

# Degree Apprenticeships: Creating the right environment in Australia

Thought Starter

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# Contents

Executive Summary .....	3
What are Degree Apprenticeships? .....	4
Potential benefits .....	4
Australian initiatives .....	6
Systems Engineering (Victoria) .....	6
Electrical Engineering (Queensland and Victoria).....	7
Software Engineering (South Australia).....	8
Higher level apprenticeships .....	8
Models in other countries .....	8
Europe .....	9
England .....	9
Germany.....	10
France .....	11
Sweden .....	11
Northern America .....	12
Other countries .....	13
Barriers to successful implementation .....	14
Titles matter.....	14
Legislation and Industrial Award coverage .....	15
Incompatibility between the two education sectors.....	15
Delivery model is alien to universities.....	16
Hard to tailor to small businesses .....	17
Actions that can facilitate degree apprenticeships.....	19
Short Term Actions .....	19
Provide financial incentives for employers .....	19
Provide incentives for universities to participate .....	19
Fund demonstration projects .....	20
Medium Term Actions.....	20
Progress legislative and industrial changes .....	20
Implement the AQF review .....	20
Foster better articulation arrangements between the two sectors.....	21
Long Term Action .....	21
Better alignment of funding for the two sectors.....	21
Conclusion.....	22

## Executive Summary

Degree apprenticeships have been the subject of recent discussion in Australia, which is likely to become more prominent. Indeed, the Australian Universities Accord Interim Report includes a potential proposal for the final review that explores “pathways which support ‘earning while learning’ models in key industry sectors, such as advanced apprenticeships.<sup>1</sup>”

The term ‘degree apprenticeship’ is relatively new in Australia but the concept itself is not. Companies have been doing similar things for years. Many companies will offer internships to university students especially in the later years of their studies. Cadetships too, which essentially embody the same principle, have been used for many years, although less common in recent times. Even the less-formal model of sponsoring employees to undertake university studies is a regular practice for many companies.

There are benefits that arise from degree apprenticeships, for both the apprentice and the employer. Apprentices have the opportunity to apply their learning immediately within the workplace. Contextual learning can help students understand new concepts more quickly because they can see the application in the work they are doing. Understanding ‘why’ is just as important as understanding ‘what’. Apprentices work alongside experts in the chosen profession, and can observe and question how they apply what they have learnt in real situations. The additional benefit to apprentice is demonstrating years of relevant job experience in their resumes when they graduate.

For employers, there are also benefits. They can help shape their apprentice’s learning to the skills they need in their workplace and can help them develop the employability skills they value. The degree apprenticeship model has also attracted a diverse demographic of candidates in other countries, so the model has the potential to open professions up to a larger number of people.

There have been some early examples of degree apprenticeships in Australia, and these are described below. The model is more common in some other countries and examples of these are also covered in this paper.

There are barriers to implementing degree apprenticeships in Australia. Some are systemic and arise from legislation and industrial award provisions. Some barriers arise because these models are new to universities and require them to make sometimes substantial adjustments to implement properly.

Each barrier brings forward potential solutions. Legislation can be changed. Industrial awards can be updated. But for the model to gain greater acceptance, more pilots are necessary, and this requires a willingness by governments to encourage and provide seed funding to establish momentum. Only then will more universities, more employers and more potential apprentices look at how they can become part of these opportunities.

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<sup>1</sup> Australian Universities Accord Interim Report, p58

## What are Degree Apprenticeships?

Apprenticeships have existed in the world from time immemorial. They are possibly the oldest means of passing on skills from one generation to the next. The Encyclopaedia Britannica notes that the Code of Hammurabi of Babylon, which dates from the 18th century BCE, required artisans to teach their crafts to the next generation<sup>2</sup>. The apprenticeship model that we commonly view as the precursor to our current system dates back to the craft guilds in Europe from the Middle Ages. Each guild was controlled by master craftsmen, who supervised industry standards and also the means by which people could enter their ranks. Typically, a young person would become indentured to a master craftsman for seven years as an apprentice before then rising to becoming a journeyman. Beyond that, he could then aspire to becoming a master craftsman himself.

When we think of apprenticeships, we think of trades, because they were the original jobs an apprenticeship could lead to – original trades like carpenters, metalsmiths, bakers, leatherworkers, weavers, which have evolved to include electricians, plumbers, motor mechanics and aircraft mechanics. Over the years the model has been refined and somewhat shortened, so now in Australia an apprenticeship still includes a contract of training between the apprentice and their employer, but it also now requires completion of an industry-recognised formal training qualification.

The apprenticeship system is well understood by the broader community and is accepted as an excellent way to acquire the skills needed for an occupation because it combines formal training with work that applies those skills over years before they are recognised.

But other occupations outside of trades have also used employment-based models for many years. In Australia, doctors gain provisional registration after completing their medical degree but are required to undertake an internship of 12 months, usually in a public hospital, before being eligible for general registration. Lawyers too need at least 18 months supervised legal practice before they can be issued with a Practising Certificate which then makes them eligible for admission to the Bar Association. These examples highlight that each industry, and the consumer, not only value the skills and knowledge acquired through study but also expect those skills to be applied through work before accepting a person as 'competent' in their chosen profession.

The degree apprenticeship model goes one step further in the training of professionals. Like the traditional apprenticeship, it starts with the employment of a new entrant with no prior training, and provides work in the profession over the years of the training contract, while the apprentice studies at university for their degree. The graduate who completes the degree apprenticeship not only gains a qualification identical to one obtained by a full-time student, but also finishes the program with five or six years of valuable work experience to add to their CV.

### Potential benefits

To consider the potential benefits, we should first go back a step. The traditional way to employ a degree-qualified person is to hire a graduate, either as a full-time employee or

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<sup>2</sup> <https://www.britannica.com/money/topic/apprenticeship>

starting as an intern. Some companies may offer work placements to third or fourth year students with the potential to employ them as full-time workers once they graduate.

A common complaint from employers is that graduates lack employability skills when they arrive at the workplace. These are skills such as communication, working in teams, and understanding business imperatives among others. Intern arrangements and work placements for undergraduates can help to develop those skills. The degree apprenticeship is similar to such arrangements but extends it by offering the apprentice the opportunity to undertake the entire degree while employed in the occupation.

The benefits for the degree apprentice are similar to those undertaking an apprenticeship in a trade. They still complete their formal training at university, learning from highly qualified teachers.

But additional to this formal learning, they are working alongside professionals who have already graduated and are now practising their skills in a real-world environment, dealing with day-to-day challenges, and using their learning and experience to adapt to new situations and find new solutions. Such an arrangement means the degree apprentice is effectively fully immersed in the program; learning the theory at the same time as observing the way it is applied by experts.

A degree apprentice who successfully graduates can point to the same qualification as others, but can also point to years of experience applying that knowledge and working alongside and learning from experts in the field.

