Template for submissions to Training Product Reform

Key consultation areas

The Department of Education and Training (the department) seeks stakeholder input on the paper *Training Product Reform: what is the case for change?*, which proposes enhancements to the design of training products in vocational education and training (VET) to ensure they support skills development into the future. The paper *Training Product Reform: issues for discussion*, provides further detail and sets out a framework for public consultation. These papers are both available at [www.education.gov.au/VET-consultation](http://www.education.gov.au/VET-consultation).

How to provide feedback

Stakeholder consultations began with the public release of *Training Product Reform: what is the case for change?* in December 2017 and continue through to March 2018.

Respondents may provide feedback on some or all of the paper’s themes. To assist with the compilation and analysis of the views of all stakeholders, respondents are encouraged to provide feedback via this preferred submission template. Submissions in alternative formats will also be accepted.

All submissions should be emailed to VETconsultation@education.gov.au.


How feedback will inform policy decisions

Stakeholder responses to the discussion questions will form the basis for the Training Product Reform Joint Working Party’s report to the COAG Industry and Skills Council on training product reform.
## Submission details

* indicates mandatory question

<table>
<thead>
<tr>
<th>Item</th>
<th>Instruction</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Submission made on behalf of:*</td>
<td>Please select from the drop down list.</td>
<td>Organisation</td>
</tr>
<tr>
<td>2. Full name:*</td>
<td>Complete information in column to right</td>
<td>Dr Craig Fowler</td>
</tr>
<tr>
<td>3. State or territory:*</td>
<td>Please select from the drop down list.</td>
<td>SA</td>
</tr>
<tr>
<td>4. Organisation name (if applicable):</td>
<td>Complete information in column to right</td>
<td>National Centre for Vocational Education Research</td>
</tr>
<tr>
<td>5. Please indicate your interest in this discussion paper:*</td>
<td>Please select from the drop down list. If the option ‘other’ applies to you, please specify</td>
<td>Other (please specify) Independent, not-for-profit company owned by the Australian Government and state and territory ministers responsible for vocational education and training.</td>
</tr>
<tr>
<td>6. Please indicate if you do not want your submission to be published on the department’s website or otherwise be made publicly available:*</td>
<td>Please select from the drop down list if you do not wish for it to be published. Note information below this table on the publishing of submissions</td>
<td>Choose an item.</td>
</tr>
<tr>
<td>7. If you do want your submission published, do you want your details kept anonymous?</td>
<td>Please select from the drop down list if you wish to keep your details anonymous.</td>
<td>Choose an item.</td>
</tr>
</tbody>
</table>

### Notes on publishing submissions:


2. If you do not want your submission published on the department’s website or otherwise be made publicly available, please advise the department upon making your submission, otherwise all submissions may be published.
Theme 1 discussion questions: The case for change

1. What are the skills, knowledge and abilities that make workers more adaptable and resilient to future workforce changes?

2. How well placed are training products to respond to future workforce demands and skill requirements?

3. What barriers are there which could prevent training products from meeting future workforce needs?

4. Will the design changes proposed improve the ability for training products to respond to future workforce demands and skill requirements?

5. Are the terms ‘training packages’ and ‘training products’ fit for purpose? Do they appropriately describe this fundamental VET system infrastructure?

6. How strongly has the case for change been made by the paper Training Product Reform – what is the case for change? Does it need refining in particular areas?

COMMENT:

Questions 1-3 and 6 are addressed below.

1. “With the end of the resources boom and reversal of Australia’s terms of trade, new dynamics are refashioning the policy challenge. The changing nature of workforce skills, the future of non-mining trade-exposed sectors and the implications of our proximity to Asia are all increasingly relevant. In turn, these factors are themselves being reshaped by an underlying mix of technical, social and global forces” (Green et al 2015, p.215).

Never before has understanding the nature and structure of training products to meet the changing workforce skill needs been more critical. But what are these skills? NCVER’s recent research has identified the following skills, knowledge and abilities enabling or facilitating workers’ adaptability and resilience to future changes in the workforce:

- **Digital skills for the general workforce**, enabling them to effectively use information technology (IT) systems and general technology processes across all sectors (as distinct from basic computer literacy for everyday life and digital skills for professionals specifically working in the information and communication technologies (ICT) fields. Gekara et al (2017) reported however that there is a growing lack of skills essential to effectively implement the new, highly digitised and mechanised systems of work. Research by Snell et al (2016) and Callan and Bowman (2015) shows that both new and existing workers need to upskill in digital literacy for ongoing productive employment.

