and a training contract. We would hate to see higher apprenticeships not have these elements and then used as a reverse argument to remove these elements from traditional apprenticeships. (Union representative)

Interestingly, neither a contract of training nor contract of employment is a specified requirement for higher apprenticeships under the new National Partnership Agreement. However, it was explained that this 'would depend on how they were brought forward by the states and territories. Our expectation was that it would involve work' (Commonwealth of Australia 2018, p.103).

There was general agreement by forum participants that the contract of training be retained as a core component of apprenticeships. However, some participants suggested the contract may act as a barrier, citing potential industrial relations issues and the possibility of reduced flexibility.

Navigating the intersection between state-based apprenticeship regulations and the industrial relations system can be daunting. The Australian Industry Group alternative delivery pilot involving Siemens and Swinburne University of Technology provides some useful insights into these issues. The pilot was established using an apprenticeship model. According to the Ai Group, this format was selected partly because the participant organisations were not experienced in the construction of an integrated training and employment program, and the apprenticeship system presented a well-established and ready-made framework.

To make this work, however, it was necessary to subsequently accredit the diploma as a VET course for the purposes of establishing the apprenticeship pathway, which also involved negotiations with industrial parties to facilitate this arrangement under the relevant award (Australian Industry Group 2018b).

Interviewees who were more aligned with the higher education sector tended to focus on the idea of integrated on- and off-the-job training when asked to identify the key elements of higher apprenticeships. One interviewee suggested that 'anything with a substantial internship could be considered similar to an apprenticeship model'. Developing skills in a work context was seen as important, 'in-the-job and on-the-job, rather than for-the-job'. As these interviewees were more familiar with the university environment, they were less likely to include the technical features of traditional apprenticeships in their responses than the industry and VET-focused interviewees.

In terms of the key required elements of higher apprenticeships, some interviewees called for flexibility and customisation as an example from a business peak body illustrates:

> Anything prescriptive will be problematic. Need to be able to customise. In some situations, the traditional key elements will be fine. In others, IT for example, some big companies would like apprenticeships, but they would not want a contract of training. It needs to be adapted to the sector, to the learners, and to the employers.
>
> (Business peak body)

Some interviewees suggested that employer incentives – to offset the costs of training – may be required to encourage employers to take on higher apprentices, while others believe incentives aren't worthwhile.

In line with this thinking, some forum participants framed higher apprenticeships as an opportunity to potentially deviate from the traditional approach and to try new things, while drawing on the strengths of existing apprenticeships.

Funding arrangements

The topic of funding raised many issues, both by forum participants and stakeholder interviewees. Areas of particular concern included:

- the difficulties in determining who should pay for high-level training (for example, industry versus government-funding)
- the differences between how VET and higher education are funded
- the potential for funding models to drive poor behaviour, as has been seen in recent times.

These issues are not specific to higher apprenticeships and are related to the VET and higher education sectors more generally. It was difficult for many of the research participants to comment on how these issues would play out for higher apprenticeships specifically.

The use of employer incentives for higher apprenticeships was raised and discussed by many interviewees, with some suggesting that employer incentives — to offset the costs of training — may be required to encourage employers to take on higher apprentices.

One interviewee, from the automotive industry, spoke about the decline in people undertaking certificate II qualifications, traditionally delivered as traineeships, due to a change in the availability of incentives:

> The government de-incentivised these and now everyone is going for the apprenticeship. But these are still important and required. They are needed as part of a complete workshop. (Automotive)

This interviewee was demonstrating the effect that incentives can have on uptake and completion, suggesting that this would also apply to higher apprenticeships.

However, not all interviewees believed that incentives (in general) were worthwhile. One interviewee, from the energy sector, explained that their training costs far outweigh any subsidy they would receive and this, coupled with the high administrative costs for government funding, meant that these funding opportunities were often not worthwhile.

More generally, some interviewees suggested that it is too difficult to speculate on what the funding arrangements for higher apprenticeships might look like without a better understanding of their purpose and how they might be structured. One of these interviewees called for a review of apprenticeships more generally, and suggested that the potential funding models could be considered as part of that.

Discussion at the forum included consideration of the return on investment for governments in supporting different levels of qualifications. A suggestion was made that at higher qualifications levels it is the individual who benefits the most, rather than the funder, that is, government. Related to this was the acknowledgement by several interviewees of the significant funding of the current higher apprenticeship pilots underway. Despite the fact

that the employers involved in the pilots also incur costs[6], there were concerns that the main beneficiaries of these funds might be the private companies involved, especially considering that participant training was funded by the states (outside the pilot funding arrangement). Of interest to some was whether these arrangements could or would continue without the additional funding.

Other considerations raised by stakeholder interviewees included whether higher apprenticeships should be government-funded and how their funding is balanced with that of lower-level qualifications. However, as one jurisdiction representative pointed out, funding is allocated to supply the skills required for current and future workforce needs. These may cut across all AQF levels (for VET qualifications). Hence, higher-level (VET) apprenticeships are already funded in cases where they align with priority occupations, as was highlighted earlier in this report.

Forum participants and interviewees identified the inherent differences between VET and higher education as a potential barrier to higher apprenticeships spanning both sectors.

Bridging VET and higher education

The extent to which both VET and higher education would be involved in alternative models of higher apprenticeships is not clear: it depends on the particular model/(s) adopted. While several pilots are being explored at this stage, whether only one of these, or all of them, will evolve into the future design of a higher apprenticeship is unknown. Some eventual higher apprenticeship models might exist only in the VET space — as diploma and advanced diploma apprenticeships currently do. An alternative model, as some interviewees suggested, is for higher apprenticeships to provide the opportunity for higher education qualifications to be delivered in a more applied manner, using an apprenticeship model. These would be situated in the higher education space.

Some interviewees suggested that higher apprenticeships could provide a bridge between the two sectors and that they could become a sort of hybrid qualification. However, research participants identified the inherent differences between VET and higher education as a potential barrier to higher apprenticeships that spanned both sectors. The challenges of negotiating different governance, regulatory and performance models in VET and higher education were acknowledged. It was suggested that this is an area likely to require further examination if higher apprenticeship models that cross this divide are to be established.

Another of the issues raised relates to what formally constitutes an apprenticeship. One interviewee, from government, explained that only those qualifications in the VET system can be formally considered apprenticeships. The interviewee suggested that to be considered as part of the current system, the definition needs to be narrower than it could potentially be, effectively ruling out the use of higher education qualifications unless the system is changed.

The comparison between competency-based VET and curriculum-based university was also raised as a potential issue, particularly for higher apprenticeships that involve qualifications from both sectors. The different approaches to learning and assessment may be difficult for learners to navigate and, as one interviewee suggested, ‘there needs to be mutual recognition of value, for both VET and higher education’.

6 The employers in the PwC pilot contribute to the costs of training (covering gaps between the cost of training and the state subsidy) and employers in both pilots are also paying the employee wages throughout the program, including in some cases recruiting new employees. Further details are provided in box 1.

Different views exist because the concept of higher apprenticeships is complicated.

Discussion

Alternative models of higher apprenticeships are receiving increased attention. Higher apprenticeships (including degree apprenticeships) are being used internationally to address a growing demand for higher-level skills in the workplace. Locally, recent pilot programs funded by the Australian Government have shone a spotlight on training at higher levels through an apprenticeship model. As a consequence of these pilots, different models of higher apprenticeships are now being considered and, specifically, whether they could be used more broadly. Additionally, in line with some of the international examples, the idea of delivering higher education qualifications, such as bachelor degrees, by means of an apprenticeship model is of interest.

This research has revealed a spectrum of views on higher apprenticeships, from those who have a traditional perspective on what apprenticeships are and should continue to be, to those who have more progressive opinions about how the model could be modified and expanded. This variance of views cuts across all elements of the concept of higher apprenticeships, from how 'higher' and 'apprenticeship' are defined, to the potential models and purposes of higher apprenticeships and what the demand for such apprenticeships might be.

These different views exist because the concept of higher apprenticeships remains complicated in the Australian context. The various models of higher apprenticeships considered span the VET and higher education sectors, and as such they sit at the intersection of different educational/training, funding/financing and regulatory arrangements. But, as this research has uncovered, there are examples of higher apprenticeship models being developed from the ground up as pilots, at a local level, to address local needs. The result is that, while it remains very difficult in the current environment to develop a 'standard' higher apprenticeship model, some of these pilots suggest ways of bypassing these potentially intractable existing arrangements. These higher apprenticeships may not necessarily 'tick all the boxes' of traditional apprenticeships (such as being delivered under a contract of training, for example), but they are attempting to address the needs of employers and students in innovative ways.

Diplomas and advanced diplomas are already delivered as apprenticeships under contracts of training and are captured in the national apprenticeship and traineeship data. These qualifications can be delivered by both VET providers and higher education institutions. How much further higher apprenticeships shift into the higher education sector depends on the form they take. As international examples show, and as some research participants suggested, higher apprenticeships that involve higher education bachelor degrees, as in the United Kingdom, could be considered. In a sense, there are two ways by which more broadly adopted higher apprenticeships might be approached and developed:

- start from the premise of a 'traditional', VET sector-delivered apprenticeship and push this upwards, towards higher AQF levels, including into higher education; and/or
- make higher education qualifications more vocational, by incorporating, or building them around, a work-based learning model.

The boundaries between the two sectors have blurred increasingly over recent times, with overlap in the delivery of qualifications that sit at AQF levels 5 and 6 (Fowler 2017). It is in that space that many of the research participants saw the greatest potential for the use of

higher apprenticeships, particularly for para-professional occupations. However, the differences between the two sectors, such as the different funding models and pedagogies used, mean that the implementation of higher-level apprenticeships in those two sectors may require different approaches. Hence, it is useful to discuss the logistics in these two sectors separately.