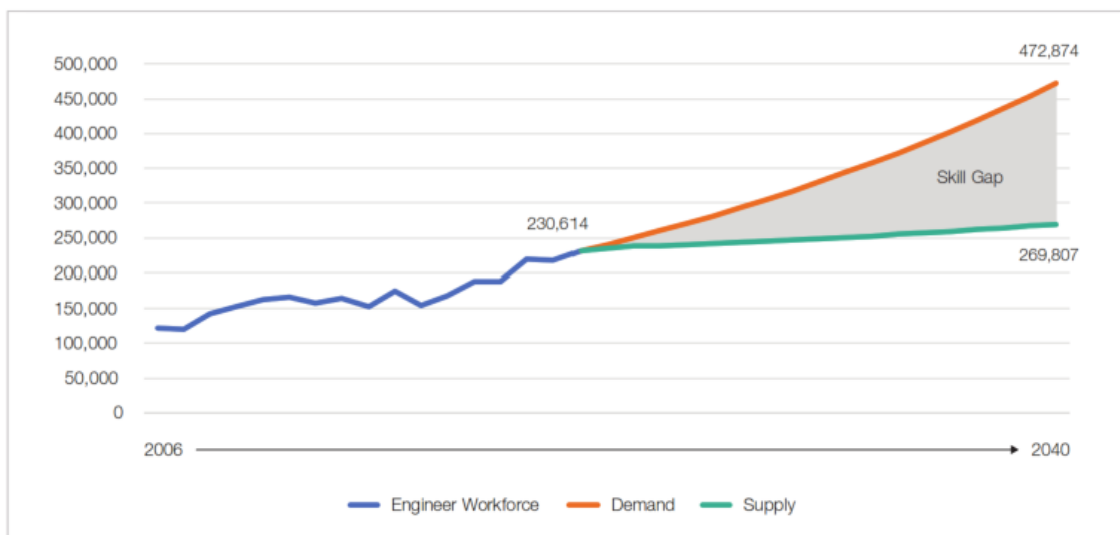
Another benefit that can arise from degree-level apprenticeships is making the training in a profession accessible to people who would not in other circumstances have applied to attend university as a part-time or full-time student. There is a trade-off to attending university, including the opportunity cost of not spending that time in paid employment and the direct cost of undertaking the training, usually in the form of an income contingent loan. Not everybody is in a position to incur that cost, whether it be because they need to earn an income, or they prefer not to take on a debt, or even because there are cultural barriers to them not earning a living. Such people could be more than capable of succeeding in the program, but just not in a position to contemplate doing so.

Companies that have employed degree-level apprentices in other countries have seen that it attracts a broader demographic of people that apply in comparison to graduate-entry programs. This means that opportunities can become available to more diverse groups and increases the number of people interested in a career in the given occupation overall.

For the companies that employ degree apprentices there are other benefits beyond the possibility of meeting equity targets. There are many professional occupations experiencing skills shortages throughout the world, including Australia. One example is professional engineers. The [Skills Priority List](#) includes shortages for most engineering occupations, including chemical engineers, materials engineers, civil engineers, electrical and electronics engineers, mechanical engineers and more.

One report recently released by Professionals Australia<sup>3</sup> estimated that there will be a shortage of 200,000 engineers in Australia by 2040. Not enough people are enrolling in engineering degrees at university to meet the current demand, let alone future needs.

### Projected engineering skills gap, Australia, 2022-2040



Source: The Insight Centre

Alternative ways of attracting new entrants to professional occupations may grow the number of applicants to fill these roles in the future.

Another benefit is that these degree apprentices are absorbed into the organisation from very early in their career, often as soon as they leave school. By the time they graduate, they have years of work experience under their belt, know the organisation well, and know where they fit and where they might progress within the organisation. These people are far more productive than a graduate who starts work after they finish at university.

## Australian initiatives

Ai Group has been at the forefront of a number of initiatives to implement degree apprenticeships in Australia. At the time of writing all are in the development phase.

### Systems Engineering (Victoria)

This is an apprenticeship expected to take approximately five years at the end of which the apprentice will graduate with a Bachelor of Systems Engineering (Hons.) from RMIT University. Systems Engineering is currently not taught at the undergraduate level anywhere in Australia. At the moment it is only available for post-graduate studies.

The expectation is that graduates will be eligible for recognition by Engineers Australia (EA) as a professional engineer. EA is actively involved in development of the project but will only give final approval after the first cohort graduates.

<sup>3</sup> Engineering a Better Future: Australia's Growing Crisis in Engineering Skills, Prepared by The Insight Centre for Professionals Australia, March 2023

The program will operate similarly to an apprenticeship, in that the apprentice is employed full-time for the duration under an employment and training contract. They will be given productive work relevant to and under the supervision of a systems engineer and they will attend university on a part-time basis to complete their formal qualification.

The intention is that the formal training component will be delivered in a similar way to a standard apprenticeship in that they will work for about 80% of the time and devote about 20% of their work time to the university course.

The structure of the program is that apprentices will initially enrol in a VET-level Advanced Diploma of Engineering, expected to run for about two and a half years, and then articulate to the balance of the degree for the rest of the duration. This structure was agreed on advice from Apprenticeships Victoria because the state training authority does not have the legislative power to approve a higher education qualification as an apprenticeship or traineeship. By approving the first component (Advanced Diploma) as a traineeship, employers and apprentices are able to use the National Training Contract and have the contract regulated by the state training authority.

Twelve companies have been involved in developing the education component in collaboration with RMIT University, and reaching agreement about employment arrangements. There was agreement from all participating companies that at least for the initial intakes they would all offer the same working arrangements. These arrangements include wages, the contributions employers will make to the cost of the formal training, and professional development for the apprentice supervisors.

### Electrical Engineering (Queensland and Victoria)

This program is a dual qualification that combines an electrical apprenticeship with an electrical engineering degree and leads to a full electrical license. Many companies have long been interested in employing people with such a profile, but they are rare. The demand is in the industrial sector, while most electricians work in the construction industry and few take up university study after their apprenticeship. As electrical/electronic technology becomes more complex, the need for people with both qualifications is expected to grow.

Graduates of the dual qualification will be eligible for recognition by Engineers Australia as a professional engineer and will be able to apply for a full electrical licence from the state regulator. Both State regulators and Engineers Australia have been represented on the advisory committees.

During the development phase the knowledge component of the two qualifications is being mapped so that any crossovers are identified and a blended qualification that will avoid duplication in the delivery of underpinning theory and content throughout the qualification will be developed. The assessments will also be designed to ensure they meet the requirements of the two separate qualifications. The program duration is expected to take about six years and will be delivered along the lines of an apprenticeship, i.e. equivalent to one day per week.

Funding has been provided by the Queensland and Victorian Governments to develop two separate programs. In Queensland, the qualifications will be delivered in partnership by TAFE Queensland and the University of Southern Queensland. In Victoria, they will be delivered by a partnership between Federation University and NECA Training.

