

Industry Skills Forecast and Proposed Schedule of Work

Education

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pwc

Executive summary

Vocational education and training (VET) is the largest education sector in Australia, with 4.2 million enrolments in 2017 (compared to 2.2 million enrolments in primary education, the next largest sector).¹ This scale of learners in the VET sector shows how much of the Australian workforce (over 20 per cent of people in Australia of working age are enrolled in VET)² use this training to prepare for, or progress in, their employment.

The Training and Education (TAE) and Foundation Skills (FSK) Training Packages are critical elements of this training system. The TAE Training Package contains the qualifications and units that prepare trainers and assessors to deliver VET. It is therefore fundamental to providing the workforce for the sector and plays a role in the experience provided to all VET learners. The FSK Training Package specialises in supporting and preparing learners to access education and work opportunities, allowing for pathways into vocational training that would not otherwise be available. The FSK also allows foundation skills support whilst undertaking vocational or on-the-job training.

Given that the VET sector provides training to potential and current workers in almost every industry in the Australian economy, the outlook for the VET sector depends on the employment and skills needs of all other industries. This can lead to a complex and uncertain outlook for the VET sector, with employment levels for vocational education teachers growing in the last year, but the Department of Jobs and Small Business forecasting a contraction in these jobs over the next five years.³ The structural issues with the 'one size fits all' nature of the TAE Training Package raised by stakeholders and detailed in this report may also be contributing to this uncertainty. For example, the Education Industry Reference Committee (IRC) believes the problems in the current Certificate IV in Training and Assessment require attention to better align the content of the qualification with the job role of trainers and assessors.

The Education IRC is in ongoing dialogue with the Australian Industry Skills Committee (AISC) and with the Department of Education and Training regarding the appropriate timing and scope of a review of the TAE Training Package. Given this, and ongoing work in progress on the FSK Training Package, this Industry Skills Forecast and Proposed Schedule of Work does not include any further projects at this time.



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Skills forecast

1 Sector overview

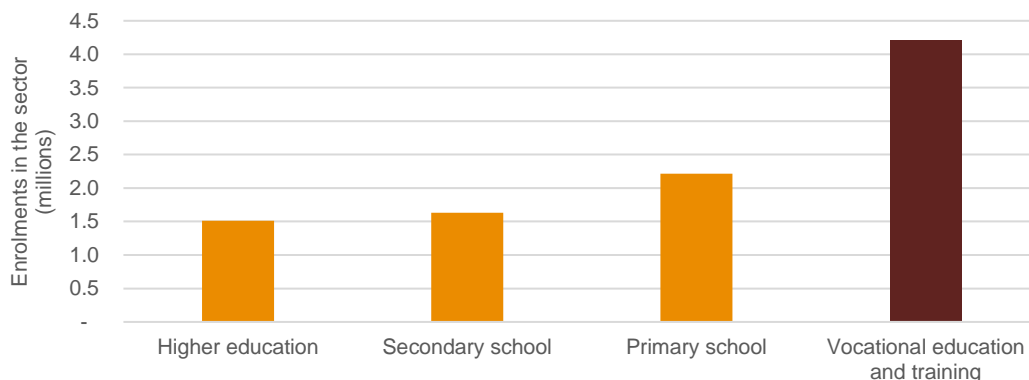
1.1 The sector at a glance

The education industry is broad, encompassing the teaching of primary, secondary, vocational and higher education roles. Within this industry, the vocational education and training (VET) sector contributes to the growth of Australian businesses by preparing workers with the skills that industry needs.⁴

VET has traditionally been distinguished from other training through its competency focus. However, the Federal Government recently announced an expert review of the VET sector, with a focus on how VET could be more effective in providing Australians with life-long skills to succeed in a changing labour market.⁵ The report will be delivered to the Government in March 2019.⁶ As noted in the Bradley Review, ‘there should be better connections across tertiary education and training to meet economic and social needs which are dynamic and not readily defined by sectoral boundaries’.⁷

VET is delivered by trainers and assessors who are prepared through the Training and Education (TAE) Training Package. The importance of this sector, and therefore the role of these trainers and assessors, is reflected in the sheer number of learners. The VET sector educates more learners than the primary, secondary or university sectors (see Figure 1), with over 20 per cent of people in Australia aged 15-65 enrolled in VET in 2017.⁸

Figure 1: Total enrolments by education type, 2017



Source: Australian Bureau of Statistics (2018) *Schools, Australia, 2017*, cat. no. 4221.0; National Centre for Vocational Education Research (NCVER) (2018) *Total VET students and courses 2017*; Department of Education and Training (2018) *Selected Higher Education Statistics – 2017 Student data*

Note: NCVER data on total VET students and enrolments is presented in this figure and throughout this report as the best available data source to size the industry. However, it is used while noting that there are challenges with the reliability of this data and the NCVER is working to improve this data set in to the future.

Some workers in the VET sector will deliver training and assessment as the sole function of their job role, while others may only have training as a small aspect of their role. For individuals in the latter category, they may not directly identify as a vocational trainer and assessor and may not be directly involved with or employed by a Registered Training Organisation (RTO). The complexities with understanding the breadth and size of such a sector are explored in the following sections.

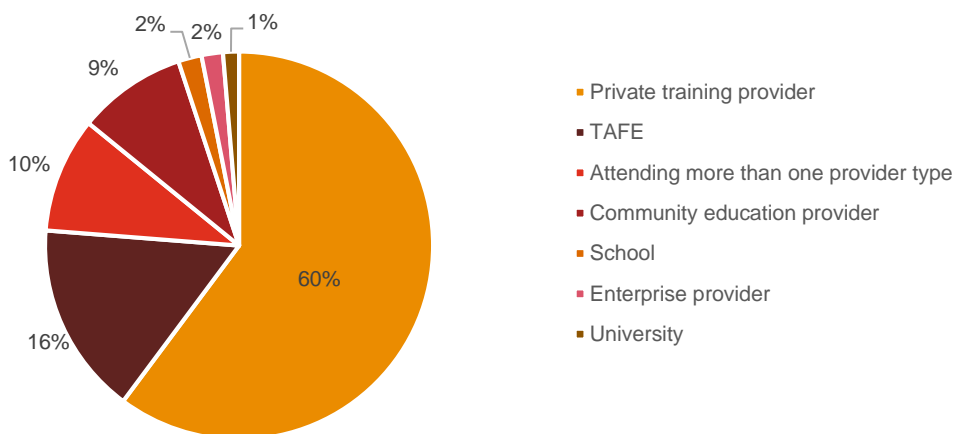
Within the VET sector there is a diverse range of businesses and organisations providing training, such as Technical and Further Education institutions (TAFEs), private training providers, community providers, enterprise providers, as well as schools and universities. This diversity and volume of organisations providing training means that, despite the large number of learners, the provider to learner ratio in the sector is relatively low. For example, in 2017 there were approximately 1,000 learners for every training provider in the VET sector.⁹ This is contrasted with over 8,500 students for every education provider in the higher education sector.¹⁰

This differentiation can be attributed to a number of factors, including regulation and funding,¹¹ as well as the occupation-focused nature of vocational education which requires a degree of specialisation.

A real strength of the VET sector is the diversity of its provider network.
 – Rod Camm, CEDA¹²

Figure 2 shows relative proportions of students studying at each type of provider and a summary of each type of organisation in the sector is set out below. In addition to these major types of providers, training can also be run by professional associations, unions and equipment/product manufacturers (vendors).

Figure 2: VET enrolments by type of provider (2017)



Source: National Centre for Vocational Education Research (2018) *Total VET students and courses 2017*

Private Registered Training Organisations

There were 3,156 private RTOs providing vocational education and training to over 2,549,000 learners across Australia in 2017.¹³ Private RTOs have grown in volume since the early 2000s, as the teaching of VET has moved from being predominantly offered in TAFEs to a greater mix of public and private training organisations. Private RTOs tend to be incorporated and for-profit, but draw from a variety of funding sources. There is limited information available on the private RTO workforce, however, sources indicate the workforce has been highly casualised in the past.¹⁴

Technical and Further Education

There were 41 TAFEs providing training to over 680,000 learners across Australia in 2017.¹⁵ TAFEs are traditionally owned, and sometimes operated, by State and Territory Governments. Whilst TAFEs predominantly offer nationally accredited qualifications from Certificate I to Graduate Diploma qualifications, some also have scope to deliver bachelor degrees and high school qualifications in certain jurisdictions.