Higher apprenticeships in VET

Apprenticeships traditionally sit in the VET sector. They are funded through VET funding channels and are counted in NCVER's National Apprentice and Trainee Collection.[7] They involve a contract of employment and training (completed by the employer and employee), on-the-job training and structured off-the-job training. Trade apprenticeships, in particular, have strong links to industrial relations and are well understood by industry and the community. The strong history and understanding of apprenticeships by industry and within the VET sector means that most of the research participants representing these groups tended to view higher apprenticeships as being similar to current apprenticeships (with integrated on-the-job and off-the-job training conducted under a contract of training), but at a higher qualification level (usually within the VET sector).

Numerous diplomas and advanced diplomas are already approved for delivery under a contract of training as an apprenticeship or traineeship. Despite this availability, uptake of these qualifications as apprenticeships or traineeships tends to be low. Instead, we find that the majority of diploma and advanced diploma qualifications are undertaken outside an apprenticeship arrangement. This raises the question of whether the alternative models of higher apprenticeships would be of more interest.

Laundy et al. (2016)[8] suggested — as did the participants in this research — that unlocking the flexibility in the system in order to enable alternative apprenticeship models would involve resolving a number of issues, including addressing workplace relations issues; promoting flexible options and supporting employers, individuals and RTOs to access them; and ensuring industry acceptance of the alternative pathways, including their quality and outcomes. Funding availability for VET qualifications, linked to occupations in demand, as identified by individual jurisdictions, and the use of incentives for employers were also identified by some research participants as factors that would have a substantial influence on the uptake of higher-level apprenticeships.

Higher apprenticeships in higher education

The development of hybrid apprenticeships and/or higher education apprenticeships is seen as problematic for some of the research participants, particularly those deeply involved in the VET sector and with a strong association with apprenticeships. In particular, the different funding models, pedagogies and links to industrial relations were identified as barriers. Attempting to align a higher education qualification with an apprenticeship framework was described as trying to fit a square peg into a round hole.

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7 Data are collected from the contract of training. For more information, see <https://www.ncver.edu.au/research-and-statistics/collection/apprentices-and-trainees-collection>.

8 Note that Laundy et al. (2016) considered apprenticeships more generally, not higher apprenticeships specifically.

Having said this, it does appear that there are pockets of activity where apprenticeship-like higher education qualifications are being initiated and delivered (as described in box 1), although many of these are not labelled as apprenticeships. These initiatives are being developed from the ground up, at a local level, to address local needs. In this sense, that they are not formally recognised as apprenticeships may not matter.

Participants from the higher education sector recognised significant value in the applied learning model used in apprenticeships and tended to be more relaxed about the need for a contract of training. This is probably because, apart from those areas with a history of work-integrated learning (for example, internships), the higher education sector does not have the same strong tradition of apprenticeship training, where contracts of training are mandatory. Laundy et al. (2016) noted that, in the VET system, there are alternative ways to achieve an 'apprenticeship equivalent training outcome'; however, whether these types of arrangements can be counted formally as apprenticeships, as was recently highlighted in the 'Education and Employment Legislation Committee Senate estimates', has been identified as a potential issue (Australian Parliament 2018). This technicality may become a sticking point in the development of higher apprenticeships utilising higher education qualifications, particularly in industries traditionally serviced through VET-provided apprenticeships supported through VET funding streams.

Conclusion and ways forward

Many of the participants in this research demonstrated some appetite for the further development of alternative higher apprenticeship models in Australia, but it was clear that participants expected any development to be driven by real labour market needs. As suggested in Couldrey and Loveder (2017), some participants saw expanding the concept of higher apprenticeships as a natural progression of the traditional apprenticeship model, especially in terms of meeting the needs of the Fourth Industrial Revolution.

Despite the widespread interest in the concept of higher apprenticeships, this research has confirmed that a myriad of barriers exist to the further development and broader implementation of higher apprenticeships in both VET and higher education. Hence, a likely way forward involves working within the current environment to create appropriate and acceptable solutions to identified industry needs, as some of the examples described in this report have done (see box 1).

If a broadened concept of higher apprenticeships is tied strongly to a defined need and purpose, as has been promoted strongly by the research participants, a single one-size-fits-all model is unlikely to eventuate. Similarly, the complexities of the environment surrounding apprenticeships militate against the emergence of a single model. Hence, it is not surprising that higher apprenticeships and similar training programs are being developed and trialled, in pockets of industry — quite independently of each other — by both the VET and higher education sectors. An evaluation of these initiatives is beyond the scope of this project, and in any case, it is too early to determine the longer-term outcomes for the participants involved in these programs. Future evaluations of these activities could be instructive in demonstrating the ways by which various barriers have been overcome in the implementation of new programs.

The findings of this research indicate that the following activities may assist the quest to promote the development of higher apprenticeships:

- In addition to full evaluations of the Apprenticeships training — alternative delivery pilots, some research participants highlighted that further trials are needed, and in other industries. Learnings from similar activities occurring around Australia should also be captured.
- Some research participants were able to offer examples of where higher apprenticeships might present a solution to identified labour market needs. These included highly technical industries, such as engineering, information technology and advanced manufacturing, as well as industries where practical experience is as valuable as technical skills, such as in human services and health. A deeper investigation of the development and implementation of higher apprenticeships in these industries might prove particularly illuminating. In-depth discussions with representatives from individual industries (especially employers), together with other relevant stakeholders such as RTOs, higher education institutes and any relevant unions, should inform these investigations.
- The research has suggested that any future review of the apprenticeship system should take account of state and territory funding regimes and incentive arrangements (supporting the recommendation made by Laundy et al. 2016), with a view to how these might inform higher apprenticeships. As has been recognised in the United Kingdom, an appropriate and stable funding model is vital for the development and broader roll-out of higher apprenticeships (whether VET- or higher education-based). Given the differences in funding models for VET and higher education in Australia, an alternative funding mechanism might be required. A consideration of how the apprenticeship system might be expanded, including how this expansion is funded, appears to be timely, given the context of the changing nature of work and skill needs.

The emergent development of alternative models of higher apprenticeships and apprenticeship-like initiatives demonstrates that this model of training is being tested as a possible solution to local labour market needs. These examples, and the trend internationally in the development of higher apprenticeships, suggest there will be a continued shift in this direction in Australia. The VET sector needs to position itself to take advantage of this opportunity. To do this, it can draw on the strengths of the current apprenticeship system, but the sector will also need to look beyond the rigidities of the current system to find the flexibility that enables the required evolution.

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Appendix A

Table A1 shows apprenticeship/traineeship commencements (in 2017) in each of the diploma and advanced diploma qualifications that are registered/declared as apprenticeships or traineeships (as at November 2018) in at least one jurisdiction. The green shading shows the jurisdiction in which each qualification is registered/declared as an apprenticeship or traineeship.

Table A1 Apprenticeship/traineeship commencements in 2017 for diplomas and advanced diplomas registered/declared as apprenticeships or traineeships

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Animal Technology	ACM50110	-	-	-	-	-	-	-	-	0
Diploma of Veterinary Nursing (General Practice)	ACM50512	-	-	-	-	-	-	-	-	0
Diploma of Veterinary Nursing (Surgical)	ACM50212	-	-	-	-	-	-	-	-	0
Diploma of Veterinary Nursing (Dental)	ACM50312	-	-	-	-	-	-	-	-	0
Diploma of Veterinary Nursing (Emergency and Critical Care)	ACM50412	-	-	-	-	-	-	-	-	0
Diploma of Permaculture	AHC52116	-	-	-	-	-	-	-	-	0
Diploma of Parks and Gardens Management	AHC50716	-	-	-	-	-	-	-	-	0
Diploma of Irrigation Management	AHC51616	-	-	-	-	-	-	-	-	0
Diploma of Community Coordination and Facilitation	AHC51216	-	-	-	-	-	-	-	-	0
Diploma of Production Horticulture	AHC50316	-	-	-	-	-	-	-	-	0
Diploma of Agribusiness Management	AHC51416	-	-	-	-	-	-	-	-	0
Diploma of Production Nursery Management	AHC50816	-	-	-	-	-	-	-	-	0
Diploma of Arboriculture	AHC50516	-	-	-	-	-	-	-	-	0
Diploma of Retail Nursery Management	AHC50916	-	-	-	-	-	-	-	-	0
Diploma of Conservation and Land Management	AHC51116	-	-	-	-	-	-	-	-	0
Diploma of Pork Production	AHC50216	-	-	-	-	-	-	-	-	0
Diploma of Landscape Design	AHC50616	-	-	-	-	-	-	-	-	0
Diploma of Landscape Project Management	AHC52016	-	-	-	-	-	-	-	-	0
Diploma of Pest Management	AHC51316	-	-	-	-	-	-	-	-	0
Diploma of Horticulture	AHC50416	-	-	-	-	-	-	-	-	0
Diploma of Organic Farming	AHC51816	-	-	-	-	-	-	-	-	0
Diploma of Agriculture	AHC50116	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Sports Turf Management	AHC51016	-	-	-	-	-	-	-	-	0
Diploma of Meat Processing (Meat Retailing)	AMP50115	-	-	-	-	-	-	-	-	0
Diploma of Meat Processing	AMP50215	-	-	-	-	-	-	-	-	0
Advanced Diploma of Meat Processing	AMP60115	-	-	-	-	-	-	-	-	0
Diploma of Automotive Manufacturing	AUM50113	-	-	-	-	-	-	-	-	0
Diploma of Automotive Technology	AUR50216	-	-	-	-	-	-	-	-	0
Diploma of Automotive Management	AUR50116	-	-	-	-	-	-	-	-	0
Diploma of Motor Sport Technology	AUR50316	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Instrument Rating)	AVI50415	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Commercial Pilot Licence - Aeroplane)	AVI50215	28	-	-	-	-	-	-	-	28
Diploma of Aviation (Air Traffic Control)	AVI50115	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Commercial Pilot Licence - Helicopter)	AVI50315	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Aviation Management)	AVI50616	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Flight Instructor)	AVI50516	-	-	-	-	-	-	-	-	0
Advanced Diploma of Aviation (Pilot in Command)	AVI60216	-	-	-	-	-	-	-	-	0
Advanced Diploma of Aviation (Chief Flight Instructor)	AVI60116	-	-	-	-	-	-	-	-	0
Diploma of Advertising	BSB50115	-	-	-	-	-	-	-	-	0
Diploma of Business	BSB50215	32	15	<5	<5	-	<5	-	-	51
Diploma of Customer Engagement	BSB50315	-	-	-	-	-	-	-	-	0
Diploma of Business Administration	BSB50415	-	-	-	-	-	-	-	-	0
Diploma of Franchising	BSB50515	-	-	-	-	-	-	-	-	0
Diploma of Human Resources Management	BSB50615	7	-	-	-	-	-	-	<5	8
Diploma of International Business	BSB50815	-	-	-	-	-	-	-	-	0
Diploma of Marketing	BSB51215	-	-	-	-	-	-	-	-	0
Diploma of Work Health and Safety	BSB51315	-	-	-	-	-	-	-	-	0
Diploma of Project Management	BSB51415	30	<5	6	-	-	38	-	21	96
Diploma of Purchasing	BSB51515	-	-	-	-	-	-	-	-	0
Diploma of Quality Auditing	BSB51615	-	-	-	-	-	-	-	-	0
Diploma of Recordkeeping	BSB51715	-	-	-	-	-	-	-	-	0
Diploma of Leadership and Management	BSB51915	90	38	110	<5	185	93	-	339	859