- **STEM skills and their acquisition** need to be supported by policy in order to assist the take up of new technologies by workers and workplaces (Beddie et al 2014). Seet et al (forthcoming) find that the vocational education and training (VET) sector needs to incorporate these requirements. They further add that government policy needs to ensure training courses are locally available to deliver the STEM training. Their findings suggest this local availability helps industries train their employees to attain the requisite STEM skills for taking advantage of new technologies in the workplace.

A further first step required is government policy for training the trainers, as Seet et al
(forthcoming) found that many VET trainers lacked skills with new technologies. Policy measures need to support trainers to invest in their own preparation and skills for training students in new disruptive technologies. In Seet et al’s work ‘disruptive technologies’ are defined as “technology that changes the performance metrics or consumer expectations of a market by providing radically new functionality, discontinuous technical standards, or new forms of ownership which may have relatively different disruption effects on market payers”.

- **Higher cognitive and social skills** are important in jobs as the work process is becoming more complex. Seet et al (forthcoming) point out that the development of soft skills is essential to support workers for adapting to changing workplaces. This requires the teaching and assessment of employability skills (social, higher cognitive) in VET courses as specified by training package content (Beddie et al 2017 and Beddie 2017).

- **Skills in innovation and entrepreneurship** to solve real-world problems in industry. Scott-Kemmis et al (2017) argued that these skills should be developed in at least some VET qualifications, perhaps particularly those in IT but that a broad fostering of entrepreneurial skills may be necessary, requiring a more strategic response from the VET sector. The role of education in developing skills for entrepreneurship has attracted an increased focus internationally. The contribution of VET to entrepreneurship in Australia is possibly via developing students’ ability to share knowledge directly with the workplace, which involves inquiry, reflective practice, communication and collaboration. Hodge et al (2017) found that the new knowledge and skills learned by VET placement students in their formal studies may be more contemporary than those of staff in the workplace. Case studies in early childhood education, nursing, hospitality and community services, revealed examples of knowledge diffusion via small scale improvements to work practice at a local level, thus by default contributing to an increase in workplace innovation.

- **Motivation for lifelong learning** - lifelong learning will be fundamental to future work environments in view of the combination of technological change and longer working lives — during which time we may change careers a number of times and work for numerous employers (Beddie et al 2017; Payton 2017). Snell et al (2016:2) found that since the new emerging industries are considerably different in terms of their operations and skills needs, retrenched workers require highly transferable skills to enable them to find new work. Seet et al (forthcoming) indicate that more emphasis should be placed on foundational knowledge and building the capacity to learn within VET, to enable lifelong learning. Watson (2013) described lifelong learning in Australia and concluded that promoters of lifelong learning should recognise that the idea of increased private investment in education and training - a feature of the lifelong learning policy agenda - could compound the barriers to participation faced by people with low skills, especially if narrowly interpreted.

NCVER’s analysis of internet vacancy data supports the above points — these generic skills are prioritised across all industries in addition to technical skills (see https://nationalindustryinsights.aisc.net.au/industries).

2. How well placed are current training products to respond to future workforce skills and demands? Australia’s competitiveness in the future global marketplace depends on VET providers training larger and more diverse student populations at higher skill levels. However, Beddie and Simon (2017) reported that Registered Training Organisations (RTOs) do not need to start from scratch to be involved in the innovation agenda: they can build on their existing business models to develop innovation within industries. Other possibilities include capitalising on their infrastructure, expertise and community connections or hosting
innovation hubs or enterprise incubators.

In a NCVER discussion paper, *Skilling for tomorrow*, Payton (2017) concludes that responding to future workforce demands and skill requirements could prove challenging for VET providers because they must secure funding and resources to meet demand in an environment where consumers increasingly differentiate providers based on cost, rather than on quality.