Community Registered Training Organisations

There were 442 community RTOs providing training to over 384,000 learners across Australia in 2017.¹⁶ Adult Learning Australia, a peak body for community training, characterises community RTOs as going ‘by a wide variety of names including Community Colleges, Community Learning Centres, Learn Local Providers, Neighbourhood Houses, WEA’s and many more’.¹⁷ Regardless of their title, key characteristics are that they specialise in adult education with a focus on local or regional communities, offer both VET qualifications and non-accredited programs, and are not-for-profit.

Community Colleges Australia (CCA) has noted that a primary concern of community RTOs is funding,¹⁸ particularly given the expense of delivering in regional and remote areas (common for community RTOs) and the minimal resources available for investment in marketing and relationship building to improve the number of work placements and learner outcomes.¹⁹

The workforce of community RTOs has traditionally included some reliance on volunteers.²⁰ However, the role of volunteerism is expected to fall over time,²¹ as CCA has reported that larger student numbers and higher demands of compliance and regulation are raising the complexity of delivering training in the community sub-sector.²²

Schools delivering VET

There were 398 schools providing vocational education and training to over 82,000 learners across Australia in 2017.²³ 'VET delivered in Secondary Schools' programs provide students with training and credits towards a VET qualification. They are designed to expand pathways for students to improve post-compulsory schooling educational outcomes. Some schools are registered as RTOs and deliver VET directly to their students, while others engage external RTOs to deliver VET programs.²⁴

To deliver VET in schools, teachers must hold a secondary education teaching qualification as well as meet the relevant vocational education requirements. Stakeholder commentary suggests increasingly complex and onerous regulations to become an RTO provide a hurdle for schools and teachers.

Enterprise Registered Training Organisations

There were 143 enterprise RTOs (ERTOs) providing training to over 75,000 learners across Australia in 2017.²⁵ ERTOs operate as both training providers and employers. In contrast to other RTOs, the core business of an ERTO is not the teaching of vocational education and training. ERTOs include government (e.g. Department of Defence), non-government private (e.g. McDonalds) and community (e.g. Surf Life Saving Australia) organisations, and represent a variety of industries and business sizes.

Within the ERTO model, training is primarily conducted on the job and assessments are developed in relation to job roles and will not necessarily mirror traditional assessment mechanisms.

The size of the ERTO workforce is especially difficult to estimate as many workers deliver training in addition to their primary vocation, and therefore do not formally identify as trainers. Deliverers of training within ERTOs range from dedicated VET trainers and assessors to other workers (such as team leaders, foremen and supervisors) who deliver the training under the guidance and advice of qualified VET practitioner.

Universities delivering VET

There were 13 universities providing vocational education and training to over 56,000 learners across Australia in 2017.²⁶ Higher education has usually distinguished itself from VET by being curriculum and research based, whereas VET is competency focused. However, the universities that deliver VET qualifications have been assisting in bridging gaps between VET and higher education, therefore allowing more fluid learning pathways for learners. Universities can operate as dual sector institutions by offering both VET and higher education courses, or as non-dual sector universities that administer a separate RTO.

1.2 Training and Education Training Package at a glance

1.2.1 Training Package description and use

There are six qualifications in the Training and Education (TAE) Training Package, ranging from Certificate IV to Graduate Diploma. Of the 4.2 million learners enrolled in vocational education qualifications in 2017, over 42,000 learners were enrolled in the TAE Training Package, comprising one per cent of all learners.²⁷

In 2017, the overwhelming majority of TAE enrolments (91 per cent) were in the Certificate IV in Training and Assessment.²⁸ This suggests that a single qualification is currently endeavouring to meet the needs of a broad range of learners and their employers. However, this is also reflective of the fact that the Certificate IV is currently the single entry-level qualification for the sector and therefore it is not unusual that it represents a high percentage of learner enrolments.

1.2.2 Licensing, regulatory or industry standards

VET is often used to facilitate the completion of compulsory training to obtain a licence or meet certain regulatory requirements. This is particularly important for the TAE Training Package, specifically in meeting requirements for the *Standards for Registered Training Organisations 2015* ('the Standards'). Details of how the TAE Training Package is critical in enabling workers in the sector to meet these requirements are set out briefly below. Note that changes to the Standards come in to effect on 1 April 2019, to reduce the reliance on superseded training products, but are in the structure reflected below.

These standards are administered by Australian Skills Quality Authority (ASQA). It is important to note that design of training, setting of standards and administration of standards are three distinct roles undertaken by different bodies and are not intended to influence each other. However, given that these standards are such a key element to the TAE Training Package, the Education IRC believe it is critical that ASQA and the IRC work together to ensure the Training Package and the standards best meet the needs of the sector in ensuring quality.

Trainer and assessor (general) requirements

Under clauses 1.13 – 1.16 of the Standards, a trainer and assessor must have all of the following:

- a Certificate IV in Training and Assessment or a Diploma or higher level qualification in adult education²⁹
- the vocational competencies at least to the level being delivered and assessed³⁰
- current industry skills directly relevant to the training provided.

Anyone who delivers assessment only (and does not provide training), must hold one or more of the following:³¹

- TAESS00011 Assessor Skill Set
- a Certificate IV in Training and Assessment or a Diploma of higher level qualification in adult education.

Unqualified trainer requirements

Under clause 1.17-1.20 of the Standards, a trainer and assessor can deliver a course without holding a Certificate IV in Training and Assessment if they:

- are supervised by a trainer and assessor
- hold one of the following skill sets – Enterprise Trainer – Mentoring, Enterprise Trainer – Presenting, Enterprise Trainer and Assessor
- have vocational competencies at least to the level being delivered and assessed
- have current industry skills directly relevant to the training and assessment being provided.

These practitioners cannot assess the competency of learners.

Trainer and assessor (delivering training and assessment qualifications) requirements

Under clause 1.21-1.24 of the Standards, a trainer and assessor specialising in the teaching of qualifications under the Training and Education Training Package must both:

- satisfy the requirements in clauses 1.13-1.16 of the Standards
- have a Diploma of Vocational Education and Training or Diploma of Training Design and Development.

Where these requirements are not met, the trainer and assessor may deliver the course under supervision, but may not assess the competencies of learners.

1.2.3 *Employer challenges and opportunities with the TAE Training Package*

Employers are experiencing challenges with the Training Package stemming from a view that it is structured to provide a 'one size fits all' approach to training without addressing needs in different areas.³² Key areas noted for improvement to address this challenge include:

- **Clear signalling of quality.** Stakeholders in the VET industry believe there is a need for better signalling of quality and a shared understanding of employers, learners and VET practitioners as to what good quality delivery of training and assessment involves.
- **Alignment to current job roles.** The Education IRC believes a key challenge with the Training Package is that it offers 'one size fits all' qualifications that are not aligned to the variety of current trainers and assessors. One way that employers can work to achieve this alignment is through supplemental training. In 2017, 82.2 per cent of surveyed employers in the training and education industry had utilised informal training in the last 12 months, a slight increase from 81.3 per cent in 2015.³³ It is acknowledged that the sector will continue to use a range of training options, it is important that these add to, rather than attempt to remediate, VET qualifications.
- **Level of complexity supporting different trainer needs.** The Education IRC believes there is an urgency for employers, and hence the TAE Training Package, to address and meet the ever increasing changing work demands of the twenty-first century. Stakeholders have indicated that some of the content in the current Certificate IV requires an individual to complete the more complex capabilities, regardless of the portability of the skills into their everyday job role. Although TAE skill sets offer an alternative for cohorts such as volunteer workforces that may be unwilling or unable to undertake the complex training encompassed with the qualification, that does not address stakeholders concerns with the core entry level qualification. In addition to that, the Education IRC believe that the TAE Training Package, particularly the Certificate IV, has an opportunity to better reflect current industry requirements. This will strengthen the credibility of the qualification as an industry benchmark with practical application.