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Conveyancing	BSB52015	-	-	-	-	-	-	-	-	0
Diploma of Legal Services	BSB52215	-	-	-	-	-	-	-	-	0
Advanced Diploma of Management (Human Resources)	BSB60915	-	-	-	-	-	-	-	-	0
Advanced Diploma of Leadership and Management	BSB61015	-	-	-	-	-	-	-	-	0
Advanced Diploma of Program Management	BSB61215	-	-	-	-	-	-	-	-	0
Diploma of Library and Information Services	BSB52115	<5	-	-	-	-	-	<5	-	<5
Diploma of Governance	BSB52315	-	-	-	-	-	-	-	-	0
Diploma of Marketing and Communication	BSB52415	-	-	-	-	-	-	-	-	0
Diploma of Human Resources Management	BSB50618	-	-	-	-	-	-	-	-	0
Diploma of Leadership and Management	BSB51918	-	-	-	-	-	-	-	-	0
Diploma of Community Services (Financial counselling)	CHC52108	-	-	-	-	-	-	-	-	0
Diploma of Early Childhood Education and Care	CHC50113	571	485	528	40	150	34	30	171	2009
Diploma of School Age Education and Care	CHC50213	25	49	<5	-	<5	-	-	8	88
Diploma of Youth Work	CHC50413	-	-	-	-	-	-	-	-	0
Diploma of Youth Justice	CHC50513	-	-	-	-	-	-	-	-	0
Diploma of Child, Youth and Family Intervention	CHC50313	-	-	-	-	-	-	<5	-	<5
Diploma of Community Services	CHC52015	10	9	-	-	-	41	12	32	104
Diploma of Community Development	CHC52115	-	-	-	-	-	-	-	-	0
Diploma of Alcohol and Other Drugs	CHC53215	-	-	-	-	-	14	<5	-	15
Diploma of Mental Health	CHC53315	<5	<5	-	-	-	-	-	<5	7
Diploma of Leisure and Health	CHC53415	-	<5	-	-	-	-	-	-	<5
Advanced Diploma of Community Sector Management	CHC62015	-	8	-	-	-	-	-	<5	9
Diploma of Counselling	CHC51015	-	-	-	-	-	-	-	-	0
Diploma of Financial Counselling	CHC51115	-	-	-	-	-	-	-	-	0
Diploma of Building and Construction	CPC50210	9	-	-	-	-	-	-	<5	10
Diploma of Fire Systems Design	CPC50509	-	-	-	-	-	-	-	-	0
Diploma of Building and Construction (Management)	CPC50308	-	-	-	-	-	-	-	-	0
Diploma of Plumbing and Services	CPC50412	-	-	-	-	-	-	-	-	0
Diploma of Hydraulic Services Design	CPC50612	-	-	-	-	-	-	-	-	0
Advanced Diploma of Building and Construction (Management)	CPC60212	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Property Services (Agency Management)	CPP50307	-	-	-	-	-	-	-	<5	<5
Diploma of Property Services (Business Broking)	CPP50409	-	-	-	-	-	-	-	-	0
Diploma of Property Services (Asset and Facility Management)	CPP50511	-	<5	-	-	-	-	-	-	<5
Diploma of Security and Risk Management	CPP50611	-	-	-	-	-	-	-	-	0
Diploma of Access Consulting	CPP50711	-	-	-	-	-	-	-	-	0
Diploma of Building Design	CPP50911	-	-	-	-	-	-	-	-	0
Diploma of Waste Management	CPP50811	-	-	-	-	-	-	-	-	0
Diploma of Residential Building Energy Assessment	CPP51012	-	-	-	-	-	-	-	-	0
Advanced Diploma of Surveying	CPP60312	-	-	-	-	-	-	-	-	0
Diploma of Strata Community Management	CPP50316	-	-	-	-	-	-	-	-	0
Diploma of Surveying	CPP50116	-	-	-	-	5	-	-	-	5
Diploma of Spatial Information Services	CPP50216	-	-	-	-	-	-	-	-	0
Diploma of Correctional Administration	CSC50115	-	-	-	-	-	-	-	-	0
Diploma of Dance (Elite Performance)	CUA50113	-	-	-	-	-	-	-	-	0
Diploma of Musical Theatre	CUA50213	-	-	-	-	-	-	-	-	0
Diploma of Dance Teaching and Management	CUA50313	-	-	-	-	-	-	-	-	0
Diploma of Live Production Design	CUA50513	-	-	-	-	-	-	-	-	0
Diploma of Live Production and Technical Services	CUA50415	-	-	-	-	-	-	-	-	0
Diploma of Photography and Photo Imaging	CUA50915	-	-	-	-	-	-	-	-	0
Diploma of Aboriginal and Torres Strait Islander Visual Arts Industry Work	CUA50615	-	-	-	-	-	-	-	-	0
Diploma of Graphic Design	CUA50715	-	-	-	-	-	-	-	-	0
Diploma of Visual Arts	CUA51115	-	-	-	-	-	-	-	-	0
Diploma of Music Industry	CUA50815	-	-	-	-	-	-	-	-	0
Diploma of Screen and Media	CUA51015	-	-	-	-	-	-	-	-	0
Diploma of Ceramics	CUA51215	-	-	-	-	-	-	-	-	0
Diploma of Broadcast Technology	CUF50307	-	-	-	-	-	-	-	-	0
Diploma of Pharmaceutical Manufacturing	FDF50210	-	-	-	-	-	-	-	-	0
Diploma of Food Processing	FDF50110	-	-	-	-	-	-	-	-	0
Diploma of Finance and Mortgage Broking Management	FNS50315	-	-	-	-	-	-	-	-	0
Diploma of Financial Markets	FNS51015	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Insurance Broking	FNS51215	-	-	-	-	-	-	-	-	0
Diploma of Integrated Risk Management	FNS50815	-	-	-	-	-	-	-	-	0
Diploma of Financial Services	FNS51815	-	-	-	-	-	-	-	-	0
Diploma of General Insurance	FNS51115	-	-	-	-	-	-	-	-	0
Diploma of Securitisation	FNS51615	-	-	-	-	-	-	-	-	0
Diploma of Life Insurance	FNS51315	-	-	-	-	-	-	-	-	0
Diploma of Credit Management	FNS51515	-	-	-	-	-	-	-	-	0
Diploma of Superannuation	FNS50715	-	-	-	-	-	-	-	-	0
Diploma of Financial Planning	FNS50615	-	-	-	-	-	-	-	-	0
Diploma of Loss Adjusting	FNS51415	-	-	-	-	-	-	-	-	0
Diploma of Banking Services Management	FNS50915	-	-	-	-	-	-	-	-	0
Advanced Diploma of Financial Planning	FNS60415	-	-	-	-	-	-	-	-	0
Diploma of Personal Injury and Disability Insurance Management	FNS51915	-	-	-	-	-	-	-	-	0
Diploma of Personal Trusts	FNS52015	-	-	-	-	-	-	-	-	0
Diploma of Accounting	FNS50217	-	-	-	-	-	-	-	-	0
Diploma of Payroll Services	FNS50417	-	-	-	-	-	-	-	-	0
Diploma of Forest and Forest Products	FWP50116	-	-	-	-	-	-	-	-	0
Diploma of Timber Truss and Frame Manufacture	FWP50216	-	-	-	-	-	-	-	-	0
Diploma of Timber Truss and Frame Design	FWP50316	-	-	-	-	-	-	-	-	0
Diploma of Aboriginal and/or Torres Strait Islander Primary Health Care	HLT50113	-	-	-	-	-	-	-	-	0
Diploma of Aboriginal and/or Torres Strait Islander Primary Health Care Practice	HLT50213	-	-	-	-	-	-	-	-	0
Diploma of Remedial Massage	HLT52015	-	-	-	-	-	-	-	-	0
Diploma of Traditional Chinese Medicine (TCM) Remedial Massage	HLT52115	-	-	-	-	-	-	-	-	0
Diploma of Shiatsu and Oriental Therapies	HLT52215	-	-	-	-	-	-	-	-	0
Diploma of Clinical Aromatherapy	HLT52315	-	-	-	-	-	-	-	-	0
Diploma of Kinesiology	HLT52415	-	-	-	-	-	-	-	-	0
Diploma of Reflexology	HLT52515	-	-	-	-	-	-	-	-	0
Diploma of Ayurvedic Lifestyle Consultation	HLT52615	-	-	-	-	-	-	-	-	0
Diploma of Audiometry	HLT57415	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Practice Management	HLT57715	-	-	-	-	-	-	-	-	0
Diploma of Anaesthetic Technology	HLT57915	-	-	-	-	-	-	-	-	0
Diploma of Paramedical Science	HLT51015	-	-	-	-	-	-	-	-	0
Diploma of Nursing	HLT54115	-	21	-	<5	-	-	-	-	24
Diploma of Dental Technology	HLT55115	-	-	-	-	-	-	-	-	0
Advanced Diploma of Nursing	HLT64115	-	-	-	-	-	-	-	-	0
Advanced Diploma of Dental Prosthetics	HLT65015	-	-	-	-	-	<5	-	-	<5
Diploma of Dental Technology	HLT55118	-	8	-	-	9	-	-	-	17
Diploma of Printing and Graphic Arts	ICP50115	-	-	-	-	-	-	-	-	0
Diploma of Information Technology Networking	ICT50415	-	-	-	-	-	-	-	6	6
Diploma of Software Development	ICT50715	-	-	-	-	-	-	-	<5	<5
Diploma of Digital and Interactive Games	ICT50215	-	-	-	-	-	-	-	-	0
Diploma of Information Technology	ICT50115	-	-	-	-	-	-	-	<5	<5
Diploma of Digital Media Technologies	ICT50915	-	-	-	-	-	-	-	-	0
Diploma of Database Design and Development	ICT50515	-	-	-	-	-	-	-	-	0
Diploma of Website Development	ICT50615	-	-	-	-	-	-	-	-	0
Diploma of Information Technology Systems Administration	ICT50315	-	-	-	-	-	-	-	-	0
Diploma of Systems Analysis and Design	ICT50815	-	-	-	-	-	-	-	-	0
Advanced Diploma of Network Security	ICT60215	-	5	-	-	-	-	-	-	5
Advanced Diploma of Computer Systems Technology	ICT60515	-	-	-	-	-	-	-	-	0
Diploma of Telecommunications Engineering	ICT51015	-	-	-	-	-	-	-	-	0
Diploma of Telecommunications Planning and Design	ICT51115	-	-	-	-	-	-	-	-	0
Diploma of Local Government (Operational Works)	LGA50404	-	-	-	-	-	-	-	-	0
Diploma of Local Government (Health and Environment)	LGA50208	-	-	-	-	-	-	<5	-	<5
Diploma of Local Government (Planning)	LGA50508	-	-	-	-	-	-	-	-	0
Diploma of Local Government	LGA50712	-	-	-	-	-	-	-	-	0
Diploma of Local Government Administration	LGA50104	-	-	-	-	-	-	<5	-	<5
Diploma of Local Government (Regulatory Services)	LGA50604	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Master up to 80 metres Near Coastal)	MAR50713	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Maritime Operations (Marine Engineering Class 3 Near Coastal)	MAR50613	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Marine Surveying)	MAR50215	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Engineer Watchkeeper)	MAR50115	-	-	-	-	-	-	-	-	0
Advanced Diploma of Maritime Operations (Marine Engineering Class 2)	MAR60115	-	-	-	-	-	-	-	-	0
Advanced Diploma of Maritime Operations (Marine Engineering Class 1)	MAR60215	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Watchkeeper Deck)	MAR50315	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Master up to 500 GT)	MAR50415	-	-	-	-	-	-	-	-	0
Advanced Diploma of Maritime Operations (Master Unlimited)	MAR60315	-	-	-	-	-	-	-	-	0
Diploma of Aeroskills (Avionics)	MEA50115	<5	<5	-	-	<5	-	<5	-	7
Diploma of Aeroskills (Mechanical)	MEA50215	-	-	-	-	-	-	-	-	0
Diploma of Aviation Maintenance Management (Avionics)	MEA50315	-	-	-	-	-	-	-	-	0
Diploma of Aviation Maintenance Management (Mechanical)	MEA50415	<5	<5	<5	<5	<5	<5	8	-	20
Diploma of Aeronautical Engineering	MEA50615	-	-	-	-	-	-	-	-	0
Diploma of Avionic Engineering	MEA50715	-	-	-	-	-	-	-	-	0
Diploma of Aeroskills (Avionics)	MEA50118	-	-	-	-	-	-	-	-	0
Diploma of Aeroskills (Mechanical)	MEA50218	-	-	-	-	-	-	-	-	0
Diploma of Engineering	MEM50105	-	-	-	-	-	-	-	-	0
Diploma of Jewellery and Object Design	MEM50311	-	-	-	-	-	-	-	-	0
Diploma of Engineering – Technical	MEM50212	8	-	11	<5	<5	-	-	-	22
Advanced Diploma of Engineering	MEM60112	<5	-	-	-	<5	-	-	-	6
Diploma of Manufacturing Technology	MSA50108	-	-	-	-	-	-	-	-	0
Advanced Diploma of Manufacturing Technology	MSA60108	-	-	-	-	-	-	-	-	0
Diploma of Stained Glass and Leadlighting	MSF50113	-	-	-	-	-	-	-	-	0
Diploma of Interior Design and Decoration	MSF50213	-	-	-	-	-	-	-	-	0
Diploma of Furniture Design and Technology	MSF50313	-	-	-	-	-	-	-	-	0
Diploma of Laboratory Technology	MSL50116	<5	-	5	-	19	-	<5	-	31
Advanced Diploma of Laboratory Operations	MSL60116	-	-	-	-	<5	-	-	-	<5
Diploma of Laboratory Technology	MSL50118	-	-	-	-	-	-	-	-	0
Advanced Diploma of Laboratory Operations	MSL60118	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Recreational Vehicles	MSM51015	-	-	-	-	-	-	-	-	0
Diploma of Production Management	MSM50316	-	-	-	-	-	-	-	-	0
Diploma of Sustainable Operations	MSS50116	-	-	-	-	-	-	-	-	0
Diploma of Environmental Monitoring and Technology	MSS50216	<5	-	-	-	-	-	-	-	<5
Diploma of Competitive Systems and Practices	MSS50316	-	<5	-	-	24	-	-	-	26
Advanced Diploma of Competitive Systems and Practices	MSS60316	-	-	-	-	-	-	-	-	0
Diploma of Environmental Monitoring and Technology	MSS50218	-	-	-	-	-	-	-	-	0
Diploma of Applied Fashion Design and Merchandising	MST50116	-	-	-	-	-	-	-	-	0
Diploma of Textile Design and Development	MST50216	-	-	-	-	-	-	-	-	0
Diploma of Healthcare Documentation	10478NAT	-	-	-	-	-	-	-	-	0
Diploma of Water Industry Operations	NWP50715	-	-	-	-	-	-	-	-	0
Diploma of Process Plant Technology	PMA50116	-	-	-	-	-	-	-	-	0
Diploma of Polymer Technology	PMB50116	-	-	-	-	-	-	-	-	0
Advanced Diploma of Polymer Technology	PMB60116	-	-	-	-	-	-	-	-	0
Diploma of Manufactured Mineral Products	PMC50116	-	-	-	-	-	-	-	-	0
Diploma of Pulp and Paper Process Management	PPM50116	-	-	-	-	-	-	-	-	0
Diploma of Procurement and Contracting	PSP50616	-	-	-	-	-	-	-	-	0
Diploma of Government Investigations	PSP50416	-	-	-	-	-	-	-	-	0
Diploma of Government	PSP50116	9	-	-	-	-	-	-	254	263
Diploma of Public Safety (SES Operations Management)	PUA50412	-	-	-	-	-	-	-	-	0
Diploma of Public Safety (Firefighting Management)	PUA50513	-	-	-	-	-	-	-	5	5
Advanced Diploma of Public Safety (Firefighting Management)	PUA60513	-	-	-	-	-	-	-	-	0
Diploma of Racing Integrity Management	RGR50218	-	-	-	-	-	-	-	-	0
Diploma of Surface Operations Management	RII50115	-	-	-	-	6	-	-	-	6
Diploma of Underground Metalliferous Mining Management	RII50215	-	-	-	-	-	-	-	-	0
Diploma of Minerals Processing	RII50315	-	-	-	-	-	-	-	-	0
Diploma of Civil Construction Management	RII50415	-	-	-	-	-	-	-	-	0
Diploma of Civil Construction Design	RII50515	33	-	-	-	-	-	-	-	33
Diploma of Drilling Operations	RII50615	-	-	-	-	-	-	-	-	0
Diploma of Drilling Oil & Gas (Off shore)	RII50715	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Drilling Oil & Gas	RII50815	-	-	-	-	-	-	-	-	0
Diploma of Underground Coal Mining Management	RII50915	-	-	-	-	-	-	-	-	0
Diploma of Well Servicing Operations	RII51015	-	-	-	-	-	-	-	-	0
Advanced Diploma of Extractive Industries Management	RII60215	-	-	-	-	-	-	-	-	0
Advanced Diploma of Underground Coal Mining Management	RII60315	-	-	-	-	-	-	-	-	0
Advanced Diploma of Drilling Management	RII60415	-	-	-	-	-	-	-	-	0
Advanced Diploma of Civil Construction Design	RII60515	<5	-	-	-	-	-	-	-	<5
Advanced Diploma of Civil Construction	RII60615	-	-	-	-	-	-	-	-	0
Advanced Diploma of Surface Coal Mining Management	RII60715	-	-	-	-	-	-	-	-	0
Diploma of Aquaculture	SFI50111	-	-	-	-	-	-	-	-	0
Diploma of Fishing Operations	SFI50211	-	-	-	-	-	-	-	-	0
Diploma of Fisheries Compliance	SFI50411	-	-	-	-	-	-	-	-	0
Diploma of Seafood Processing	SFI50511	-	-	-	-	-	-	-	-	0
Diploma of Floristry Design	SFL50115	-	-	-	-	-	-	-	-	0
Diploma of Beauty Therapy	SHB50115	-	-	-	-	-	-	-	-	0
Diploma of Salon Management	SHB50216	-	-	-	-	-	-	-	-	0
Diploma of Retail Leadership	SIR50116	-	-	-	-	-	-	-	-	0
Diploma of Retail Merchandise Management	SIR50317	-	-	-	-	-	-	-	-	0
Diploma of Visual Merchandising	SIR50217	-	-	-	-	-	-	-	-	0
Diploma of Outdoor Recreation	SIS50310	-	-	-	-	-	-	-	-	0
Diploma of Sport Coaching	SIS50512	-	-	-	-	-	-	-	-	0
Diploma of Sport Development	SIS50612	-	-	-	-	-	-	-	-	0
Diploma of Fitness	SIS50215	-	-	-	-	-	-	-	-	0
Diploma of Sport and Recreation Management	SIS50115	-	-	-	-	-	-	-	-	0
Diploma of Hospitality Management	SIT50416	-	-	<5	-	-	-	-	-	<5
Diploma of Travel and Tourism Management	SIT50116	-	-	-	-	-	-	-	-	0
Diploma of Holiday Park and Resort Management	SIT50216	-	-	-	-	-	-	-	-	0
Diploma of Event Management	SIT50316	-	-	-	-	-	-	-	-	0
Advanced Diploma of Hospitality Management	SIT60316	-	-	-	-	-	-	-	-	0
Diploma of Training Design and Development	TAE50216	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Diploma of Logistics	TLI50415	<5	<5	-	-	7	-	-	-	12
Diploma of Rail Operations Management	TLI50615	-	-	-	-	-	-	-	-	0
Diploma of Deployment Logistics	TLI50515	-	-	-	-	-	-	-	-	0
Diploma of Materiel Logistics	TLI50215	-	-	-	-	-	-	-	-	0
Advanced Diploma of Deployment Logistics	TLI60215	-	-	-	-	-	-	-	-	0
Advanced Diploma of Materiel Logistics	TLI60115	-	-	-	-	-	-	-	-	0
Diploma of International Freight Forwarding	TLI50316	-	-	-	-	-	-	-	-	0
Diploma of Bus and Coach Operations	TLI50716	-	-	-	-	-	-	-	-	0
Diploma of Customs Broking	TLI50816	-	-	-	-	-	-	-	-	0
Diploma of Rail Operations Management	TLI50618	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration	UEE62411	-	-	-	-	-	-	-	-	0
Advanced Diploma of Air-conditioning and Refrigeration Engineering	UEE62511	-	-	-	-	-	-	-	-	0
Advanced Diploma of Electrical – Engineering	UEE62211	-	-	-	-	-	-	-	-	0
Advanced Diploma of Electrical Engineering – Coal Mining	UEE62311	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering Technology – Electrical	UEE62111	-	-	-	-	-	-	-	-	0
Diploma of Computer Systems Engineering	UEE50111	-	-	-	-	-	-	-	-	0
Diploma of Electrical and Instrumentation	UEE50211	-	-	-	-	-	-	-	-	0
Diploma of Electrical and Refrigeration and Air-conditioning	UEE50311	-	-	-	-	-	-	-	-	0
Diploma of Electrical Engineering	UEE50411	<5	-	-	-	-	-	-	-	<5
Diploma of Electronics and Communications Engineering	UEE50511	-	-	-	-	-	-	-	-	0
Diploma of Renewable Energy Engineering	UEE50711	-	-	-	-	-	-	-	-	0
Diploma of Research and Development	UEE50811	-	-	-	-	-	-	-	-	0
Diploma of Industrial Electronics and Control Engineering	UEE50911	-	-	-	-	-	-	-	-	0
Diploma of Instrumentation and Control Engineering	UEE51011	-	-	-	-	-	-	-	-	0
Diploma in Electrical Equipment and Systems Engineering	UEE53011	-	-	-	-	-	-	-	-	0
Advanced Diploma of Electronics and Communications Engineering	UEE60211	-	-	-	-	-	-	-	-	0
Advanced Diploma of Computer Systems Engineering	UEE60411	-	-	-	-	-	-	-	-	0
Advanced Diploma of Industrial Electronics and Control Engineering	UEE60611	-	-	-	-	-	-	-	-	0