Other considerations for providers responding to the future world of work highlighted by Payton include:

- course offerings should be reoriented to reflect the growing importance of communication skills
- technological and numeracy skills need to be incorporated into a broader range of courses
- digital literacy skills incorporated into courses must reflect the technology used in the workplace
- packaging and timing of VET offerings need to be re-evaluated and re-oriented toward a lifelong learning model
- maintaining currency with industry requirements is central
- most students will continue to benefit from small group (or one-on-one) tutoring, particularly as the relative importance of solving complex problems in teams, versus carrying out routine tasks, increases in workplaces.

3. The UK’s Post-16 Skills Plan (2016, p.11) lists the following barriers or challenges that were preventing their vocational training system from meeting the needs of learners and employers in developing the future work skills:

- standards and qualifications are often set by a confusing mixture of awarding organisations and intermediary bodies, which have not provided an effective voice for business in the UK
- too many overlapping and often low-value qualifications, which do not ensure a clear line of sight to the world of work
- a complex system which both young people and adults looking to retrain find difficult to navigate
- not enough apprenticeship opportunities to meet the needs of young people and the demands of the UK economy
- too little dedicated technical education at higher levels to meet the UK’s need for technician-level skills and programmes are not always designed to deliver what is needed to move to skilled employment.

Some of these barriers or challenges are shared by Australia. To address them:

- Adopt a skills mindset to address a common theme observed across emerging industries (and their work), of the need for a significant ‘cultural shift’ in the way worker skills are generated and deployed (Beddie et al 2014). Industry collaboration with education and training providers is a key factor for greater industry input into the training needed in anticipation of future demand. A more nimble workforce needs willingness to adapt and change. Employers need to be supported to give on the job learning in a sustained and continuous way. Sustained effort must be given by government, industry and education providers towards advancing skill utilisation and
reducing skill gaps. Policy needs to guide towards a long term worker skills mindset committed to professional development, and to use appropriate workplace models for worker development with good working conditions, learning opportunities, stronger management and leadership (Beddie et al 2014).

- Skill sets will be needed. Payton (2017) points out that attaining whole qualifications for each job change may not be required in the future of work and, accordingly, a more flexible education and training system will be needed to help meet the evolving skills needs of jobs. The move to ‘micro-credentialing’ or ‘digital badges’, which are certifications in a specific topic area, are gaining popularity and are a way to impart important technology and innovation-related skills (Norton, 2016). The development of skills sets in Australian VET have similarly been identified for some time as a valuable way for people to upgrade skills and gain specific knowledge in emerging licensing or technology-related areas. Skill sets should be seen as complementary to a system focused on the achievement of full qualifications (Mills et al, 2012). The training solutions that are developed need to allow for the expanded scope of tasks in existing roles, allowing existing worker up-skilling and use of new technologies (Seet et al forthcoming).

- A simplified training system facilitating transferability is needed. Snell et al (2016) found Australia’s VET institutions do facilitate skills transferability, but they also found barriers that stemmed from the large extent of duplication of units of competency developed across more than 1600 training package qualifications. From this perspective, two opportunities exist to improve the VET system design. The first is rationalising units of competency found in a number of qualifications that have different titles but more or less deliver the same knowledge and skills content. The second is establishing a common language (harmonisation) to describe skills and units of competency across industry skills councils and training packages to make them easier to understand across industry boundaries, educational institutions and training bodies, and among policymakers, employers and employees. Without using similar language to understand and describe competencies, students will tend to be unaware of the highly transferable skills they hold. Without a greater sharing of units of competency that deliver similar knowledge and skills across occupations and occupational clusters, transferable skills will remain invisible to the many workers who possess them and need to draw upon them to find alternative employment.

- Create a dynamic skill information framework. A concerted effort is needed to create a skill information framework—populated with contemporary and cross-referenced skills intelligence and maintained close to real-time—for more informed policy and practice (Siekmann and Fowler, 2017). This supports mobility and choice in an economy with frequent work dislocation. It can also support better career advice. An overview of occupational skills information practices from selected countries and organisations indicates concerted effort is underway to create dynamic occupational skills frameworks. These frameworks are populated with contemporary skills intelligence, which are cross-referenced and maintain close to real-time. The aim is to steer policy and inform training practices.