## Software Engineering (South Australia)

Apprentices in this program will complete a Bachelor of Software Engineering (Honours) delivered by the University of South Australia over approximately six years. Graduates will be eligible for recognition by the Australian Computer Society.

South Australia has legislation which supports degree-level apprenticeships. This means the project will seek approval for the qualification to be declared as a higher education vocation. Once approved companies and apprentices will be able to use an approved Training Contract similar to that for VET-level apprentices.

A consortium of companies is working with the university to develop the training program and to agree on employment options.

## Higher level apprenticeships

Several higher level apprenticeship programs have been developed and offered in various states over recent years.

Ai Group initiated the Commonwealth-funded Industry 4.0 higher apprenticeship pilot, which was designed to train prospective technicians in new digital technologies arising from the Internet of Things, such as cloud computing, using big data, networking, machine to machine communications and automation. This apprenticeship combined a VET-level Diploma with an Associate Degree. It was initially piloted in Victoria, but has since been offered in South Australia, Queensland and New South Wales.

PwC offers a higher apprenticeship program that enables learners to complete two VET qualifications aligned to their chosen industry, where they earn a Certificate IV followed by a Diploma, typically in Information Technology or Business. When they complete the Higher Apprenticeship program, they are given the opportunity to join the Graduate program and continue growing at PwC.

Two additional higher apprenticeships have been trialled in Victoria. The Big Build Higher Apprenticeship Pilot is aimed at mid-level managers in engineering, project planning and surveying. These higher apprentices work towards a Diploma of Applied Technologies (Civil Construction), combining on-the-job training with formal study. Victoria's Big Build is the term used to describe the state's investment in infrastructure, roads and railways. The focus is on the civil construction sector with critical future work skills in digital technology and managerial capability.

The Higher Apprenticeships and Traineeships Social Services Extension Project is designed to help grow Victoria's social services workforce and address skills gaps, with 400 funded traineeships for social services workers. The purpose of the project is to give experienced and unrecognised social services workers the opportunity to upskill and gain credentials through a Certificate IV Disability traineeship and to give experienced and emerging social service leaders the opportunity to upskill through an Advanced Diploma of Community Sector Management traineeship.

## Models in other countries

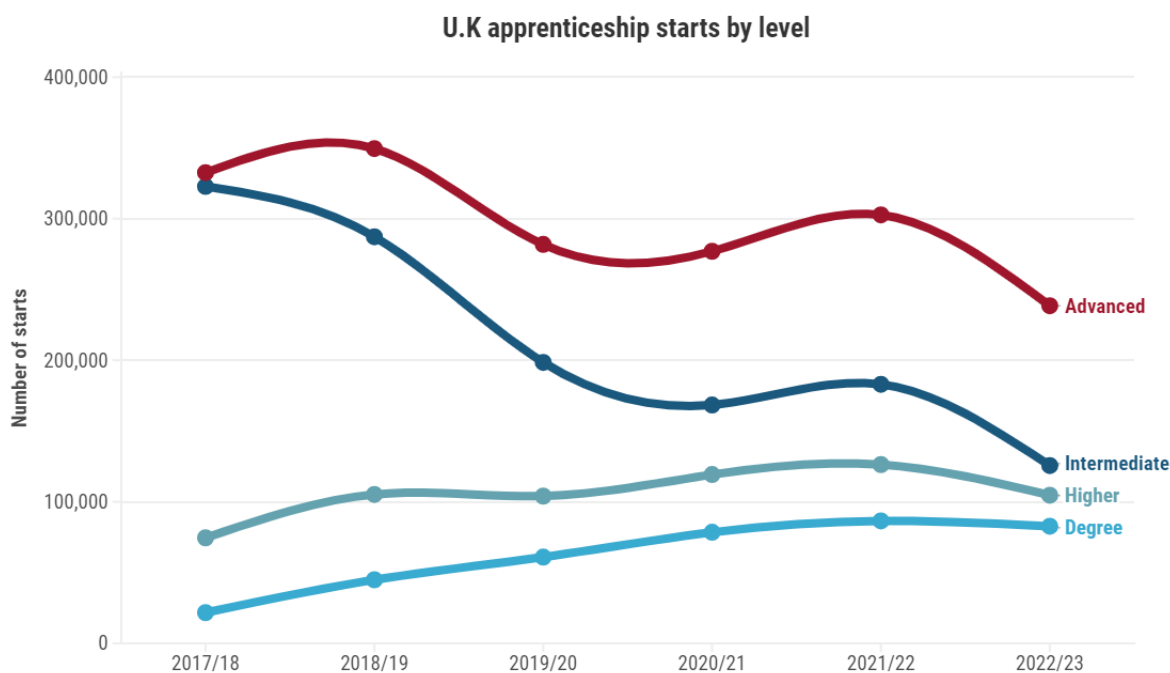
Many countries run higher education programs that operate along the lines of apprenticeships, combining education with work in the same field.



## Europe

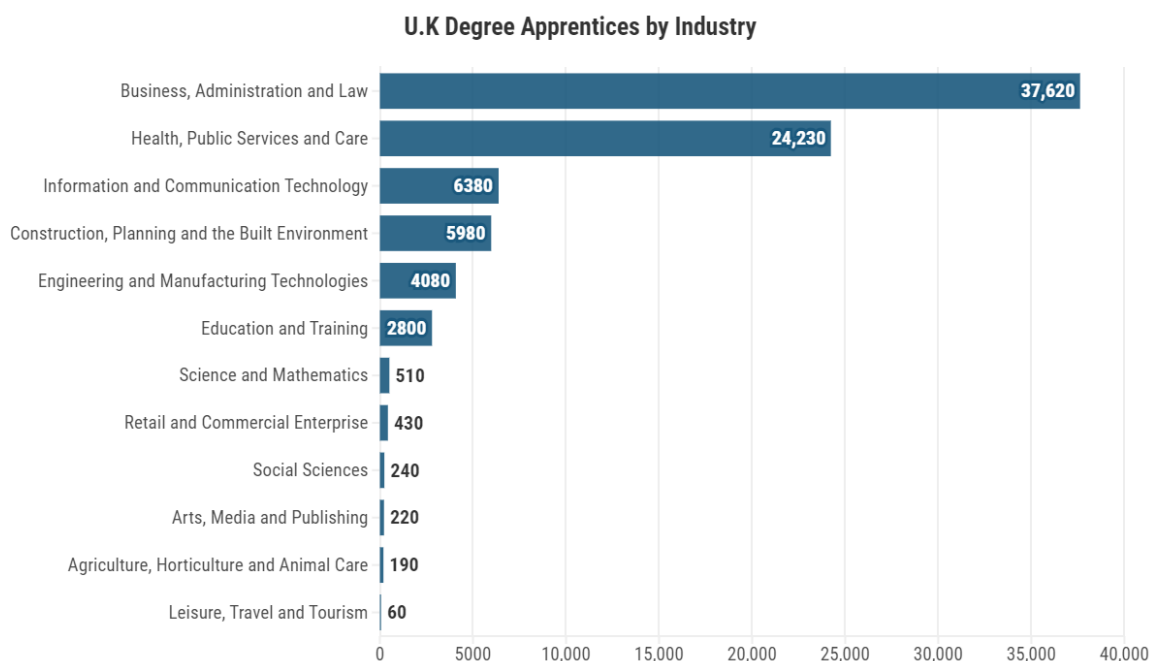
Europe is probably best known for apprenticeships at the higher education level. Many European countries have apprenticeship programs or something equivalent at the higher education level.