1.2.4 *Learner and graduate challenges and opportunities with the TAE Training Package*

Opportunities for graduates are supported by positive reasons to enter the VET sector, with qualified VET practitioners paid more than other graduates and generally privy to good working conditions.³⁴ In particular, opportunities are presented in:

- **Employability.** Over 93.3 per cent of TAE graduates were employed within 6 months of training, compared to 76.9 per cent of all VET graduates.³⁵ The majority of TAE graduates are employed before training and need to have already completed additional qualifications before becoming a qualified VET trainer and assessor. Even accounting for this previous employment, outcomes are still strong for TAE graduates, with 61.4 per cent experiencing some improvement in their employment status after training (compared to 59.3 per cent for all VET graduates).³⁶
- **Flexibility.** The VET workforce is also made up of a high proportion of casual and part-time employment. Depending on the preferences of individual employees, this may act as an incentive or disincentive.³⁷
- **Diversity of opportunities.** As above, trainers and assessors can work in a variety of organisations and many TAE qualification holders do not work directly in the VET sector. Rather, graduates use the qualification to build skills which can be applied in a diverse range of jobs.³⁸
- **Funding environment.** Although VET funding differs on a state and territory basis, the availability of subsidies for VET enrolments represents an opportunity to build a highly skilled

workforce in the sector. A challenge to the sector may be represented where there is regulatory uncertainty or cuts to funding.

1.3 Foundation Skills Training Package at a glance

1.3.1 Training Package description and use

The Education IRC also has coverage of the Foundation Skills (FSK) Training Package, which is designed to provide learners with some of the key skills required to enter or succeed in the workforce or in vocational training, such as core language, literacy and numeracy skills. The FSK Training Package, through its extensive set of over 90 plus units that cover a wide range of foundation skills across different levels of performance, allows flexible and targeted learning support to be implemented when and where needed.

The FSK Training Package currently has three qualifications at the Certificate I and II level, in which there are over 57,000 enrolments.³⁹ The geographic split of enrolments in these qualifications is noticeable higher in Queensland and lower in Victoria than may be expected given the relative populations.⁴⁰ This is believed to be due to the extensive funding available for Queensland foundation skills learners,⁴¹ and the reliance on accredited courses in Victoria.

To demonstrate use of the FSK Training Package by core skill it aims to provide learners with, enrolments by unit of competency are shown in Table 1. In 2017, the top six most enrolled in FSK units were ‘Interact effectively with others at work’ (oral communication), ‘Use routine strategies for work-related learning’ (learning), ‘Use strategies to respond to routine workplace problems’ (learning), ‘Write routine workplace texts’ (writing), ‘Use digital technology for routine workplace tasks’ (digital technology) and ‘Read and respond to routine workplace information’ (reading).⁴² Each of units had over 25,000 enrolments in 2017 and together they make up 40 per cent of total unit enrolments.

Table 1: Enrolments in FSK units of competency by core skill area, 2017

Core skill area	Number of units	2017 enrolments in all units	Average enrolments per unit	Enrolments in most used unit	Enrolments in least used unit
Digital technology	3	39,153	13,051	25,788	5,876
Learning	15	137,383	9,159	29,326	36
Numeracy	39	78,647	2,017	22,264	0
Oral communication	11	65,870	5,988	35,611	56
Reading	12	57,682	4,807	25,552	627
Writing	11	51,100	4,645	25,988	112

Source: NCVER (2018) *Total VET students and courses 2017*

1.3.2 Challenges and opportunities with the FSK Training Package

The FSK Training Package is essential in ensuring that as many people as possible have access to educational and work opportunities. However, feedback from industry and providers strongly indicates that the Training Package is failing to deliver this outcome. Reasons for these prevailing challenges include:

- the foundation skills of Australian adults still need improvement
- uptake of the Training Package has not met original expectations,⁴³ possibly due to issues with Training Package content and structure.

Industry has indicated that the Package requires review to address a number of issues including skills gaps, inconsistencies in delivery, poor visibility of Units of Competencies (UoCs) and the need for clarity of learning outcomes.

Foundation skills of Australian adults

There are an estimated three million adult Australians living with low basic skills.⁴⁴ In particular, 44 per cent of adult Australians have literacy skills lower than what is considered to be required to operate effectively in workplaces and 55 per cent have numeracy skills lower than that level.⁴⁵

An OECD assessment, under the Programme for International Assessment of Adult Competencies, found that 'by international standards, Australia's performance ranges from very good to average. Although these results are not poor, "average" may lead to Australia being left behind in terms of innovation and economic growth by countries that have been more successfully investing in the skills of their people'.⁴⁶

Despite this clear need for enhanced foundation skills, graduates from the FSK Training Package are still facing challenges. Given the role of FSK training in providing pathways, it is unsurprising that the employment rate following training is lower for FSK graduates than typical VET graduates (42 per cent compared to 76.9 per cent).⁴⁷ However, the proportion of graduates in employment or further study is also low (66.5 per cent of FSK graduates compared to 84.9 per cent for all VET).⁴⁸ Given that the FSK Training Package is designed to provide base skills to engage in employment and training, the fact that a third of graduates are neither in employment, nor in training as preparation for employment offers a challenge for this Training Package. This may reflect the complex needs of the learner cohort that FSK training is targeted at, as it is likely that as well as requiring core skills, these learners may also face economic and social barriers to access training or employment.

Issues with Training Package content and structure

Through initial discussions with IRC Chairs and the Education IRC, a consistent theme emerged that Foundation Skills courses are not well understood or being delivered effectively. This raised a range of challenges and opinions including:

- the FSK Training Package and associated material is not fully understood by some training providers leading to lack of use and misperception
- more flexibility is needed in FSK qualifications and the applicability of FSK units to cater for spiky profiled learners (learners with varying levels of competency across different skills areas) and those not yet in the workforce
- there are no FSK skill sets to group core skills to be adopted by industry or used in conjunction with entry level employment
- units are overwhelmingly used as part of FSK qualifications and there is an appetite to encourage the use of units in qualifications in other Training Packages
- some skills gaps exist in the areas of digital literacy and employability skills, but the extent to which these should be met in FSK depend on the progress of future cross-sector work
- feedback from employers given to the IRC indicates that there is not a strong interest to complete the full FSK Training Package, and would prefer units or skill sets that quickly assist in gaining basic Language, Literacy and Numeracy (LLN) skills
- feedback from learners have also suggested to immediately replace the LLN free tools (Foundation Skills Assessment Tool), which the government removed from public use in mid-2018.⁴⁹

Further, the proliferation of accredited courses suggests that the FSK Training Package is not meeting the demands of the market, with RTOs and learners preferring non-Training Package accredited training. We have previously estimated there are 65 accredited courses linked to the Foundation Skills Training Package. This compares with three qualifications in the Training Package itself. No other Training Package that we are aware of displays such an imbalance between Training Package qualifications and accredited courses.

1.3.3 Project update on the review of the FSK Training Package

In response to these challenges, PwC's Skills for Australia and the Education IRC have received early approval for a review of the FSK Training Package. It is important to acknowledge this ongoing work in any overview of the FSK Training Package.

PwC's Skills for Australia made recommendations on the Training Package in its 'Summary Report of Consultation Outcomes' in August 2017. The report outlined the rationale behind recommendations based on consultation with the FSK Project Working Group and open forums held earlier that year.

The recommendations made in the 2017 Summary Report were then expanded upon to determine the specifics of required change and to validate any changes requiring further consultation. A meeting was held in March 2018 with the FSK Project Working Group to discuss these changes, and various subject matter experts have been engaged in the early stages of this consultation work.

Consultation on the draft training product change is now closed and a full Case for Endorsement for the proposed changes is now being developed. This is expected to provide to the Education IRC for approval and submitted to the AISC in 2019.

1.4 Training Package collaboration opportunities

Many of the skills most valued by industry cut across multiple sectors of Australia's economy. Yet training package components are not always developed in a way that recognises the importance of skills in multiple sectors or encourages training products to be used to their full potential in different industry contexts.