- Adaptations can be drawn from these various examples to benefit Australia. Siekmann and Fowler (2017) indicate that the Australian career site JobOutlook already takes advantage of the O*NET skills repository, using its descriptors for Australian and New Zealand Standard Classification of Occupations (ANZSCO) occupational groups. This information could be linked to the MySkills website, a platform primarily designed to enable students to find courses and training
providers. The MySkills site allows individuals and curriculum developers to link qualifications with research on occupational labour market statistics and extensive skills descriptions (derived from US occupations through O*NET) within intended occupations. In a next step, this information could be mapped to the units of competency in training products, which are currently stored publicly on the repository of Nationally Recognised Training (NRT) vocational training and providers, training.gov.au. During a 2016 training products symposium, participants proposed that ‘static’ course and unit information (stored as pdf documents) be transferred into a relational database of units of competencies (Beddie et al 2017). The VET workforce, as well as employers and, potentially, learners, could then access specific information about the training packages, qualifications, skills sets and units of competency associated with their occupation of interest (Beddie et al 2017). The Australian Industry Skills Committee’s National Industry Insights website will provide an online occupation and skills information platform; it is being developed ‘to provide an easily accessible platform for industry stakeholders and IRCs to access data and information on their sector’ (Australian Industry Skills Committee 2017).

- Rethinking how occupational skills information could be stored and accessed as discussed here, also offers a potential opportunity to simplify the structure and update of training packages. Snell et al (2016) suggested that the Australian VET system could be improved by encouraging more transferability across occupations by means of making employability skills more applicable to all workplace contexts. This proposal would give training packages drawn from a common language to describe competencies, skills and knowledge to make the content of training packages easier to understand. International practice relevant to this proposal is further discussed below.

- Regular review and consolidation of qualifications. Examining international practice of regular and timely review of qualifications and training packages can guide Australian efforts. Korbel and Misko (2016) report that in New Zealand, Scotland and the UK, qualifications are tested by their enrolments and flagged for review and potential removal if they attract no enrolments across two years. This regular test is conducted to simplify the training system by removing obsolete and superfluous qualifications. Korbel and Misko also note that in 2016 the UK adopted a consolidation practice that formed qualification streams or routes into related occupational areas with units shared across industry sectors.

Recent research undertaken or commissioned by NCVER has identified additional barriers preventing training products from meeting Australia’s future workforce need as relating to:

- The role of VET
  - Unclear boundaries between VET and higher education (Fowler 2017). VET participation is declining in relation to higher education participation as a consequence of policy and funding reforms that have travelled along ‘different tracks’ over the last six to eight years. The boundaries and connections between the sectors show significant confusion and inter-institutional contest, as well as willing collaboration. Fowler argues that policy and incentives need to ensure the equitable funding of mid-level professionals, for example, associate degrees and higher apprenticeships.

- Currency of skills
  - Currency of trainers’ teaching practices and industry skills in a rapidly changing
industrial, technological and economic environment (Tyler & Dymock 2017).

- **Professional development**
  - No national systemic basis for continuing professional development for VET practitioners. The VET sector would benefit from establishing a professional association which could register VET practitioners, track professional development and be the organisation publicly accountable for the quality of VET delivery (Tyler and Dymock 2017).
  - Insufficient evidence collected and collated on how trainers and assessors undertake professional development in the fields of the knowledge and practice of vocational training, learning and assessment including competency based training and assessment (Tyler & Dymock 2017).
  - The Certificate IV in Training and Assessment qualification in isolation may not adequately prepare VET practitioners for the variety of teaching and assessment scenarios they will encounter (Tyler & Dymock 2017).
  - Austin and O’Donovan (2016) see leadership as the most critical challenge for training providers’ professional development. An adaptive and collaborative leadership style is necessary for training for future jobs that are yet to be clearly defined.

6. The case for change is strong. NCVER argues that alongside these needed changes it is essential to maintain a national system of qualifications and accredited training that is well articulated and underpinned by strong quality assurance systems. Such a system can provide confidence in the credibility of Australian qualifications for employers and qualification holders, and improve the recognition and portability of qualifications across and between jurisdictions. There is a need to ensure that the system retains its ability to adapt to changing environments.

The paper *Training Product Reform: what is the case for change?* identifies that there is still a need to consider solutions to ongoing and emerging problems posed by rapid change in the future of work, such as transferability of technical skills to other contexts, which will affect the content and delivery of training packages.