Qualification name	Qualification code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
Advanced Diploma of Renewable Energy Engineering	UEE60911	-	-	-	-	-	-	-	-	0
Advanced Diploma of Automated Systems Maintenance Engineering	UEE61111	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering – Explosion Protection	UEE61211	-	-	-	-	-	-	-	-	0
Advanced Diploma of Instrumentation and Control Engineering	UEE61511	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering Technology – Electronics	UEE61711	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering Technology – Computer Systems	UEE61811	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering Technology – Renewable Energy	UEE62011	-	-	-	-	-	-	-	-	0
Diploma of Gas Supply Industry Operations	UEG50114	-	-	-	-	-	-	-	-	0
Advanced Diploma of Gas Supply Industry Operations	UEG60114	-	-	-	-	-	-	-	-	0
Advanced Diploma of ESI – Power Systems	UET60212	-	-	-	-	-	-	-	-	0
Diploma of ESI – Power Systems	UET50212	-	-	-	-	-	-	-	-	0
Diploma of ESI – Power Systems Operations	UET50312	-	-	-	-	-	-	-	-	0
Advanced Diploma of ESI – Power Systems Operations	UET60312	-	-	-	-	-	-	-	-	0
Diploma of Applied Technologies	22460VIC	-	-	-	-	-	-	-	-	0
Diploma of Civil and Structural Engineering	52725WA	-	-	-	-	-	-	-	-	0
Total		**874**	**653**	**670**	**51**	**418**	**223**	**63**	**849**	**3801**