The Australian Industry and Skills Committee (AISC) has identified a number of cross-sector skill areas where opportunities exist to create flexible and transferable training package components that will benefit the broader VET sector as well as industry and learners from across multiple sectors of the economy.

Due to the TAE Training Package's unique place in providing the workforce for all vocational education and training, all of the current cross-sector projects have some degree of importance to TAE. PwC's Skills for Australia and the Education IRC will continue to look for, and participate in, opportunities for collaboration across industries where available. Of particular applicability to this sector are the following projects:

- **Consumer engagement through online and social media** will be important for the Education sector due to the growing use of online platforms and digital technology to provide training and to engage learners. There are potential options for synergies between any cross-sector developments and the unit TAELED801 Design pedagogy for e-learning.
- **Digital skills** will be useful for the sector due to the growing demand for VET trainers and assessors to have enhanced digital skills. Digital literacy is critical across all industries, thus it will be essential for VET trainers to have baseline capabilities. Additionally, trainers engaging in digital specific industries will require in-depth capabilities.
- **Inclusion of People with Disability in VET** will be important for the sector as there is a need for VET trainers to have enhanced skills to meet individual learner needs, including learners with disability. It is expected that some units from this project will be housed in the TAE Training Package.
- **Teamwork and communication** skills are taught across all industries and Training Packages. Therefore, this will be important for the VET sector as all VET trainers and assessors will engage with pre-existing units and future iterations. Movement towards common units will assist in ensuring consistency of training, but will require the trainer to nuance the training to the specific sector in which they are teaching.

The Education IRC will continue to seek areas and opportunities for collaboration across sectors.

2 Employment and skills outlook overview

2.1 Employment outlook

As explored above, TAE learners are not necessarily directly involved with or employed by RTOs and may not describe their job role as a VET trainer and assessor. For example, an individual whose primary job role is as an automotive technician may also carry out training in their organisation. The requirement that practitioners retain currency in their field of expertise will also likely lead to workers designating that as their primary occupation, rather than trainer. As such, it is difficult to accurately estimate the size of the VET sector workforce.

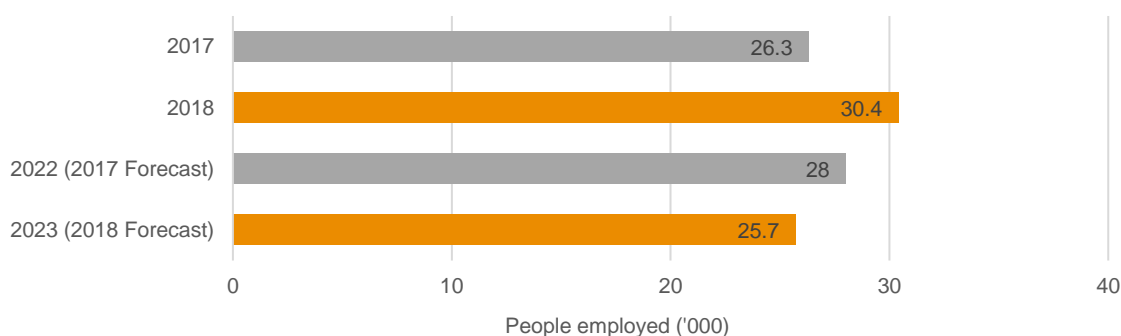
This difficulty in quantifying the size of the VET workforce is well documented with previous estimates of the number of VET trainers and assessors have been anywhere between 24,000 and 700,000.⁵⁰ The National Centre for Vocational Education Research is currently undertaking a study to ‘obtain a more accurate number of trainers and assessors currently within the VET workforce’,⁵¹ due to be released in June 2019.

In absence of this ongoing work, the VET sector employment landscape can be analysed at the occupation level (classified by the Australian Bureau of Statistics under ANZSCO).⁵² All qualifications in the current TAE Training Package are mapped to the ANZSCO category of Vocational Education Teachers.⁵³

Therefore, any current employment outlook analysis is limited in that it does not consider employment growth for managers/directors of RTOs, curriculum and training designers, and several other VET professionals. Despite this limitation, it is our view that the factors driving employment demand for Vocational Education Teachers are likely to have a similar impact on occupations outside this specific definition, making this analysis broadly relevant to all roles in the sector.

Figure 3, below shows the actual and five year forecast levels of employment for Vocational Education Teachers for the last two years. This shows 16 per cent growth in employment between 2017 and 2018, a greater growth than was forecast for five years in 2017.

Figure 3: Projected employment levels for Vocational Education Teachers



Source: Department of Jobs and Small Business (2017) *2017 Occupational Projections – five years to May 2022*; Department of Jobs and Small Business (2018) *2018 Occupational Projections – five years to May 2023*

However, Figure 3 also shows that the current five year forecast is lower than current employment, back in line with 2017 actual employment. This volatility shows the inherent limitations of occupation level forecasts. Although this forecasts a reduction in employment from current levels, the two years of forecasts together show a broadly steady level of employment for trainers and assessors across the medium term. Therefore, although the employment outlook for the education and training sector is

neither conclusively growing nor declining, it is uncertain. Key drivers of this outlook are explored in Section 3. The structural issues with the ‘one size fits all’ nature of the Training Package set out above may also be contributing to this uncertainty and informing a future decrease in employment.

2.2 Skills outlook

2.2.1 Current and emerging skills needs

The level of skill required for workers in the vocational education sector is high.⁵⁴ This is driven by the requirement for contemporary industry expertise, as well as specialist training and assessing skills.

In addition to specialised skills in subject areas, key current competency needs for VET sector workers include:⁵⁵

- identifying individual learner needs, including learning style and language, literacy and numeracy skill needs
- designing and developing learning strategies, resources and programs
- planning, organising and delivering learning in both group based and workplace learning environments
- facilitating of online and face to face learning, including active listening, monitoring and presentation skills
- designing and development of assessment tools
- working and catering for learners with disability
- planning and executing activities and processes to assess competence and participating in validation of assessment
- understanding, implementation of, and compliance with, regulatory changes
- demonstrating an ability to adapt to changes and continuously deliver high quality training
- undertaking and applying research to training practice.

The ability to apply these skills requires VET trainers and assessors to have a developed understanding of the psychology of learning, of different learning styles and the pedagogy of the sector.

The trends that are likely to act as key drivers for change to the VET sector and their implications for emerging skills needs are set out in Section 3 below.

2.2.2 Key generic skills

The IRC is required to rank a supplied list of 12 generic workforce skills in order of importance to relevant employers, shown in Table 1. All the skills listed are important. A low ranking does not imply that low usefulness or importance, but rather only indicates that these skills are not critical priorities for the Education sector. Further, these rankings of importance are presented as an average across the

whole Education sector, some skills may have higher or lower importance for particular organisations and particular sub-sectors.

The IRC's ranking of these generic skills will be confirmed in the final version of this document.

Table 2: Key generic workforce skills to be ranked by the IRC

<i>Rank</i>	<i>Generic workforce skill</i>
1	Learning Agility/Information Literacy/Intellectual Autonomy and Self-Management skills
2	Language, Literacy and Numeracy (LLN) skills
3	Design mindset/Thinking critically/System thinking/Solving problem skills
4	Communication/Collaboration including virtual collaboration/Social intelligence skills
5	Managerial/Leadership skills
6	Technology use and application skills
7	Customer service/Marketing skills
8	Science, Technology, Engineering and Maths (STEM) skills
9	Environmental and Sustainability skills
10	Data analysis skills
11	Financial skills
12	Entrepreneurial skills

Source: Ranking confirmed by IRC members in March 2019

Note: These skills are read in line with definitions provided by the Commonwealth Department of Education and Training.