England implemented degree apprenticeships in 2016. They are available at the Bachelor's and Master's levels and cover a wide range of industries and occupations, including engineering, science, law marketing, even medical doctors.



Data from the UK Department for Education show that while apprenticeship commencements or starts at the intermediate and advanced levels (broadly equivalent to Certificates III and IV in Australia and including traditional trades) have been declining since 2017/18, numbers at the higher level (comparable to Diploma/Advanced Diploma) and degree level have been steadily growing.

Part of the reason for this growth lies in the way apprenticeships are funded in England. Employers with an annual payroll exceeding £3 million pay an apprenticeship levy of 0.5% of their annual pay. This levy goes to an account which they can use to spend on apprenticeship training. The money expires after two years if they don't spend it on apprenticeships, so there is incentive for companies to expand their apprenticeship offerings beyond the traditional trades to other job roles in their organisation.



The Business, Administration and Law and Health, Public Services and Care sectors dominate degree apprenticeship numbers. Some of the more popular occupations include accountants, managers, nurses, clinical practitioners, social workers, teachers, and police constables.

**Germany** is known for its dual vocational education system. It is characterised by two learning places, the in-company training which covers approximately 70% of the learning time, and the education institutions, which supplement the training with theoretical and general learning content. The primary aim of the apprenticeship is to enable young people to acquire comprehensive vocational competence in a recognised occupation. Competence is demonstrated in exams regulated by law and final exams are geared to the work requirements and processes of the occupation. They are conducted by the chambers of commerce and industry. For this task, the chambers are authorised by the State and are officially acting as a public institution. Upon passing the final examination, apprentices receive a chamber certificate to document that training has been successfully completed. This certification of qualification is fully recognised and highly trusted among employers.

The model has expanded to include higher education programs. “Dual programs” combine a university course with practical training or work experience with an employer. Unlike part-time courses, in a dual program the employment and/or training element is an integral part of the course. People who opt for a dual program of study at a higher education institution, must also sign a contract with an employer. The curriculum is closely connected to the job, and the course is completed in two different places: on the company's premises and at the higher education institution.

Dual study programs can be training-integrated, career-integrated, or practice-integrated:

- **Training-integrated:** The degree program is combined with training in a recognised occupation requiring formal training. Study phases and vocational training are linked in terms of time and content.

- **Practice-integrated:** Study phases alternate with practical phases in a company. The content of the courses at the higher education institution and the content of the practical training are related. Students gain a first degree that qualifies them to practice a profession, but not a qualification in a recognised occupation requiring vocational training.
- **Career-integrated:** Academic studies are combined with vocational further training. The learning content of the two forms of training is also connected in this model. Alongside full-time employment, students learn largely through self-study in a manner similar to a distance learning course.

Programs are offered mainly through Universities of Applied Science and cover a broad range of professional occupations.

## France

Apprenticeship programs in France, known as "apprentissage," are a vital part of the country's vocational education system. They are typically available for individuals aged 16 to 30. However, this age limit may vary based on the sector and the region.

Apprenticeships in France cover a range of academic levels, including:

- **CAP (Certificat d'Aptitude Professionnelle):** This is a vocational certificate program typically taken after completing lower secondary education. It provides basic vocational training and skills for various trades and occupations.
- **Bac Professionnel (Professional Baccalauréat):** This is a vocational high school diploma that prepares students for specific careers. It is generally taken after completing lower secondary education.
- **BTS (Brevet de Technicien Supérieur):** This is a higher education diploma that focuses on specialized technical fields. It is usually taken after obtaining the Bac Professionnel or the general Baccalauréat.
- **DUT (Diplôme Universitaire de Technologie):** This is a higher education diploma awarded by universities and focuses on practical aspects of technical fields.
- **Licence Professionnelle (Professional License):** This is a one-year higher education program that provides practical skills and knowledge in a specific field.
- **Master's Degree:** In recent years, France has expanded its apprenticeship offerings to include master's degree programs in various disciplines. These programs combine academic rigor with practical experience.

The duration of apprenticeships in France can vary depending on the level and field of study. They typically range from one to three years. Apprenticeships cover a wide range of sectors, including construction, manufacturing, hospitality, healthcare, information technology, and more. Each sector has specific training and qualification requirements.

Apprentices in France are paid for their work, and the government provides financial incentives to both employers and apprentices. The goal is to encourage businesses to participate in the apprenticeship system.

## Sweden

In Sweden, the Swedish National Agency for Higher Vocational Education (HVE) regulates HVE programs. Higher vocational education is a post-secondary type of education at EQF

level 5 and 6 (broadly equivalent to the current AQF levels 5 to 7) which can be studied part-time or full-time. Programs combine theoretical and practical studies and function in close cooperation with employers and industry. Workplace training forms an integral part of the programs. There are hundreds of programs available nationally, with the largest numbers offered in the fields of Business Finance, Administration and Sales, and Manufacturing Technology. Other prominent areas include IT, Hospitality and Tourism, Health Care and Agriculture.

HVE programs normally have several periods of workplace training, making up approximately 25% of the program content. Program duration ranges upwards from six months. Most are between one and two years in duration. Duration is specified through HVE-credits, where five credits correspond to one week of full-time studies. 100 HVE-credits correspond to six months of full-time studies, 200 HVE-credits to one year of full-time studies, 400 HVE-credits to two years of full-time studies etc. Students can graduate with a Higher Vocational Education Diploma or an Advanced Higher Vocational Education Diploma. Some programs offer a University of Applied Sciences degree.