Notes: Commencements of fewer than 5 are not reported for confidentiality reasons.

Source: Commencements extracted from the National Apprentice and Trainee Collection, December 2017 estimates, unpublished.

Table A2 shows program enrolments (in 2017) that were not conducted under an apprenticeship or traineeship arrangement in each of the diploma and advanced diploma qualifications that are registered/declared as apprenticeships or traineeships (as at November 2018) in at least one jurisdiction. The green shading indicates the jurisdiction in which each qualification is registered/declared as an apprenticeship or traineeship.

Table A2 Program enrolments that were not conducted under an apprenticeship or traineeship arrangement in 2017 for diplomas and advanced diplomas registered/declared as apprenticeships or traineeships

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Animal Technology	ACM50110	<5	99	<5	40	-	-	-	-	-	-	-	144
Diploma of Veterinary Nursing (General Practice)	ACM50512	30	20	35	5	14	<5	-	<5	-	<5	-	109
Diploma of Veterinary Nursing (Surgical)	ACM50212	<5	<5	6	<5	<5	<5	-	-	-	<5	-	21
Diploma of Veterinary Nursing (Dental)	ACM50312	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Veterinary Nursing (Emergency and Critical Care)	ACM50412	13	<5	19	<5	6	<5	-	<5	-	<5	-	49
Diploma of Permaculture	AHC52116	15	-	-	-	-	-	-	-	-	-	-	15
Diploma of Parks and Gardens Management	AHC50716	-	-	-	-	<5	-	-	-	-	-	-	<5
Diploma of Irrigation Management	AHC51616	-	-	-	<5	-	-	-	-	-	-	-	<5
Diploma of Community Coordination and Facilitation	AHC51216	-	-	-	-	-	-	<5	-	-	-	-	<5
Diploma of Production Horticulture	AHC50316	-	20	23	-	-	-	-	-	-	-	-	43
Diploma of Agribusiness Management	AHC51416	10	24	49	10	-	11	14	-	-	-	-	118
Diploma of Production Nursery Management	AHC50816	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Arboriculture	AHC50516	43	53	9	8	-	-	-	-	-	-	-	113
Diploma of Retail Nursery Management	AHC50916	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Conservation and Land Management	AHC51116	260	305	19	26	20	<5	23	-	-	-	-	654
Diploma of Pork Production	AHC50216	-	-	5	-	-	-	-	-	-	-	-	5
Diploma of Landscape Design	AHC50616	221	84	31	40	19	<5	-	-	-	-	-	396
Diploma of Landscape Project Management	AHC52016	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Pest Management	AHC51316	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Horticulture	AHC50416	150	164	126	40	45	7	-	24	-	-	-	556
Diploma of Organic Farming	AHC51816	33	<5	-	-	-	-	-	-	-	-	-	34
Diploma of Agriculture	AHC50116	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Sports Turf Management	AHC51016	8	63	-	<5	-	-	-	-	-	-	-	74