3 Key drivers for change and proposed responses

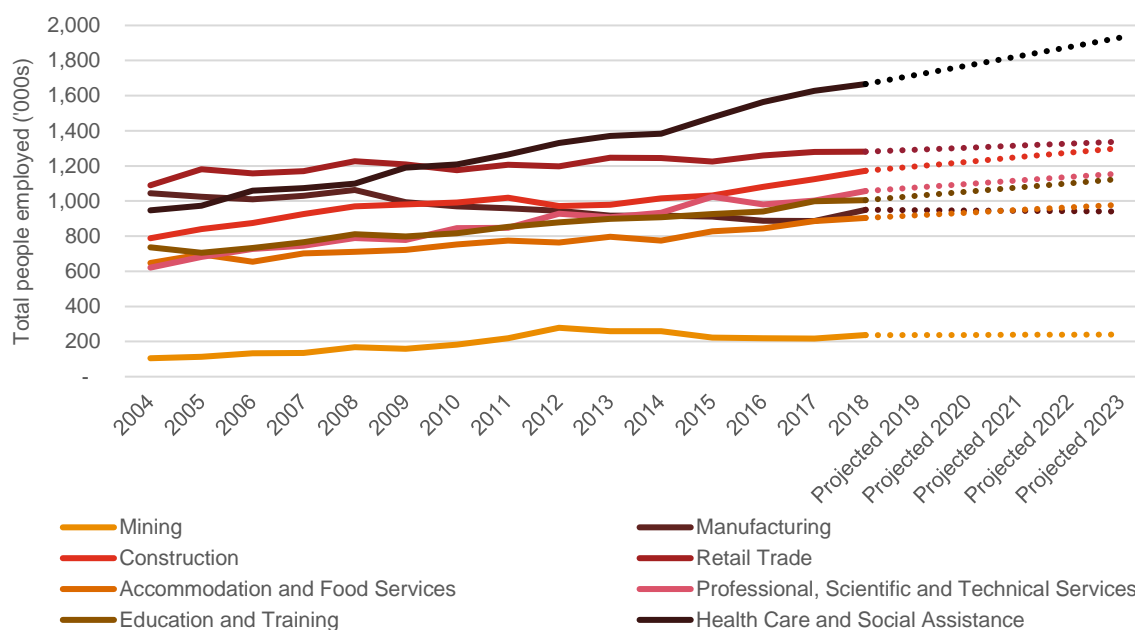
3.1 Key drivers for change overview

This overview of key drivers in the Education sector outlines trends that are likely to present changes, opportunities or threats in the medium term. These trends will lead to movements in the employment landscape (number and nature of jobs available), as well as the skills needed to succeed in those future roles.

3.1.1 Structural economic changes

After a number of decades of economic growth and prosperity on the back of the resources-boom, the Australian economy is adjusting to new demand trends. Figure 4, below, shows particularly strong expected growth in service and knowledge industries, such as health care and social assistance, professional, scientific and technical services, and education and training, as well construction.

Figure 4: Projected employment growth in selected industries



Source: Australia Bureau of Statistics (2018) *Labour Force, Australia, Detailed, Quarterly*, cat. no. 6291.0.55.003 and Department of Jobs and Small Business (2018) *2018 Occupational Projections – five years to May 2023*

This structural change in the balance of industries will be reflected in the skills demanded in the labour market. Key structural and workforce changes that will impact the VET sector include:

- **Contraction and growth of job roles and workplaces in some industries.** Structural change often means that while some industries grow, jobs in some industries will disappear in response to industry decline. Workers in these industries will be required to gain employment in other sectors and may require reskilling to do this.
- **Emerging growth industries.** Growth in services exports (education and tourism), health and social services (including aged care), and some professional services (notably finance and technology services) will mean that many new students will need to be trained to fill positions in these industries.

- **The link between upskilling and income growth.** Australia is in a period of subdued wage growth, during this time of structural change.⁵⁶ Subdued wage growth is expected to continue over the medium term, requiring individuals to enhance their employability and earning capacity through upskilling and education.
- **Automation changing the composition of job roles across industries.** Automation of the workforce has been the subject of substantial discussion in recent years. Committee for Economic Development of Australia research has estimated that up to 40 per cent of Australian jobs – approximately 5 million – are at high risk of being replaced by computers by 2030.⁵⁷ In this environment, it is predicted that jobs that are routine are the most likely to be at risk of automation, whereas non-routine jobs that require creativity and human interaction will be less at risk. As noted by the Head of Economic Analysis Department at the Reserve Bank of Australia, ‘...non-routine jobs have become steadily more important. These jobs tend to be more difficult to automate’.⁵⁸ This is why most research predicts that automation will augment, rather than replace, human job roles. Modelling by AlphaBeta suggested that ‘only 29 per cent of the automation driven workplace change will involve workers changing job roles’, and that, on the whole, workers will stay in their jobs, but that the parameters of tasks within a job role may change.⁵⁹ The implication of automation disrupting the workforce will be in the kinds of skills demanded by employers (as they reduce their requirement for workers completing manual tasks. Therefore, continuous upskilling and reskilling of workers is necessary in order to keep up with advancing automation and digitisation.⁶⁰
- **Workplaces and job roles increasingly becoming flexible.** Across industries, it is becoming increasingly common for workers to contract their skills directly to the market, rather than filling a specific, permanent job role, a practice commonly referred to as the gig economy.⁶¹ While this process facilitates a flexible and mobile workforce that can react to emerging demand trends, it carries the risk of a casualised workforce that does not have the same stability as in the past. This flexibility is increasingly reflected across the workforce as a whole, with movements towards flexible roles and workplaces common throughout industries.
- **Changing nature of work and skills in the twenty-first century.** Research shows that twenty-first century skills requirements have changed compared with the previous century, and new ways of working, reasoning and thinking are required, and that increasingly the new skills interact with technology.⁶² This is often referred to as ‘twenty-first century skills’ or ‘twenty-first century competences’ (Voogt & Pareja Roblin, 2012), ‘global competences’ (OECD, 2016) or ‘the 4th industrial revolution’ (Schwab, 2016). Common is the acknowledgement that across education, government, and business, the skills and knowledge needed to succeed in work, life and citizenship have significantly changed in the twenty-first century.

It will be important to ensure that all learners and workers are prepared for careers, rather than for a single job role, and that they have the right skills to take advantage of emerging opportunities. The VET sector has a critical role to play in enabling this training and ensuring that learners and workers are prepared for future industries and occupations. Additionally, it will be critical that the VET trainer and assessor workforce continues to upskill and seek professional development in order to retain currency.

These structural changes also mean that where there is an increased demand for new workers or upskilling in an industry, there is potential for an increased demand for VET trainers and assessors in those growth industries. Conversely, there may be a reduced demand VET trainers and assessors in slowing industries. Overall, the increasing sophistication of the economy will require VET trainers and assessors to be better skilled and prepared for these changes in the workforce.

3.1.2 Technological advances

In the VET sector, the impact of new and emerging technology is dual faceted. Technological developments are impacting how vocational education material is delivered, thereby impacting the necessary skill requirements of trainers and assessors, whilst simultaneously impacting the content of vocational training, each of which are explored below.

Modes of delivery

Digital platforms are increasingly used in the VET setting to train learners. This is seen through the use of tools such as online assessments and learning materials. E-learning is already widely adopted in the VET sector and new formats are continuing to emerge. In particular, an increasingly important form of upskilling will be ‘nanodegrees’ or ‘micro-credentials’, which are short, online courses that focus on skills for changing work environments, such as programming and STEM skills. The courses are easily adaptable to current skill needs and studies have suggested that ‘digital badges’ of this nature are increasingly recognised as an asset by employers.⁶³

These changes in modes of delivery can bring challenges, especially in the context of the VET sector competency based assessments. These challenges can include the reliable authentication of student’s identity, ability to adapt assessment methods and integrity of evidence (with issues such as plagiarism and inappropriate collaboration).⁶⁴ National Centre for Vocational Education Research (NCVER) is currently undertaking research, due to be published in August 2019, in to online learning in Australia and the quality, effectiveness and student outcomes of VET courses that are being delivered completely online.⁶⁵

The use of technology to deliver course content requires changes the way VET practitioners engage with learners and the skills they need. VET sector workers will need to be digitally literate so that they can practically facilitate digital learning, but also that they understand e-learning pedagogy so as to appropriately employ digital learning strategies. As technology continues to evolve, workers will need to adopt continuous learning strategies in order to maintain digital skill currency.