## Northern America

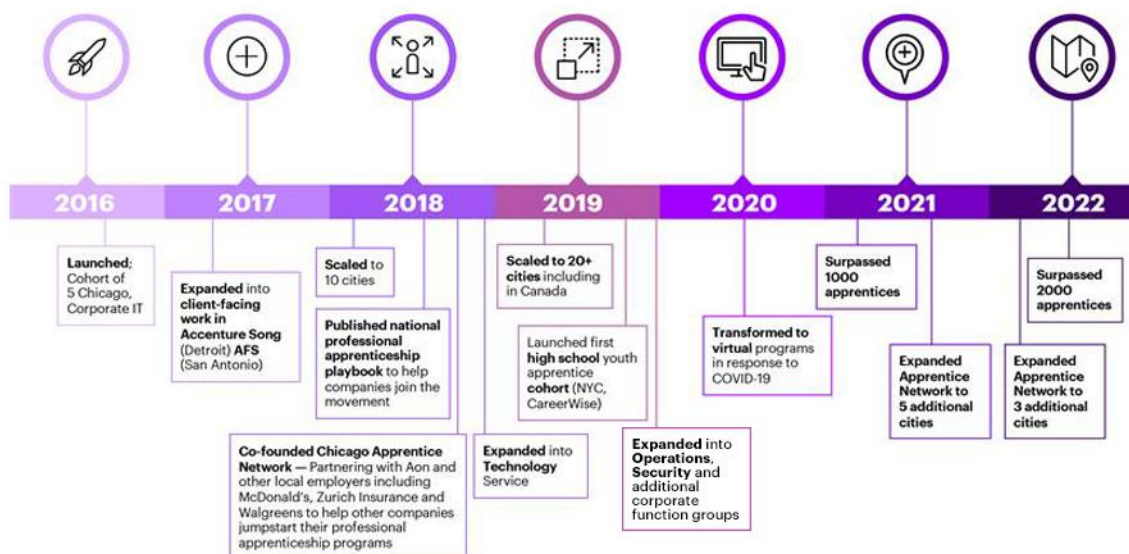
Cooperative Education programs or co-ops, that combine work and study, are common across the USA and Canada. For example, in the USA, the University of Cincinnati operates [co-op programs](#) that allow students to alternate semesters in the classroom with semesters working full-time at a job in their major. This helps them gain experience in their chosen field, and often leads to full-time employment before they graduate. They can also pay some of their college debt while still studying. The university's College of Engineering and Applied Science assigns each student a co-op adviser who helps them search for and apply for jobs. Normally students will complete between three and five co-op semesters while studying, which equates to about 18 months of relevant work experience. The program has been running for more than 100 years, and the College has links to more than 1,300 employers. Many other universities in the USA offer similar programs.

Canada similarly operates Cooperative Education programs. According to [canadian-universities.net](#) there are 80 post-secondary schools that offer co-op programs with over 80,000 students. Most begin in the second year of study, and co-op degrees generally take one year longer to complete than regular degrees, to compensate for the time spent working. Co-op programs are available in a wide range of disciplines including computer science, chemistry, arts, business and management, ecology, engineering and forestry.

Some Australian universities offer degrees similar to the co-op programs in Northern America. For example, Charles Sturt University offers a Bachelor of Technology (Civil)/Master of Engineering (Civil), a double degree that builds engineering expertise over five and a half years including four years of paid work placement while studying online.

In the USA, some individual companies offer apprenticeship programs at the degree level. Accenture is one example of companies that are focussing on [professional apprenticeships](#). Starting with five apprentices in 2016, the company now employs more than 2,000 apprentices across the US and Canada, with roles including cybersecurity, data engineering, and cloud and platform engineering.

## History of Accenture North America Apprenticeship Program



Source: *Apprenticeship Program Resource Guide: Building the future of Talent, Accenture*

Accenture's motivation has been the difficulty in finding applicants for professional roles who have the relevant qualification. Apprenticeships enable them to seek talented people who don't have a degree and train them on the job. This is also helping them to become a more inclusive employer.

Large corporations such as Google, Zurich, Aon and Laing O'Rourke offer apprenticeships in a range of different professions, including engineering, software engineering, data analytics, project management, insurance, human resources and others.

Industry and professional associations are also working with their members to develop professional apprenticeships. For example the American Institute of Certified Practising Accountants has developed an apprenticeship for [finance business partners](#) to help members develop sought-after finance skills and competencies, using a proven earn while you learn model. These models have similarities to Ai Group's experience in Australia, where our membership has enabled us to bring together companies with similar needs to develop industry-wide programs.

### Other countries

In **Singapore**, there is a broad range of degree-level apprenticeships available to choose from, in fields including computing, science, engineering, accountancy, business, early childhood education and human resource management.

Called the [Work-Study Degree](#) (WSDeg), programs are delivered in either of two modes:

- Term-in/Term-out: students alternate between spending one to two terms (or trimesters) in university and at the workplace; or
- Work-day/Study-day: students alternate between working a few days of the week in the partner company, and studying for the remaining days of the week.

Programs involve companies and universities co-designing and co-delivering curricula that closely interconnect theory and practice, as well as co-assessing students' performance at the workplace. Programs are offered by five Singapore universities.

In **Tanzania**, formal apprenticeships were established in 2017 with the support of the ILO. Its success inspired the adoption of the model in banking and finance. Two different degree-level apprenticeships were designed, a Bachelor's in Insurance and Risk Management and a Bachelor's in Banking. The programmes are ranked as National Technical Awards at levels 7 and 8 (Higher Diploma and Bachelor Degree respectively). The ILO has provided capacity building and financial support to enable the recruitment of 212 apprentices, including 108 women<sup>4</sup>.

## Barriers to successful implementation

A number of barriers exist for the successful implementation of degree apprenticeships. Some are unique to Australia, while some are more universal.

### Titles matter

A significant barrier in Australia to expanding apprenticeships beyond the traditional certificate III level concerns the perceptions of what constitutes an apprenticeship. The public perception is that apprenticeships are for 'tradies'. This has been reinforced in the public sphere by governments which make announcements that focus on the traditional trades even though changes to the system often affect all occupations. Industrial awards often differentiate between an apprenticeship applying to trades and traineeships applying to everything else. State governments also differentiate between the two titles.

These perceptions about names have led to the adoption of different nomenclature. Traineeships are used to describe pathways to occupations in the services sectors, but their origin in Australia was as a model to create employment opportunities for disadvantaged youth. This has led to a lingering perception that they are somehow lesser than apprenticeships. The term 'cadetship' has been used from time to time to describe pathways to higher-level occupations.

The name given to programs is important. If we want to describe something new, using familiar terms can help understanding. The term 'degree apprenticeships' is easily understood by the average person. Most people understand that a degree is a university qualification at a bachelor or higher level. Most understand that an apprenticeship involves a combination of formal training with relevant productive work. So 'degree apprenticeships' conveys its meaning without further explanation.

However the use of the term 'apprenticeship' by parts of the training system and by the industrial relations system to denote a pathway to a specific type of job makes it difficult in Australia to use that term for any other employment arrangement. People can be resistant towards expanding the use of the term ("yes, but it's not an apprenticeship"), which leaves proponents to search for other, less meaningful terms.