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Meat Processing (Meat Retailing)	AMP50115	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Meat Processing	AMP50215	-	-	20	<5	<5	-	-	-	-	-	-	22
Advanced Diploma of Meat Processing	AMP60115	-	-	<5	-	-	-	-	-	-	-	-	<5
Diploma of Automotive Manufacturing	AUM50113	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Automotive Technology	AUR50216	-	436	15	16	33	-	-	-	-	-	-	500
Diploma of Automotive Management	AUR50116	-	132	20	<5	<5	-	-	-	-	-	-	157
Diploma of Motor Sport Technology	AUR50316	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Aviation (Instrument Rating)	AVI50415	19	14	124	155	12	-	-	-	-	-	-	324
Diploma of Aviation (Commercial Pilot Licence – Aeroplane)	AVI50215	301	582	276	395	58	-	-	-	-	-	-	1 612
Diploma of Aviation (Air Traffic Control)	AVI50115	-	89	-	-	-	-	-	-	-	-	-	89
Diploma of Aviation (Commercial Pilot Licence – Helicopter)	AVI50315	-	-	135	28	-	-	-	-	-	-	-	163
Diploma of Aviation (Aviation Management)	AVI50616	7	-	9	-	<5	-	-	-	-	-	-	17
Diploma of Aviation (Flight Instructor)	AVI50516	18	8	11	29	-	-	-	-	-	-	-	66
Advanced Diploma of Aviation (Pilot in Command)	AVI60216	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Aviation (Chief Flight Instructor)	AVI60116	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Advertising	BSB50115	10	<5	<5	<5	-	-	-	-	-	-	-	18
Diploma of Business	BSB50215	8 446	3 966	10 839	1 297	1,447	97	43	218	-	492	15	26 860
Diploma of Customer Engagement	BSB50315	<5	<5	10	-	-	-	-	-	-	-	-	13
Diploma of Business Administration	BSB50415	4 853	1 001	1 934	191	134	7	14	35	-	-	82	8 251
Diploma of Franchising	BSB50515	-	-	14	-	-	-	-	-	-	-	-	14
Diploma of Human Resources Management	BSB50615	3 835	1 173	1 064	286	348	28	59	107	-	159	21	7 080
Diploma of International Business	BSB50815	517	335	196	21	65	-	-	-	-	1 522	3	2 659
Diploma of Marketing	BSB51215	1 451	352	274	62	48	-	-	<5	-	255	-	2 444
Diploma of Work Health and Safety	BSB51315	543	251	671	94	287	36	29	37	-	-	<5	1 949
Diploma of Project Management	BSB51415	5 626	2 926	2 767	454	852	110	63	635	-	39	11	13 483
Diploma of Purchasing	BSB51515	-	<5	29	10	16	-	-	9	-	-	-	65
Diploma of Quality Auditing	BSB51615	254	183	249	25	76	<5	67	15	-	-	7	880
Diploma of Recordkeeping	BSB51715	-	-	-	-	5	-	-	1	-	-	-	6

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Leadership and Management	BSB51915	17 405	8 611	6 118	1 368	2 534	1 563	136	414	-	506	7	38 662
Diploma of Conveyancing	BSB52015	-	442	-	-	89	-	-	-	-	-	-	531
Diploma of Legal Services	BSB52215	184	98	688	11	31	-	-	16	-	-	<5	1 031
Advanced Diploma of Management (Human Resources)	BSB60915	440	197	197	50	<5	-	-	25	-	-	-	913
Advanced Diploma of Leadership and Management	BSB61015	4 791	2 378	1 485	290	684	9	52	80	-	683	<5	10 453
Advanced Diploma of Program Management	BSB61215	279	94	129	<5	14	<5	-	<5	-	-	<5	529
Diploma of Library and Information Services	BSB52115	444	327	264	78	57	-	-	10	-	<5	-	1182
Diploma of Governance	BSB52315	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Marketing and Communication	BSB52415	1 167	475	184	87	20	<5	-	-	-	524	-	2 459
Diploma of Human Resources Management	BSB50618	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Leadership and Management	BSB51918	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Community Services (Financial counselling)	CHC52108	18	<5	-	-	25	-	-	-	-	-	-	44
Diploma of Early Childhood Education and Care	CHC50113	20 063	20 026	13 983	2 691	1 995	208	336	518	-	114	63	59 997
Diploma of School Age Education and Care	CHC50213	143	205	347	40	115	-	-	<5	-	-	-	852
Diploma of Youth Work	CHC50413	3 268	430	1,422	114	136	-	21	9	-	-	15	5 415
Diploma of Youth Justice	CHC50513	18	14	218	71	-	-	-	-	-	-	-	321
Diploma of Child, Youth and Family Intervention	CHC50313	186	-	701	-	<5	-	34	-	-	-	6	929
Diploma of Community Services	CHC52015	7 979	4 710	3 887	539	819	56	94	246	-	27	18	18 375
Diploma of Community Development	CHC52115	-	92	50	7	41	-	-	-	-	-	-	190
Diploma of Alcohol and Other Drugs	CHC53215	383	246	87	27	20	-	22	<5	-	-	19	808
Diploma of Mental Health	CHC53315	856	609	177	63	83	<5	11	15	-	-	2	1 818
Diploma of Leisure and Health	CHC53415	47	108	182	-	-	-	-	-	-	-	-	337
Advanced Diploma of Community Sector Management	CHC62015	106	1 342	359	115	98	19	22	11	-	-	-	2 072
Diploma of Counselling	CHC51015	2,892	604	1 993	283	242	-	26	296	-	17	38	6 391
Diploma of Financial Counselling	CHC51115	55	67	15	47	-	-	-	-	-	-	<5	185
Diploma of Building and Construction	CPC50210	5 618	3 611	666	108	950	53	<5	97	-	845	<5	11 950
Diploma of Fire Systems Design	CPC50509	92	7	-	-	-	-	-	-	-	-	-	99
Diploma of Building and Construction (Management)	CPC50308	88	680	97	23	41	-	-	34	-	-	-	963

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Plumbing and Services	CPC50412	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Hydraulic Services Design	CPC50612	48	18	75	-	-	-	-	-	-	-	-	141
Advanced Diploma of Building and Construction (Management)	CPC60212	39	9	268	-	<5	-	-	24	-	-	-	341
Diploma of Property Services (Agency Management)	CPP50307	3 118	-	33	264	242	108	12	5	-	-	-	3 782
Diploma of Property Services (Business Broking)	CPP50409	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Property Services (Asset and Facility Management)	CPP50511	-	57	-	-	-	-	-	-	-	-	-	57
Diploma of Security and Risk Management	CPP50611	28	<5	336	-	8	-	-	55	-	-	-	429
Diploma of Access Consulting	CPP50711	6	15	10	<5	-	-	-	-	-	-	-	32
Diploma of Building Design	CPP50911	2 166	<5	889	208	215	60	-	96	-	75	-	3 711
Diploma of Waste Management	CPP50811	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Residential Building Energy Assessment	CPP51012	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Surveying	CPP60312	-	-	-	-	28	-	-	-	-	-	-	28
Diploma of Strata Community Management	CPP50316	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Surveying	CPP50116	117	161	-	23	59	-	-	14	-	-	-	374
Diploma of Spatial Information Services	CPP50216	15	-	-	-	-	-	-	9	-	-	-	24
Diploma of Correctional Administration	CSC50115	<5	-	103	-	-	-	-	-	-	-	-	106
Diploma of Dance (Elite Performance)	CUA50113	158	223	40	16	16	-	-	-	-	-	-	453
Diploma of Musical Theatre	CUA50213	56	151	60	-	-	-	-	6	-	-	-	273
Diploma of Dance Teaching and Management	CUA50313	-	6	<5	-	-	-	-	-	-	-	-	8
Diploma of Live Production Design	CUA50513	6	-	-	9	-	-	-	-	-	-	-	15
Diploma of Live Production and Technical Services	CUA50415	81	104	-	29	45	-	-	-	-	-	-	259
Diploma of Photography and Photo Imaging	CUA50915	191	193	148	31	87	-	-	38	-	-	9	697
Diploma of Aboriginal and Torres Strait Islander Visual Arts Industry Work	CUA50615	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Graphic Design	CUA50715	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Visual Arts	CUA51115	375	477	198	123	69	27	-	47	-	9	-	1 325
Diploma of Music Industry	CUA50815	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Screen and Media	CUA51015	1 169	1 436	1 228	128	397	<5	14	237	-	-	<5	4 613