Increased technological training content

Digital skills are almost universally required by employers with a 2018 report by Microsoft noted that ‘digital skills are the fastest growing proficiencies sought by Australian employers’ and that ‘about 90 per cent of jobs today require basic digital skills such as sending emails, finding information on the internet and using a word processor’.⁶⁶ Therefore, there is a present and growing demand for learners to be taught digital and technology-based skills in the VET environment. It will be critical that VET trainers and assessors have the appropriate skills to train learners in these areas. While not all VET trainers and assessors will be required to be digital experts, baseline digital capabilities will be required for all.

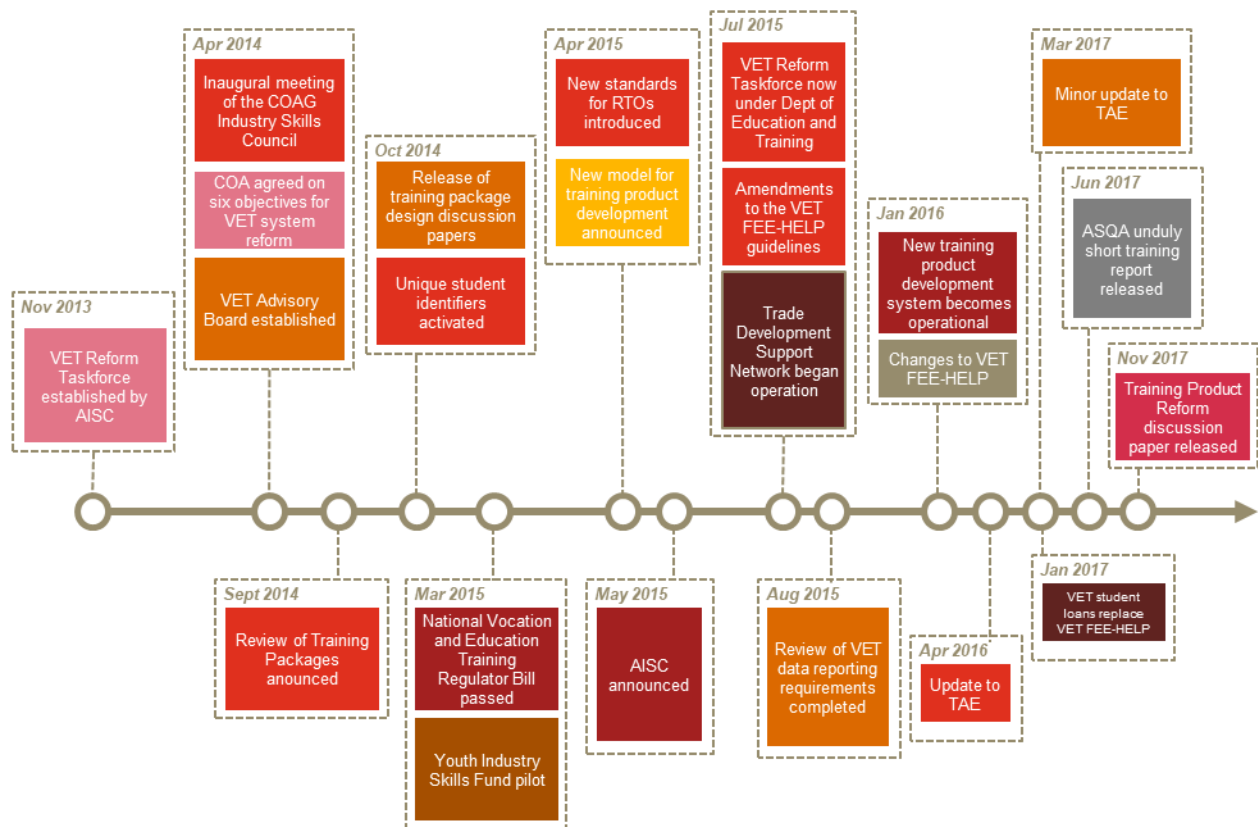
The future skills needs of the VET workforce to adapt to these technological advances include:

- digital fluency and strategies for continuous learning to maintain digital currency
- numeracy and computational skills of VET trainers and assessors, as these skills provide a foundation for the attainment of digital fluency and other STEM skills
- ability to deliver materials through e-learning and to assess online learning, including the ability to make resources and assessments available online, deliver training sessions online and facilitate a collaborative online learning environment
- ability to teach basic digital skills as a part of industry specific training.

3.1.3 Regulatory reform

The regulatory and policy environment pertaining to the VET sector is complicated, with numerous layers of State and Federal regulation and standards. This creates a complex operating environment for organisations as well as individual trainers and assessors who must stay abreast of varying requirements. Additionally, as outlined in Figure 5, the sector has been subject to persistent reform to ‘improve the quality, job outcomes and status of VET’, although this reform has never been in the form of a wholesale, national review.⁶⁷

Figure 5: Vocational education reform timeline



Source: NCVER (2018) *Timeline of Australian VET policy initiatives 1998-2017*, available at <<https://www.voced.edu.au/vet-knowledge-bank-timeline-australian-vet-policy-initiatives-1998-2017>>

This constant cycle of reform, explicitly within the ambit of the TAE Training Package, as well as more broadly, could impact the VET workforce as follows:

- **Job security.** Existing trainers and assessors may leave the sector if they are unable or do not want to maintain currency in accordance with new and emerging standards. This is supported by IRC testimony that there is likely to be a decrease in workers in the sector as of April 2019 when the ‘teach-out’ period for the additional assessment credential requirements within the TAE40116 expires.
- **Diminishing training and assessment quality.** As RTOs focus their resources and funds on meeting regulatory requirements, there is potential for compliance to be prioritised over quality training. If this occurs, it could lead to a cycle of the training package continuously being used as a regulatory tool, rather than a source of training quality and cause a lack of skill currency and quality of trainers and assessors involved in the Australian vocational setting.⁶⁸
- **Continuous upskilling.** VET trainers and assessors will need to adopt practices of lifelong learning and upskilling to ensure they stay up to date with changing regulatory and skill requirements, but also to continue learning and support their professional development. This can ensure that the VET workforce has the capability required to understand and deliver high quality standards.

It is relevant to note that the cycle of reform in the VET sector and the TAE Training Package is not unique to these sectors. Reform is commonplace across industries and regulatory reforms may not have a strong influence upon VET trainers and assessors who are already appropriately skilled, qualified and continue to develop their skills.

3.1.4 Learner cohort changes

The broad engagement in VET (set out in Section 1) demonstrates a positive recognition of the value VET provides to learners, workers and industries. However, the inherent diversity in such a large group of learners has implications for VET trainers and assessors who are required to meet a wide array of learner needs. This can pose challenges for trainers that are seeking to meet a range of individual learner needs in a common environment. A 2017 OECD Skills Study stated that ‘Australian post-secondary VET is inclusive and caters to a very diverse population. Whilst this is a strength, it can be challenging to address the needs of a very diverse population’.⁶⁹

Key trends that are changing the composition and characteristics of the VET learner cohort are outlined below.

- **International learner growth.** Education is a key Australian services export. In October 2018, there were almost 840,000 international learner enrolments in Australia.⁷⁰ VET represented 27 per cent of these learners.⁷¹ VET international enrolments grew 14 per cent from the previous year, the equal fastest growing sector with Higher Education.⁷² Demand for VET from overseas is expected to grow in the coming years, with increasing trends in number of students from Brazil, China, India, Malaysia, Nepal and the Philippines.⁷³
- **Reskilling and upskilling across industries.** Changing job requirements are leading to a greater demand for existing workers to gain new skills. This is likely to result in a learner cohort that encompasses a variety of ages, backgrounds and experiences.
- **Changing skill base of young learners.** Commentary from industry stakeholders frequently references the changing needs and characteristics of present-day learners. For example, modern learners typically hold greater digital literacy skills than the learners in the past. This is due to the influence of technology in the childhood environments of the younger learners.
- **High engagement of diverse learner groups.** VET is more heavily utilised by diverse learner groups. For example, in 2017, 3.4 per cent of VET learners were Indigenous (over 140,000 learners), compared to 1.4 per cent of higher education students, and 4.2 per cent of VET learners had a disability (almost 180,000 learners).⁷⁴
- **Learners with a global mindset.** The Australian economy is increasingly bound to the global economy and there are growing opportunities for the international transfer of people and skills. Learners require education and training that is transferable across borders to ensure they can participate in a shared global economy. This is reflected in the Training Package Quality Principles which seek the portability of skills and competencies, including promoting national and international mobility.