As emphasised at a 2016 NCVER-hosted symposium focused on the challenges and opportunities for the reform of training packages, any “reform efforts should aim to preserve the effective aspects of the current training products while also looking to the future. These efforts should concentrate on the fundamentals:

- high-level national industry standards, along with educational standards
- educator and industry involvement in design and delivery” (Beddie et al 2017, p.3).

The initiative outlined in sub-section ‘Adaptive to emerging skill needs’ (p.14 of *Training Product Reform: what is the case for change?*) may need greater attention as to feasibility and administration of the proposed temporary Industry Reference Committees (IRCs).

**References**


<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Location</th>
<th>Date of access</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beddie, F &amp; Simon, L 2017</td>
<td><em>VET applied research: driving VET’s role in the innovation system</em></td>
<td>NCVER, Adelaide</td>
<td>28 Feb 2018</td>
<td><a href="http://www.voced.edu.au/content/ngv%3A77933">http://www.voced.edu.au/content/ngv%3A77933</a></td>
</tr>
</tbody>
</table>
Seet, PS, Jones, J, Spoehr, J, Hordacre, AL forthcoming, The fourth industrial revolution - implications of technological disruption for Australian VET, NCVER, Adelaide


Theme 2 discussion questions: Qualification design – Inclusion of foundation skills and future work skills

7. Should future skills and foundation skills form part of all qualifications?

8. How much prescription should there be to accommodate different learner cohorts?

9. Can the current format of units of competency effectively support the learning and assessment of future work skills and foundation skills? Would changes be needed?

10. How could training products specify the assessment of these skills even if a learner’s qualification does not include specific units of competency in these skills?

11. What additional skills and knowledge should be incorporated in future work skills which are not currently encapsulated by employability skills? Does the term ‘future work skills’ convey the intent of these skills or should employability skills be broadened to include these additional skills?

12. Does the current VET workforce have the skills to deliver these units? What, if any, upskilling would be required?

COMMENT:

Questions 7-12 are addressed below.

7. Data modelling by the CSIRO for TAFE Queensland (see The VET era: equipping Australia’s workforce for the future digital economy) identified technology design, mathematics, computer use, critical thinking skills, service orientation, negotiation and active listening, and installation and management of financial resources skills as important future skills (Payton 2017). Not all of these skills are relevant to all qualifications. However, Payton (2017) argues that entrepreneurship and lifelong learning should also be added to the core skills.

The continuing development of foundation skills—English language, literacy (including digital) and numeracy and employability skills, such as collaboration, problem solving, self-management, learning—are critical for learners at all qualification levels. Much work has been undertaken since the late 1990s to embed language, literacy and numeracy skills in training packages (‘Built in not bolted on’ initiatives), and continued through the work of the former Industry Skills Councils. The importance of foundation skills as a component of training packages has been supported through the development and application of the Australian Core Skills Framework and the Core Skills for Work Developmental Framework.

A difficulty with integrating foundation skills into all qualifications is ensuring those who are delivering the qualification can identify the foundations skills within it, and adequately support learners to develop these skills. The addition of the unit ‘TAELLN401A - Address adult language, literacy and numeracy skills’ as a core unit in the current Certificate IV in Training and Assessment (TAE40116) may go some way to address this challenge.

Also see response to Theme 4, Questions 19 and 20.

8. The VET sector in Australia enrols learners from a wide variety of backgrounds in a diverse range of settings, fields of study and programs. As a result, learner participation and success can be uneven. Knowing the types of interventions and activities that work best to engage
learners and promote learner success can assist providers to improve the quality of their VET delivery. This helps VET to work well for all and can assist system authorities to target support for providers, thus raising levels of engagement and completion. Lamb et al’ forthcoming research identified the following strategies as successful for disadvantaged learners (students located in regional areas, identifying as Indigenous, with a disability, those with low prior educational attainment and individuals from non-English speaking backgrounds):

- Institution-wide commitment. The institute should have a defined set of initiatives in place, such as providing learning support and matching more experienced staff with high-need learners, rather than relying on ad hoc practices.
- Strong relationships with employers and other service agencies in the community via adequate resourcing. These relationships help the provider to better understand and thus support their students.
- Customised individual support to the individual, including tailoring support services to the individual’s specific learning needs, such as extra literacy and numeracy support, as well as promoting the benefits of specific outreach programs in the community.