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Diploma of Ceramics	CUA51215	60	-	-	-	-	-	-	-	-	-	-	60
Diploma of Broadcast Technology	CUF50307	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Pharmaceutical Manufacturing	FDF50210	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Food Processing	FDF50110	-	6	-	9	<5	-	-	-	-	-	-	16
Diploma of Finance and Mortgage Broking Management	FNS50315	1 557	1 080	1 056	145	192	9	<5	10	-	<5	-	4 051
Diploma of Financial Markets	FNS51015	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Insurance Broking	FNS51215	7	186	18	-	-	-	-	-	-	-	<5	212
Diploma of Integrated Risk Management	FNS50815	-	19	-	-	-	-	-	-	-	-	-	19
Diploma of Financial Services	FNS51815	250	36	-	20	-	-	-	-	-	829	-	1 135
Diploma of General Insurance	FNS51115	15	58	-	-	-	-	-	-	-	-	-	73
Diploma of Securitisation	FNS51615	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Life Insurance	FNS51315	-	7	-	-	-	-	-	-	-	-	-	7
Diploma of Credit Management	FNS51515	20	-	-	-	-	-	-	-	-	-	-	20
Diploma of Superannuation	FNS50715	854	33	<5	-	-	-	-	-	-	<5	<5	892
Diploma of Financial Planning	FNS50615	2 831	3 636	175	87	50	-	<5	5	-	6	5	6 798
Diploma of Loss Adjusting	FNS51415	-	48	-	-	-	-	-	-	-	-	-	48
Diploma of Banking Services Management	FNS50915	70	29	-	13	<5	-	-	-	-	25	-	139
Advanced Diploma of Financial Planning	FNS60415	712	890	59	<5	39	-	-	<5	-	<5	<5	1 710
Diploma of Personal Injury and Disability Insurance Management	FNS51915	-	105	-	-	-	-	-	-	-	-	-	105
Diploma of Personal Trusts	FNS52015	22	-	-	-	-	-	-	-	-	-	-	22
Diploma of Accounting	FNS50217	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Payroll Services	FNS50417	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Forest and Forest Products	FWP50116	-	<5	7	-	-	-	-	-	-	-	-	8
Diploma of Timber Truss and Frame Manufacture	FWP50216	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Timber Truss and Frame Design	FWP50316	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Aboriginal and/or Torres Strait Islander Primary Health Care	HLT50113	-	<5	246	-	-	-	-	-	-	-	<5	249
Diploma of Aboriginal and/or Torres Strait Islander Primary Health Care Practice	HLT50213	-	-	9	-	-	-	39	-	-	-	-	48
Diploma of Remedial Massage	HLT52015	1 784	2 188	1 973	385	586	88	-	74	-	18	30	7 126

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Traditional Chinese Medicine (TCM) Remedial Massage	HLT52115	30	-	16	-	-	-	-	-	-	-	-	46
Diploma of Shiatsu and Oriental Therapies	HLT52215	<5	80	8	-	-	-	-	-	-	-	-	90
Diploma of Clinical Aromatherapy	HLT52315	-	<5	137	12	<5	-	-	-	-	-	-	151
Diploma of Kinesiology	HLT52415	101	114	118	22	100	-	-	-	-	-	-	455
Diploma of Reflexology	HLT52515	-	-	66	8	6	-	-	-	-	-	-	80
Diploma of Ayurvedic Lifestyle Consultation	HLT52615	39	-	15	<5	-	-	-	-	-	-	-	58
Diploma of Audiometry	HLT57415	211	-	-	-	-	-	-	-	-	-	-	211
Diploma of Practice Management	HLT57715	1 499	101	518	20	-	-	-	-	-	-	-	2 138
Diploma of Anaesthetic Technology	HLT57915	-	-	83	-	98	-	-	-	-	-	-	181
Diploma of Paramedical Science	HLT51015	49	271	189	-	20	-	-	-	-	-	<5	531
Diploma of Nursing	HLT54115	2 092	4 722	4 037	871	1 190	208	-	154	-	-	-	13 274
Diploma of Dental Technology	HLT55115	79	161	93	17	57	-	-	-	-	-	-	407
Advanced Diploma of Nursing	HLT64115	<5	26	7	-	-	-	-	-	-	-	-	34
Advanced Diploma of Dental Prosthetics	HLT65015	24	24	-	-	-	-	-	-	-	-	-	48
Diploma of Dental Technology	HLT55118	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Printing and Graphic Arts	ICP50115	-	18	<5	-	-	-	-	-	-	-	-	21
Diploma of Information Technology Networking	ICT50415	1 356	638	828	167	303	38	<5	53	-	236	-	3 622
Diploma of Software Development	ICT50715	417	252	242	181	101	-	-	27	-	417	-	1 637
Diploma of Digital and Interactive Games	ICT50215	240	223	2 151	52	26	-	-	6	-	-	-	2 698
Diploma of Information Technology	ICT50115	1 699	891	662	69	66	-	-	20	-	<5	-	3 408
Diploma of Digital Media Technologies	ICT50915	279	70	374	77	9	-	-	-	-	-	-	809
Diploma of Database Design and Development	ICT50515	108	<5	17	<5	<5	-	-	-	-	-	-	132
Diploma of Website Development	ICT50615	898	76	466	108	25	-	-	-	-	-	<5	1 574
Diploma of Information Technology Systems Administration	ICT50315	208	21	62	9	<5	11	<5	-	-	-	-	316
Diploma of Systems Analysis and Design	ICT50815	197	37	<5	-	<5	-	-	<5	-	-	-	241
Advanced Diploma of Network Security	ICT60215	274	60	21	33	19	-	-	-	-	-	-	407
Advanced Diploma of Computer Systems Technology	ICT60515	7	152	<5	41	-	16	-	-	-	36	-	254
Diploma of Telecommunications Engineering	ICT51015	23	21	-	-	-	-	-	-	-	-	-	44

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Telecommunications Planning and Design	ICT51115	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Local Government (Operational Works)	LGA50404	<5	-	-	-	<5	-	-	-	-	-	-	7
Diploma of Local Government (Health and Environment)	LGA50208	6	-	5	-	-	-	10	-	-	-	-	21
Diploma of Local Government (Planning)	LGA50508	<5	-	16	-	-	<5	-	-	-	-	-	21
Diploma of Local Government	LGA50712	<5	-	16	11	-	-	-	-	-	-	-	29
Diploma of Local Government Administration	LGA50104	-	-	100	-	9	-	7	-	-	-	-	116
Diploma of Local Government (Regulatory Services)	LGA50604	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Master up to 80 metres Near Coastal)	MAR50713	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Maritime Operations (Marine Engineering Class 3 Near Coastal)	MAR50613	<5	-	-	<5	15	16	-	-	-	-	-	36
Diploma of Maritime Operations (Marine Surveying)	MAR50215	-	-	-	-	-	-	-	90	-	-	-	90
Diploma of Maritime Operations (Engineer Watchkeeper)	MAR50115	10	-	19	-	-	-	-	-	-	-	-	29
Advanced Diploma of Maritime Operations (Marine Engineering Class 2)	MAR60115	18	-	-	-	5	-	-	-	-	-	-	23
Advanced Diploma of Maritime Operations (Marine Engineering Class 1)	MAR60215	10	-	-	-	<5	-	-	-	-	-	-	12
Diploma of Maritime Operations (Watchkeeper Deck)	MAR50315	24	-	-	-	71	-	-	-	-	-	-	95
Diploma of Maritime Operations (Master up to 500 GT)	MAR50415	21	-	-	-	16	-	-	-	-	-	-	37
Advanced Diploma of Maritime Operations (Master Unlimited)	MAR60315	-	-	-	-	245	-	-	-	-	-	-	245
Diploma of Aeroskills (Avionics)	MEA50115	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Aeroskills (Mechanical)	MEA50215	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Aviation Maintenance Management (Avionics)	MEA50315	-	6	-	-	-	-	-	-	-	-	-	6
Diploma of Aviation Maintenance Management (Mechanical)	MEA50415	-	<5	-	-	-	-	-	-	-	-	-	<5
Diploma of Aeronautical Engineering	MEA50615	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Avionic Engineering	MEA50715	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Aeroskills (Avionics)	MEA50118	17	<5	33	<5	-	-	-	-	-	-	-	53

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Diploma of Aeroskills (Mechanical)	MEA50218	23	<5	114	14	-	-	-	-	-	-	-	154
Diploma of Engineering	MEM50105	31	71	52	99	21	-	-	-	-	-	-	274
Diploma of Jewellery and Object Design	MEM50311	-	84	-	<5	-	-	-	-	-	-	-	85
Diploma of Engineering – Technical	MEM50212	157	103	237	102	335	13	-	39	-	72	-	1 058
Advanced Diploma of Engineering	MEM60112	149	353	205	49	176	-	-	-	-	-	-	932
Diploma of Manufacturing Technology	MSA50108	-	6	-	-	-	-	-	-	-	-	-	6
Advanced Diploma of Manufacturing Technology	MSA60108	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Stained Glass and Leadlighting	MSF50113	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Interior Design and Decoration	MSF50213	1 792	608	370	166	138	-	-	87	-	269	47	3 477
Diploma of Furniture Design and Technology	MSF50313	10	<5	-	-	-	-	-	-	-	-	-	14
Diploma of Laboratory Technology	MSL50116	349	337	115	57	147	18	-	-	-	127	-	1 150
Advanced Diploma of Laboratory Operations	MSL60116	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Laboratory Technology	MSL50118	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Laboratory Operations	MSL60118	6	-	9	<5	<5	-	-	-	-	-	-	18
Diploma of Recreational Vehicles	MSM51015	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Production Management	MSM50316	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Sustainable Operations	MSS50116	19	-	32	-	-	-	-	-	-	-	-	51
Diploma of Environmental Monitoring and Technology	MSS50216	20	-	-	-	42	-	-	13	-	82	-	157
Diploma of Competitive Systems and Practices	MSS50316	-	247	5	-	<5	<5	-	-	-	-	-	255
Advanced Diploma of Competitive Systems and Practices	MSS60316	<5	58	-	-	-	-	-	-	-	-	-	59
Diploma of Environmental Monitoring and Technology	MSS50218	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Applied Fashion Design and Merchandising	MST50116	135	293	170	96	81	6	-	22	-	17	-	820
Diploma of Textile Design and Development	MST50216	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Healthcare Documentation	10478NAT	-	1 257	-	-	-	-	-	-	-	-	-	1 257
Diploma of Water Industry Operations	NWP50715	20	-	19	-	-	-	-	-	-	-	-	39
Diploma of Process Plant Technology	PMA50116	35	<5	<5	-	15	-	-	-	-	-	-	53
Diploma of Polymer Technology	PMB50116	19	-	-	-	-	-	-	-	-	-	-	19
Advanced Diploma of Polymer Technology	PMB60116	-	-	-	-	-	-	-	-	-	-	-	0