This increasing diversity requires VET practitioners to have the capabilities to understand individual learner needs and implement person-centred strategies to meet them. This requires an emphasis on interpersonal skills in the midst of the technical application of training and assessment capabilities.

3.2 Proposed responses

As previously established, the Education IRC is in ongoing dialogue with the AISC and the Department of Education and Training regarding the appropriate timing and scope of a review of the TAE Training Package. Given this, and ongoing work in progress on the FSK Training Package, this Industry Skills Forecast and Proposed Schedule of Work does not include any further projects at this time.

4 Consultation undertaken

Given that this Industry Skills Forecast does not include any new proposed work on either the TAE or FSK Training Package, consultation on the content has been included in, and informed by, PwC's Skills for Australia ongoing work engaging with employers, trainers, learners and the Education IRC.

Consultation on this Industry Skills Forecast also included comment and review by state and territory education authorities and being published for public comment. This document reflects the key issues and sensitivities raised by those stakeholders throughout.



*Proposed Schedule
of Work*

5 Proposed Schedule of Work overview

PwC's Skills for Australia works in an ongoing manner to ensure that training provided in the TAE and FSK Training Packages are fit for purpose and that workers in the Education sector have the skills required to adapt to these key drivers for change. Details of all previous and current projects can be found on the Education industry page on the PwC's Skills for Australia website.

Ongoing work is in progress on the FSK Training Package, which is currently in the Training Product Development stage (as outlined in Section 1.3.3). Additionally, the Education IRC is currently in dialogue with AISC and with the Department of Education and Training regarding the appropriate timing and scope of a review of the TAE Training Package. Given this, the proposed schedule of work for the next four years currently has no additional proposed projects.

It is important to note that through the projects across the four years from 2016-17 to 2019-20, all units of competency in both FSK and TAE Training Packages will be reviewed, either through a project (where they are added, edited or removed) or in assessing if they are relevant for a project (and were found to not require editing or deletion).

However, it is also acknowledged that training needs to be adaptable and flexible. Therefore, if any significant but unforeseen technological, regulatory or other changes impact the sector, additional projects may be proposed out of cycle as needed, or, depending on urgency, within the cases for change for 2020-21 and onwards.

6 *IRC Sign off*

The Industry Skills Forecast and Proposed Schedule of Work was agreed to by:

A handwritten signature in black ink, appearing to be 'Andrew Shea', written over a faint rectangular grid background.

Andrew Shea
Chair
Education IRC

27/03/2019



Appendices

Appendix A

Administrative Information

About PwC's Skills for Australia

PwC's Skills for Australia supports the Education IRC. As a Skills Service Organisation (SSO), PwC's Skills for Australia is responsible for working with industry and our IRC to:

- Research what skills are needed in our industries and businesses, both now and in the future, to provide the right skills to match our job needs; helping us to stay at the forefront of global competitiveness and support continued economic prosperity.
- Identify and understand current and emerging trends in the global and domestic economy and how they impact on Australia's skills needs.
- Revise our vocational qualifications and training content to better match what people will learn with the skills needs of our industries and businesses, giving our population the best possible chance of developing work ready skills.

About the Industry Reference Committee

The Education IRC includes 14 members. The Education IRC Membership was constituted in 2017 by the AISC. The 2019 Industry Skills Forecast and Proposed Schedule of Work was reviewed and approved by the membership below in April 2019.

Table 3: Education IRC membership

Name	Organisation	Title	IRC role
Andrew Shea	Australian Council for Private Education and Training (ACPET)	Director	IRC Chair
Elisa Uyen	Pivot Institute	CEO	IRC Deputy Chair
Berwyn Clayton	Victoria University	Emeritus Professor, College of Arts and Education	IRC Member
Chris Butler	Enterprise RTO Association	President	IRC Member
Christine Robertson	Holmesglen Institute	Executive Director, Quality and Performance	IRC Member
Daniella Mayer	Australian Council for Adult Literacy (ACAL)	Vice-President	IRC Member
Daryl Sutton	Victorian Curriculum & Assessment Authority (VCAA)	Manager - Vocational Education	IRC Member
David Tout	Australian Council for Educational Research (ACER)	Manager - VET and Senior Researcher	IRC Member
Erica Smith	Federation University	Professor and Personal Chair in Vocational Education and Training	IRC Member
Jenny Fitzgibbon	Training that FITZ	Manager/Consultant	IRC Member
Jo Pyne	TAFE Queensland	General Manager	IRC Member
Paolo Damante	Australian Industry Group	Senior Policy Officer, Education and Training	IRC Member
Robyn Culbert	Salvation Army	Quality Education Manager, Eva Burrows College	IRC Member
Sandra Walls	Box Hill Institute	Acting Executive Director Academic Affairs (VET and HE)	IRC Member