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<sup>4</sup> Towards lifelong learning and skills for the future of work: Global lessons from innovative apprenticeships, International Labour Organisation, 2023

In the grand scheme of things this is not the highest barrier, but it creates a sense of inauthenticity to degree apprenticeships which does not help with their implementation. Other countries don't appear to suffer from these language barriers.

## Legislation and Industrial Award coverage

Apprenticeships and traineeships are regulated by state governments, through their State Training Authorities (STA). Each state has legislation that governs this regulation (e.g., the Education and Training Reform Act 2006 in Victoria and the Apprenticeship and Traineeship Act 2001 in New South Wales). The legislation enables the STA to declare an occupation or a vocation to be declared as an apprenticeship or traineeship which then enables the STA to regulate the employment and training of apprentices or trainees. Regulating includes ensuring that:

- formal training contracts are signed and registered,
- apprentices and trainees are enrolled in approved formal training,
- the employer provides the apprentice or trainee relevant work, and
- the apprentice or trainee is released from work to attend required training.

South Australia is the only state that has enacted legislation that enables apprenticeships and traineeships to be available at the higher education level. There is no such provision in other states. The consequence of this is that a degree-level apprentice in states other than South Australia is not able to sign a government-approved training contract, and does not fall under the protection of STA inspectors.

The lack of suitable legislation leaves employers to sign their own employment contract with an apprentice. Such a contract still falls under the purview of the Fair Work Commission and the Fair Work Ombudsman, however the apprentice does not have access to specialist support from state training authorities.

Because an approved formal training contract is not able to be signed, employers and apprentices are not eligible for various incentives programs offered by state and Commonwealth governments.

The lack of coverage of degree apprenticeships in industrial awards creates further complications about issues such as pay rates. For those programs already under development in Australia, this has necessitated seeking specialist advice from industrial relations experts about appropriate rates of pay and other conditions of employment. If degree apprenticeships are to gain greater traction in Australia, suitable industrial arrangements will need to be developed.

## Incompatibility between the two education sectors

From an employment perspective, some degree apprenticeships are better served by a pathway that commences with a VET-level qualification that articulates into a higher education degree. For example, the electrical dual qualifications projects under development in Victoria and Queensland combine a Certificate III Trade qualification with a Bachelor degree. This requires the identification of areas of knowledge that are common between the two sectors to make sure underpinning theory is only taught once (although assessed twice). University subjects have a different structure to VET units. A university subject uses learning outcomes that require students to apply principles or theories to achieve an outcome. A VET unit is built on competency, and requires students to meet performance

criteria and provide evidence they have demonstrated the knowledge and skills required by the unit. While not completely foreign to each other, the two systems are sufficiently different to make matching like for like a challenge.

There is also a level of misunderstanding about VET in the higher education sector. Anecdotally, it is evident in statements like 'VET is all about learning how to do things properly. Higher education teaches people how to think'. Such statements are a gross oversimplification of the relationship between the two sectors, and they ignore the fact that knowledge evidence contained in VET competency units can be quite complex. They encapsulate an attitude of higher education towards VET that makes cooperation between the two a challenge.

The higher education system is funded in a different way to the VET system, which also brings challenges. Generally higher education is funded at a substantially higher level. An example is the Diploma of Applied Technologies, the qualification used in Ai Group's Industry 4.0 Higher Apprenticeship pilot. In Victoria it can be undertaken at one education provider as a VET qualification and at another as a higher education qualification. The Victorian Government subsidy for the VET qualification is \$5,590. If it is undertaken as a higher education qualification the Commonwealth contribution for a Diploma taking one year is \$16,969. In addition, the student contribution is \$8,301, making up \$25,270.

These curriculum, attitudinal and funding differences contribute to a perceived primacy of higher education over VET: the view that higher education is more prestigious, and that the big differences in how the two sectors are funded makes VET the junior partner of the two, including within dual sectors institutions.

The current Australian Qualifications Framework (AQF) contributes to this perception that higher education is superior to VET. The hierarchical nature of the AQF places knowledge at a higher level than skills, so a trade qualification that requires a comprehensive understanding of underpinning knowledge as well as mastery of complex skills, is placed four levels below an undergraduate university degree, that requires a greater depth of knowledge but possibly lower levels of skill.

### Delivery model is alien to universities

Apprenticeships are essentially full-time jobs. Apprentices are paid for their time spent at work and their time attending formal training. The model has evolved over the years to equate to approximately 80% of time in productive work, and 20% in training. The two delivery models for most apprenticeships during school terms are four days at work and one day in training, or blocks of one week's training each month. Online delivery or workplace-based delivery of some training has become more common in recent years but most apprenticeship training still entails some face-to-face delivery using the common models.

Employers are familiar with the model of training delivery that apprenticeships usually involve, and will structure their workplace activities to take this into account. TAFEs and private RTOs are also familiar and comfortable with these arrangements and structure their timetabling accordingly. For universities, adapting to this employment-focused timetabling continues to be a major barrier for developing a degree apprenticeship.

Most universities use two semesters of thirteen weeks each for their training delivery. For a full-time student, this involves six hours of face-to-face delivery per subject each week, with four subjects per semester; a total of 24 hour's face-to-face training time spread over a five-



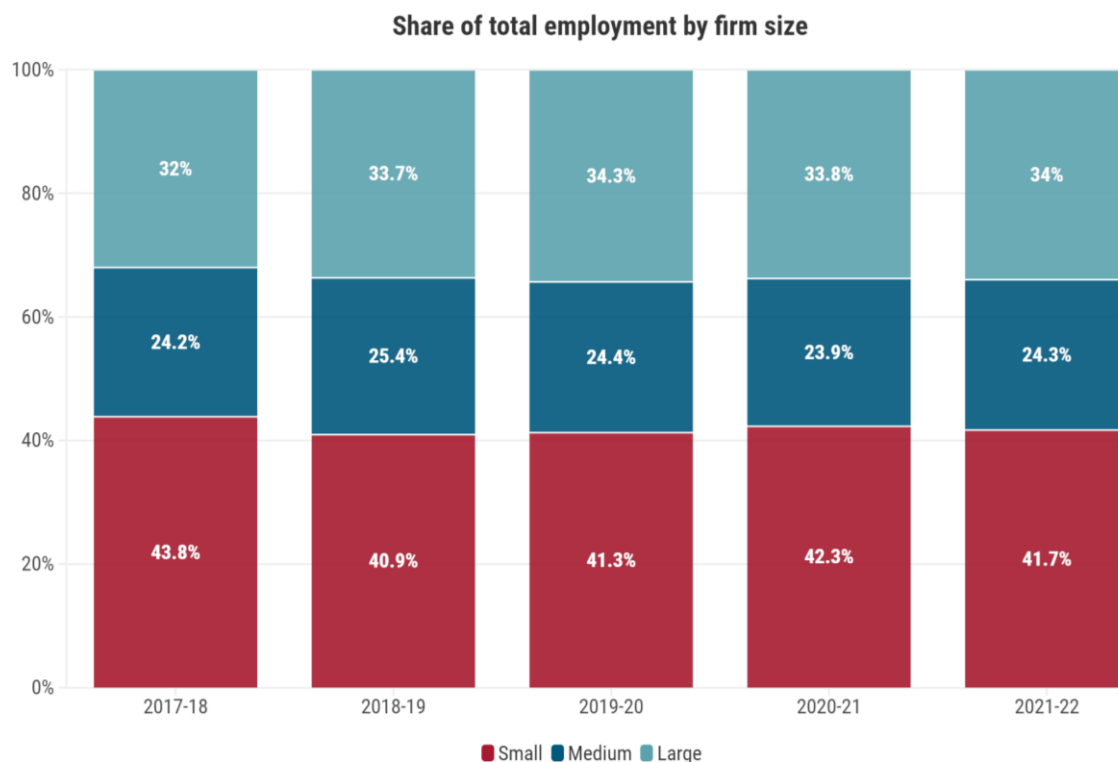
day week. Similar to apprenticeship training, this model has evolved over many years. Students are expected to attend lectures, tutorials and laboratory work when timetabled and to spend the rest of the week undertaking personal study. For part-time students, they have a lighter workload, and may have options to attend evening classes.