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Diploma of Manufactured Mineral Products	PMC50116	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Pulp and Paper Process Management	PPM50116	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Procurement and Contracting	PSP50616	103	-	65	10	-	-	13	130	-	-	-	321
Diploma of Government Investigations	PSP50416	46	56	143	-	31	-	-	72	-	-	-	348
Diploma of Government	PSP50116	266	<5	210	61	-	-	-	182	-	-	-	721
Diploma of Public Safety (SES Operations Management)	PUA50412	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Public Safety (Firefighting Management)	PUA50513	80	48	<5	<5	-	<5	-	-	-	-	-	138
Advanced Diploma of Public Safety (Firefighting Management)	PUA60513	-	<5	-	-	-	-	-	-	-	-	-	<5
Diploma of Racing Integrity Management	RGR50218	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Surface Operations Management	RII50115	34	15	<5	<5	95	-	-	-	-	-	-	148
Diploma of Underground Metalliferous Mining Management	RII50215	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Minerals Processing	RII50315	-	-	-	-	<5	-	-	-	-	-	-	2
Diploma of Civil Construction Management	RII50415	<5	<5	67	-	-	-	-	6	-	-	-	77
Diploma of Civil Construction Design	RII50515	150	8	-	-	106	-	-	-	-	-	-	264
Diploma of Drilling Operations	RII50615	<5	-	5	-	<5	-	-	-	-	-	-	9
Diploma of Drilling Oil & Gas (Off shore)	RII50715	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Drilling Oil & Gas	RII50815	<5	-	32	-	-	-	-	-	-	-	-	34
Diploma of Underground Coal Mining Management	RII50915	25	-	<5	-	-	-	-	-	-	-	-	26
Diploma of Well Servicing Operations	RII51015	<5	-	67	-	-	-	-	-	-	-	-	69
Advanced Diploma of Extractive Industries Management	RII60215	54	<5	2	<5	-	-	-	-	-	-	-	59
Advanced Diploma of Underground Coal Mining Management	RII60315	5	-	-	-	-	-	-	-	-	-	-	5
Advanced Diploma of Drilling Management	RII60415	-	-	<5	-	-	<5	-	-	-	-	-	<5
Advanced Diploma of Civil Construction Design	RII60515	6	-	-	-	25	-	-	-	-	-	-	31
Advanced Diploma of Civil Construction	RII60615	<5	-	13	-	-	-	-	<5	-	-	-	17
Advanced Diploma of Surface Coal Mining Management	RII60715	-	-	10	-	-	-	-	-	-	-	-	10
Diploma of Aquaculture	SFI50111	-	-	-	39	15	-	-	-	-	-	-	54

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Diploma of Fishing Operations	SFI50211	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Fisheries Compliance	SFI50411	-	-	-	-	15	-	-	-	-	-	-	15
Diploma of Seafood Processing	SFI50511	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Floristry Design	SFL50115	-	<5	-	-	-	-	-	-	-	-	-	2
Diploma of Beauty Therapy	SHB50115	3 784	1 412	2 198	196	600	23	<5	146	-	-	40	8 403
Diploma of Salon Management	SHB50216	352	27	20	16	<5	-	<5	-	-	-	-	417
Diploma of Retail Leadership	SIR50116	-	10	13	5	5	-	<5	-	-	-	-	34
Diploma of Retail Merchandise Management	SIR50317	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Visual Merchandising	SIR50217	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Outdoor Recreation	SIS50310	20	80	<5	43	-	-	-	-	-	-	-	146
Diploma of Sport Coaching	SIS50512	159	79	6	-	-	-	-	<5	-	-	-	246
Diploma of Sport Development	SIS50612	441	815	400	88	62	<5	<5	18	-	8	<5	1 836
Diploma of Fitness	SIS50215	28	-	12	6	-	-	-	<5	-	-	-	47
Diploma of Sport and Recreation Management	SIS50115	157	153	83	58	62	-	-	-	-	-	3	516
Diploma of Hospitality Management	SIT50416	2 191	3 617	2 515	291	1 263	29	72	81	-	214	52	10 325
Diploma of Travel and Tourism Management	SIT50116	703	274	382	92	62	5	<5	7	-	57	73	1 656
Diploma of Holiday Park and Resort Management	SIT50216	-	31	-	-	7	-	-	-	-	-	-	38
Diploma of Event Management	SIT50316	880	381	393	121	106	7	10	26	-	192	5	2 121
Advanced Diploma of Hospitality Management	SIT60316	2 417	1,337	119	285	170	23	<5	20	-	192	215	4 782
Diploma of Training Design and Development	TAE50216	160	85	469	9	89	-	63	13	-	-	-	888
Diploma of Logistics	TLI50415	399	782	157	<5	16	<5	-	-	-	333	-	1 692
Diploma of Rail Operations Management	TLI50615	21	-	-	-	-	-	-	-	-	-	-	21
Diploma of Deployment Logistics	TLI50515	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Materiel Logistics	TLI50215	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Deployment Logistics	TLI60215	-	-	<5	-	-	-	-	-	-	37	-	38
Advanced Diploma of Materiel Logistics	TLI60115	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of International Freight Forwarding	TLI50316	-	-	111	-	-	-	-	-	-	-	-	111
Diploma of Bus and Coach Operations	TLI50716	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Customs Broking	TLI50816	56	20	288	-	-	-	-	-	-	-	-	364
Diploma of Rail Operations Management	TLI50618	-	-	-	-	-	-	-	-	-	-	-	0

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration	UEE62411	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Air-conditioning and Refrigeration Engineering	UEE62511	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Electrical – Engineering	UEE62211	100	-	94	11	-	-	-	-	-	-	-	205
Advanced Diploma of Electrical Engineering – Coal Mining	UEE62311	17	-	44	-	-	-	-	-	-	-	-	61
Advanced Diploma of Engineering Technology – Electrical	UEE62111	83	286	103	13	220	-	-	-	-	-	-	705
Diploma of Computer Systems Engineering	UEE50111	-	-	<5	40	33	-	-	-	-	-	-	75
Diploma of Electrical and Instrumentation	UEE50211	-	-	44	-	9	-	-	-	-	-	-	53
Diploma of Electrical and Refrigeration and Air-conditioning	UEE50311	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Electrical Engineering	UEE50411	101	-	-	74	<5	-	-	-	-	-	-	178
Diploma of Electronics and Communications Engineering	UEE50511	74	67	29	60	134	-	-	28	-	17	-	409
Diploma of Renewable Energy Engineering	UEE50711	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Research and Development	UEE50811	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Industrial Electronics and Control Engineering	UEE50911	<5	-	-	-	-	-	-	-	-	-	-	<5
Diploma of Instrumentation and Control Engineering	UEE51011	-	-	6	-	-	-	-	-	-	-	-	6
Diploma in Electrical Equipment and Systems Engineering	UEE53011	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Electronics and Communications Engineering	UEE60211	35	118	32	54	-	-	-	-	-	41	-	280
Advanced Diploma of Computer Systems Engineering	UEE60411	-	249	-	<5	-	-	-	-	-	-	-	252
Advanced Diploma of Industrial Electronics and Control Engineering	UEE60611	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Renewable Energy Engineering	UEE60911	-	-	8	-	-	-	-	-	-	-	-	8
Advanced Diploma of Automated Systems Maintenance Engineering	UEE61111	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of Engineering – Explosion Protection	UEE61211	-	<5	5	-	9	-	-	-	-	-	-	15
Advanced Diploma of Instrumentation and Control Engineering	UEE61511	-	-	-	-	-	-	-	-	-	-	-	0

Qualification name	Qual. code	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Aust territories	Overseas	Not known	Total
Advanced Diploma of Engineering Technology – Electronics	UEE61711	8	-	-	-	-	-	-	-	-	-	-	8
Advanced Diploma of Engineering Technology – Computer Systems	UEE61811	<5	-	-	-	-	-	-	-	-	-	-	<5
Advanced Diploma of Engineering Technology – Renewable Energy	UEE62011	-	-	91	-	-	-	-	-	-	222	-	313
Diploma of Gas Supply Industry Operations	UEG50114	-	12	-	-	-	-	-	-	-	-	-	12
Advanced Diploma of Gas Supply Industry Operations	UEG60114	-	-	-	-	-	-	-	-	-	-	-	0
Advanced Diploma of ESI – Power Systems	UET60212	-	<5	-	-	28	-	-	-	-	-	-	30
Diploma of ESI – Power Systems	UET50212	-	<5	-	-	80	-	-	-	-	2 073	-	2 155
Diploma of ESI – Power Systems Operations	UET50312	<5	15	-	-	-	-	-	-	-	-	-	18
Advanced Diploma of ESI – Power Systems Operations	UET60312	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Applied Technologies	22460VIC	-	-	-	-	-	-	-	-	-	-	-	0
Diploma of Civil and Structural Engineering	52725WA	-	-	-	-	116	-	-	-	-	-	-	116

Source: Program enrolments extracted from the National VET Provider Collection, unpublished.

Note: Figures less than 5 are not reported for confidentiality reasons.

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