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- ¹ Australian Bureau of Statistics (ABS) (2018) *Schools, Australia, 2017*, cat. no. 4221.0; National Centre for Vocational Education Research (2018) *Total VET students and courses 2017*; Department of Education and Training (2018) *Selected Higher Education Statistics – 2017 Student data*
- ² National Centre for Vocational Education Research (NCVER) (2018) *Total VET Students and Courses 2017*; ABS (2018) *Australian Demographic Statistics*, cat. no. 3101.0
- ³ Department of Jobs and Small Business (2017) *2017 Occupational Projections – five years to May 2022* and Department of Jobs and Small Business (2018) *2018 Occupational Projections – five years to May 2023* Productivity Commission (2011) *Vocational Education and Training Workforce – Research report*
- ⁴ Productivity Commission (2011) *Vocational Education and Training Workforce – Research report*
- ⁵ Prime Minister of Australia (2018) *Delivering skilled workers for a stronger economy, Media release 28 Nov 2018*
- ⁶ Department of Education and Training (DET) (2018) *VET Review*, available at <<https://www.education.gov.au/vet-review>>
- ⁷ NCVER (2018) *Total VET Students and Courses 2017*. Note: learners enrolled in the VET sector will include secondary learners in VET, therefore, there may be some overlap of secondary student enrolments
- ⁸ NCVER (2018) *Total VET Students and Courses 2017*; ABS (2018) *Australian Demographic Statistics*, cat. no. 3101.0
- ⁹ NCVER (2018) *Total VET Students and Courses 2017*, with 4,193 providers delivering training to 4.2 million students
- ¹⁰ DET (2018) *VET Skills for Growth*
- ¹¹ IBISWorld (2019) *Education and training*. Note: The VET Student Loan scheme has likely constrained growth in enrolments in VET courses due to lower loan caps compared with the previous VET FEE-HELP scheme. On the other hand, the wider education and training industry has grown strongly over the past five years, largely due to steady demand growth and higher government funding.
- ¹² CEDA (2016) *VET: securing skills for growth*
- ¹³ NCVER (2018) *Total VET Students and Courses 2017*
- ¹⁴ Productivity Commission (2011) *Research Report - Vocational Education and Training Workforce*
- ¹⁵ NCVER (2018) *Total VET Students and Courses 2017*
- ¹⁶ NCVER (2018) *Total VET Students and Courses 2017*
- ¹⁷ Adult Learning Australia (2018) *Community education and training*, available at <<http://communityeducation.net.au/about-community-education-and-training/community-education-and-training/>>
- ¹⁸ Community Colleges Australia (2018) *The Year in Review 2018*, available at <<https://cca.edu.au/community-colleges-australia-the-year-in-review-2018/>>
- ¹⁹ Community Colleges Australia (2016) *More Art than Pottery: Community Education Providers' involvement in work-based learning and foundation skills*
- ²⁰ Productivity Commission (2011) *Research Report - Vocational Education and Training Workforce*
- ²¹ ABS (2015) *General Social Survey Summary Results Australia 2014*, cat. no. 4159.0
- ²² Community Colleges Australia (2018) *The Year in Review 2018*. Note: CCA released its Statement on the Commonwealth Government's VET Student Loans scheme in March, concluding that the program discriminates against not-for-profit community education providers of VET because the way the guidelines are written and how the policy reporting does not differentiate between for-profit private and not-for-profit community providers
- ²³ NCVER (2018) *Total VET Students and Courses 2017*. Note that this only includes schools that are registered training organisations, so the total number of schools practically delivering VET is likely to be higher as would include schools that deliver VET in partnership with an established RTO
- ²⁴ Victorian Department of Education and Training (2018) *VET Programs for Secondary Students*
- ²⁵ NCVER (2018) *Total VET Students and Courses 2017*
- ²⁶ NCVER (2018) *Total VET Students and Courses 2017*
- ²⁷ NCVER (2018) *Total VET Students and Courses 2017*, all enrolments in current and superseded qualifications
- ²⁸ NCVER (2018) *Total VET students and courses 2017*
- ²⁹ From 1 January 2016, it is no longer sufficient to demonstrate completion of equivalent competencies to those in the Certificate IV in Training and Assessment
- ³⁰ For example, if teaching Certificate III in Financial Services, the trainer and assessor must have completed a Certificate III in Financial Services or higher
- ³¹ Note that Standard 1.15 in Part of the 2015 Standards will be altered as of 31 March 2019 to reduce reliance on superseded training products
- ³² Ongoing stakeholder consultation and surveys such as NCVER (2017) *Survey of Employers' Use and View of the VET system 2017*
- ³³ Informal training is defined for the purpose of the NCVER *Employers' use and views of the VET system 2017*, as 'training that usually occurs on the job through interactions with co-workers as part of the day-to-day work'
- ³⁴ NCVER (2018) *Total VET graduate outcomes 2018, salaries and jobs*. Note: In 2017, Training and Education VET graduates received an average annual salary of \$75,100, after graduation, compared to an average of \$55,000 for all VET graduates
- ³⁵ NCVER (2018) *VET graduate outcomes 2018*
- ³⁶ NCVER (2018) *VET graduate outcomes 2018*
- ³⁷ Productivity Commission (2011) *Review of the VET Workforce*. Note: A highly casualised workforce was found in 2011, anecdotal evidence suggests that this remains the case. A survey of the current VET workforce is underway and is estimated to publish up to date numbers in June 2019.
- ³⁸ NCVER (2018) *VET graduate outcomes 2018*
- ³⁹ NCVER (2018) *Total VET Students and Courses 2017*
- ⁴⁰ NCVER (2018) *Total VET Students and Courses 2017*
- ⁴¹ Department of Employment, Small Business and Training (2018) *Foundation skills*
- ⁴² NCVER (2018) *Total VET Students and Courses 2017*
- ⁴³ It should be noted that limited uptake may be reflective of the restrictions imposed by the training package model.
- ⁴⁴ OECD (2017) *Building Skills for All in Australia: Policy Insights from the Survey of Adult Skills*

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- ⁴⁵ AISC (2018) *National Industry Insights: Foundation Skills*
- ⁴⁶ OECD (2017) *Building Skills for All in Australia: Policy Insights from the Survey of Adult Skills*
- ⁴⁷ NCVET (2018) *VET graduate outcomes 2018*
- ⁴⁸ NCVET (2018) *VET graduate outcomes 2018*
- ⁴⁹ Department of Education and Training (2018) *Foundation Skills Assessment Tool*, available at <www.education.gov.au/foundation-skills-assessment-tool>
- ⁵⁰ NCVET (2018), *Survey of the current VET Workforce*, available at <<https://www.ncver.edu.au/about/research/research-projects/in-house-research/national-vet-workforce-survey>>
- ⁵¹ NCVET (2018) *Survey of the current VET Workforce*, available at <<https://www.ncver.edu.au/about/research/research-projects/in-house-research/national-vet-workforce-survey>>
- ⁵² ABS (2006) *Australian and New Zealand Standard Classification of Occupations*, cat. no. 1220.0, last updated March 2016
- ⁵³ NCVET has mapped vocational education qualifications to ANZSCO categories to allow for consistent analysis between NCVET and Australian Bureau of Statistics data
- ⁵⁴ Australian Government (2018) *Jobs Outlook – Vocational Education Teachers*, available at <<https://joboutlook.gov.au/Occupation.aspx?search=Industry&Industry=P&code=2422>>
- ⁵⁵ As set out in competency standards in Training and Education Training Package (Release 2.1)
- ⁵⁶ ABS (2018) *Wage Price Index*, cat. no. 6345.0. Note: wages increased by 2.1 per cent in the year ending June 2018, a level below medium and long term forecasts
- ⁵⁷ CEDA (2015) *Australia's Future Workforce*, available at <<http://www.ceda.com.au/Research-and-policy/All-CEDA-research/Research-catalogue/Australia-s-future-workforce>>
- ⁵⁸ Alexandra Heath (2016) *The Changing Nature of the Australian Workforce, Speech to CEDA – Future Skills: The Education and Training Pipeline*, available at <<https://www.rba.gov.au/speeches/2016/sp-so-2016-09-21.html>>
- ⁵⁹ For example, AlphaBeta (2017) *The Automation Advantage*, available at <<http://www.alphabeta.com/wp-content/uploads/2017/08/The-Automation-Advantage.pdf>>
- ⁶⁰ McKinsey&Company (2018) *Retraining and reskilling workers in the age of automation*
- ⁶¹ Microsoft Australia (2018) *Building Australia's future-ready workforce*, available at <<https://msenterprise.global.ssl.fastly.net/wordpress/2018/02/Building-Australias-Future-Ready-Workforce.pdf>>
- ⁶² For example, Binkley et al. (2012) *Defining twenty-first century skills*; Pellegrino, et al. (2012) *Education for life and work: Developing transferable knowledge and skills in the 21st century*
- ⁶³ AlphaBeta (2017) *The Automation Advantage*, p 32, <<http://www.alphabeta.com/wp-content/uploads/2017/08/The-Automation-Advantage.pdf>>
- ⁶⁴ Callan, V., Johnston, M., Clayton, B. (2016) *E-assessment: challenges to the legitimacy of VET practitioners and auditors*, *Journal of Vocational Education and Training*
- ⁶⁵ NCVET (2018) *Online learning in Australia*, available at <<https://ncver.edu.au/research-and-statistics/research-projects/in-house-research/online-learning-in-australia>>
- ⁶⁶ Microsoft Australia (2018) *Building Australia's future-ready workforce*, available at <<https://msenterprise.global.ssl.fastly.net/wordpress/2018/02/Building-Australias-Future-Ready-Workforce.pdf>>
- ⁶⁷ DET (2018) *Vocational Education and Training Reform*, available at <<https://www.education.gov.au/vocational-education-and-training-reform>>
- ⁶⁸ Consultation with IRC (2019)
- ⁶⁹ OECD (2017) *Building Skills for All in Australia: Policy Insights from the Survey of Adult Skills*, available at <<http://www.oecd.org/australia/building-skills-for-all-in-australia-9789264281110-en.htm>>
- ⁷⁰ DET (2018) *International Student Data*, available at <<https://internationaleducation.gov.au/research/international-student-data/pages/default.aspx>>
- ⁷¹ DET (2018) *International Student Data*, available at <<https://internationaleducation.gov.au/research/international-student-data/pages/default.aspx>>
- ⁷² DET (2018) *International Student Data*, available at <<https://internationaleducation.gov.au/research/international-student-data/pages/default.aspx>>
- ⁷³ DET (2018) *International Student Data*, available at <<https://internationaleducation.gov.au/research/international-student-data/pages/default.aspx>>
- ⁷⁴ NCVET (2018) *Total VET Students and Courses 2017* and Department of Education and Training (2018) *Selected Higher Education Statistics – 2017 Student data*

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