The university model does not sit well with an apprentice who works full-time. Attendance expectations for a subject will be spread throughout the week, requiring an apprentice to travel back and forth between work and study. Employers are paying their apprentice to study, but they are also paying them to work, and such an arrangement would not be suitable. Nor would an arrangement where their apprentice is idle (for possibly hours) while waiting between lectures.

If degree apprenticeships are to be sufficiently attractive to employers, the training delivery patterns must allow an apprentice to spend most of their time at work, and preferably consistently spread throughout the year rather than concentrated into 26 weeks. It can be difficult for universities to make these adjustments and sometimes the employment contracts of their teaching staff can make this even more challenging. Unfortunately, if arrangements do not meet the needs of most employers, degree apprenticeships are unlikely to become mainstream.

### Hard to tailor to small businesses

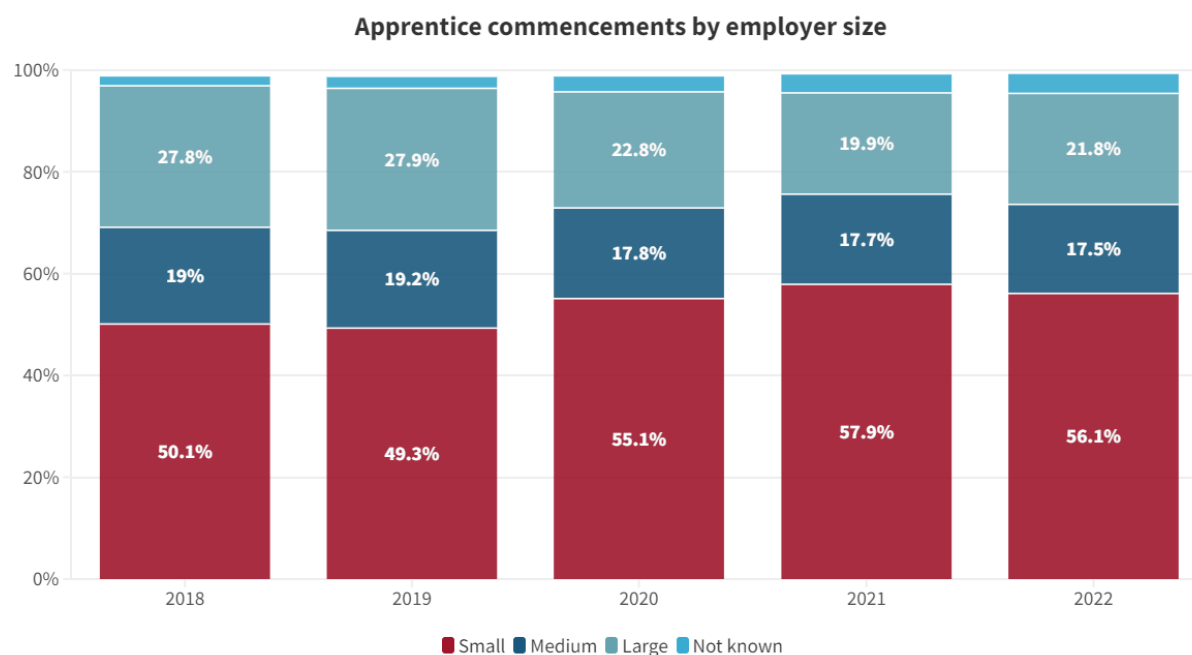
Small and medium enterprises (SMEs) employ most workers and most apprentices. ABS Australian Industry data estimate that about two thirds of workers are employed by SMEs. ABS defines a small business as employing fewer than 20 people, and a medium business as employing less than 200 people.



Source: ABS, Australian Industry

The NCVER in its apprenticeship data collection defines a small business as fewer than 100 employees and medium as between 100 and fewer than 500. Similar to general employment

numbers, SMEs employ around 70% of all apprentices. These data suggest that SMEs should be a key focus if degree apprenticeships are to gain mainstream acceptance. The apprenticeship model, both training arrangements and employment arrangements, needs to meet their needs if they are to display interest.



*Source: NCVET 2023, Apprentices and trainees 2022 - December quarter*

Ai Group’s experience with degree apprenticeships shows that accommodations between universities and employers are easier to achieve if each employer has good numbers of apprentices. Most models under development will require some subjects in the later years of the apprenticeship to be undertaken as workplace-based projects. The university, knowing what the learning outcomes are for a subject, knows how these can be met through project work, and can negotiate with a company over how to adapt some workplace tasks to meet these outcomes. This is much easier to achieve with fewer companies each employing more apprentices. The more employers, and the fewer apprentices with each employer, the more time-consuming this is for the university.

Smaller businesses often can struggle to offer enough breadth in the job for their apprentice to meet the needs of the qualification. This has been a long-standing issue for all apprenticeships, not just those at the degree level. For example, it is common for manufacturing companies that employ apprentice electricians to place them with other employers at certain times to meet the requirements for installing electrical wiring. However, because degree apprenticeships require broad industry experience, this challenge becomes more acute.

A further barrier to the participation of small businesses is cost. There are three factors that contribute to this. One is wage rates; one is the paid time spent away from the workplace; and the third is the student contribution for their education, and whether the employer contributes to this. As mentioned above, the lack of industrial award coverage of degree apprenticeships creates uncertainty about correct wage rates and there is no agency able to advise businesses, especially those that are not members of an employers’ association. In some of the pilots under development in Australia, there is agreement that employers will

contribute some or even all of the student's contribution, usually covered by taking out a FEE-HELP loan. This can be difficult for a small business to agree to, and some have already withdrawn from pilots for that very reason.

## Actions that can facilitate degree apprenticeships

There are a range of actions that can be taken to facilitate the development of more degree-level apprenticeships; some are short-term and straight forward, and others are longer-term and more complex, involving a range of key stakeholders.

### Short Term Actions

#### *Provide financial incentives for employers*

The Commonwealth Government provides financial incentives to employers of apprentices to stimulate employment activity. The rates change over the years from the very generous Boosting Apprenticeships Commencements 50% wage subsidies that were put in place to counter the large drop in numbers resulting from the pandemic, to the current conservative incentive of \$3,500 for an employer of an apprentice working in an occupation not recognised as a skills priority. Sometimes the incentives have only been available for qualifications ranging up to Certificate IV, although currently they are available for all approved apprenticeships.

Apprenticeships for higher education qualifications have not been eligible for incentives at all. Partly the reason is that most states do not have the legislative ability to declare an occupation that requires a higher education degree as an apprenticeship, and this is dealt with below. Partly though, the reason is because degree apprenticeships are new, and incentives have not needed to be considered before now.

If degree apprenticeships are to gain traction and become more popular with employers, an incentive program that recognises their cost and supports their employment and supervision will help to enable this.

#### *Provide incentives for universities to participate*

Universities are multi-million dollar organisations with many dimensions to their operations. Sometimes it can be easier for them to maintain the status quo in some areas. That includes an annual intake of Commonwealth Supported Placement (CSP) students that carry with them direct Government funding and their student contributions, plus the more lucrative intakes of international students who pay full fees.

The degree apprenticeship, which demands a revised delivery model more attuned to the needs of an employer, is a disruptor to the status quo. For a university that is comfortable with its current models there may be no desire to engage with a disruptor that will affect timetables, possibly semester arrangements and possibly employment agreements. The degree apprenticeship may not be suitable for those universities.

But degree apprenticeships CAN be attractive, at least in principle, to those universities that are looking to increase their opportunities for more industry engagement or to find an edge by offering innovative programs. For those universities, an offer of financial incentives, perhaps in the form of additional CSP places, or in direct seed funding, or even in underwriting minimum numbers in the first years of operation, may help them to look more

closely at how they could be involved. The Commonwealth Government is best placed to provide such incentives to universities.

### *Fund demonstration projects*

There is a cost to implementing a new degree apprenticeship. Through its initiation and coordination of projects, Ai Group has found they need to be industry led, which necessitates someone gathering like-minded companies together to agree on a suitable program and agree on what it might look like. Arrangements such as appropriate wage rates, employment and training contracts, and recruitment exercises need to be put in place. Suitable universities need to be sourced and programs need to be developed. Marketing materials and activities need to be developed and implemented.

Many of these activities are one-off costs, but without them programs are unlikely to get off the ground. Our experience has found that providing funding to an organisation to project manage a new program and to a university to develop the new qualification and its delivery model will assist in facilitating a new program's implementation.

## Medium Term Actions

### *Progress legislative and industrial changes*

Apprenticeships are regulated by state and territory governments. Each has the responsibility to declare occupations and qualifications as apprenticeships or traineeships, and each has the responsibility to enforce the operation of the training contract. For most state governments the authority to undertake these responsibilities comes from legislation that relates to VET qualifications only.

South Australia has amended its legislation to allow for higher education apprenticeships and traineeships, but to date no other state has done so. State skills ministers should be encouraged to review their legislation to further enable future degree apprenticeship programs.

As mentioned above, industrial awards are generally silent on arrangements for degree apprenticeships, although some contain provision for cadetships or trainee professionals. This means that wage rates and other conditions of employment are not clear to employers or apprentices. The industrial parties should be tasked with examining relevant awards with a view to expanding their provisions to include degree apprenticeships.

### *Implement the AQF review*

The current Australian Qualifications Framework (AQF) of ten levels of knowledge and skills entrenches a hierarchical approach to learning, privileging the acquisition of knowledge over the acquisition of skills. Contemporary thinking on education and the economy acknowledges the need for a combination of knowledge, skills and capabilities, as well as the need to continue learning over a lifetime.

The AQF Review undertook considerable research including international investigation, and led to a proposal for eight bands for knowledge and six bands for skills. This proposal reflects a complex but important relationship between skills and knowledge. In the current AQF knowledge is privileged over skills, which contributes to the perception that higher education is superior to VET. The review proposes that knowledge and skills are equally valued and the relationship between them is understood in term of the realities and

complexities of learning and the world of work. All jobs require knowledge and skills and their application. Similarly, all jobs at an assigned level/band require a unique and authentic blend of knowledge and skills and their application.

The implementation of a revised AQF will help to alleviate some of the challenges in implementing degree apprenticeships. It will require careful guidance and oversight. The Review recommended the establishment of an AQF governance body. This is a necessary first step to ensure the best possible outcome.

### *Foster better articulation arrangements between the two sectors*

Some of the degree apprenticeships already under development contain a mix of both VET and higher education qualifications. The incompatibility between the two types of qualifications is discussed above. The Interim Report of the Australian Universities Accord<sup>5</sup> noted that many students move in both directions between the higher education and VET sectors during their lifetime. Recognition between the two sectors is not a given and can vary markedly between institutions. Additionally, providing credit for training or learning previously completed can impact funding for the program they are offering.

Actions that can make it simpler for a VET or higher education provider to evaluate the knowledge and skills contained in the other's qualifications and subjects, and to make recognising those qualifications not result in a financial cost to the recognising body, would assist with articulation arrangements.

### Long Term Action

#### *Better alignment of funding for the two sectors*

There is no doubt that the difference in funding for the two sectors can be a barrier for collaboration. Again, the Australian Universities Accord Interim Report calls for funding arrangements to be "more unified and consistent<sup>6</sup>." This will not be an easy task to achieve. The Commonwealth provides funding to higher education, while states and territories fund VET. Furthermore, state governments are not consistent in terms of how they fund VET programs.

Providing better alignment will enable better collaboration, however this will be a long-term process to achieve change.

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<sup>5</sup> Australian Universities Accord Interim Report 2023, page 49

<sup>6</sup> Australian Universities Accord Interim Report 2023, page 49

## Conclusion

Degree apprenticeships are becoming more common throughout the world, as the level of skills all workers need increases and as the value of work-based learning becomes better recognised. Australia has the opportunity to be a leader in fostering these arrangements, not a follower.

The barriers to their implementation are clear, but so too are the solutions. Governments at both the state and Commonwealth levels have a role to play to facilitate degree apprenticeships and help them gain better traction. Industry associations such as Ai Group also have a role to play: to promote opportunities to employers; to coordinate participation in pilots; and to develop suitable employment arrangements in consultation with unions.

Ai Group is willing to collaborate with other organisations to foster more degree apprenticeships. Our hope is that they will expand to become a more widespread alternative pathway for our future workforce.

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