While flexibility in the delivery of training is important for different learner cohorts, Lamb et al’s (forthcoming) research found that replacing classroom-based delivery with other delivery modes does not necessarily benefit disadvantaged learners. Classroom-based delivery should be retained but supplemented with other flexible options.

Also see response to Question 20 in Theme 4.

9. The current format of units of competency would effectively support the learning and assessment of future work skills and foundation skills. That said, a graded assessment framework rather than a binary ‘competent/not yet competent’ framework should be considered. As Curtis (2010) has argued, a binary system offers no opportunity for feedback to be provided to the student until the point of assessment. A graded assessment framework with finer distinctions may be more effective.

Curtis (2010) cited a case study of the development of professional skills in speech therapists assessed using a set of performance levels, or grades, and performance standards. Teachers and learners both used them to identify gaps between current and desired performance. The standards also became the basis for teacher-generated feedback to bridge the gap between performance levels.

Curtis (2010) reports that Lajoie’s (2003) concept of ‘dynamic assessment’ (where the student receives regular feedback about the performance standards expected of them) can aid learning within a graded framework. The student submits work for assessment, receives feedback from the teacher about how their work compares to performance standards, the student revises their work and, in the process, develops their skills/knowledge. Misko et al (2014) also found that adequate and timely feedback helped to improved subsequent learning, reflected in successful performance in subsequent assessments.

Combining a graded assessment framework and ‘dynamic assessment’ can reduce the time it takes a student to become competent, suggesting it may be more effective than a simple binary approach (Curtis 2010).

The National Student Outcomes Survey (SOS) collects data on student satisfaction on assessment methods and standards of training, including writing skills and problem solving skills, even if these skills were not explicitly addressed as part of the training. As a crude measure of how well the VET system equips students with these skills from the students’
perspectives, the survey found (as published in *VET student outcomes 2017*):

- 89.4% of VET graduates were satisfied with assessment
- 51.1% had improved writing skills
- 78.0% had developed problem-solving skills.

NCVER’s *Employers’ Use and Views of the VET System* (2017) shows:

- 75.4% of employers were satisfied that vocational qualifications provide employees with the skills they require for the job, similar to 2015.

Of those who were dissatisfied (12.8%):

- 41.8% believed the training was of poor quality or low standard
- 41.3% believed relevant skills were not taught
- 28.6% thought there was not enough focus on practical skills.

There is a lag between the two surveys in that employers (responding to the Survey of Employers’ Use and Views of the VET System) are not reporting on the same cohort of graduates canvassed in SOS. However, the differences suggest scope for improvement in teaching future and foundational work skills. Learning and assessment could be incorporated into existing units of competency, or via new units as proposed by the Australian Government Department of Education and Training. The latter option appears sound and overcomes the difficulty of assessing these skills when they are not specifically included in a qualification.

10. Misko et al’s (2014) work explored how providers used employers to assist in the validation of their assessment tools. They sought feedback from employers through indirect methods such as networking with industry, workplace visits, and industry representation on reference groups or assessment panels to determine whether their training (including assessments) was meeting industry needs. A similar approach could be used to assess future work/foundation skills.

11. In NCVER’s *Glossary of VET*, employability skills are defined as “the skills which enable people to gain, keep and progress in employment, including skills in the clusters of work readiness and work habits, interpersonal skills and learning, thinking and adaptability skills”. (Naidu, Stanwick and Frazer 2017). NCVER does not have a working definition of ‘future work skills’ because the meaning of the term is still nebulous and evolving. While the list of future work skills identified in the response to Theme 1 is not necessarily exhaustive, the items in this list can be encompassed by the definition of employability skills. However, the distinction between the two terms is the narrower focus on the future work skills and thus the term ‘future work skills’ does convey the intent of these skills. Over time, the definition of employability skills is likely to envelop what are now ‘future skills’ and other skills as yet unanticipated or unknown will become the new ‘future skills’.

12. See the response to Question 3, specifically relating to professional development.

References


Lamb, S, Maire, Q, Walstabl, A, Newman, G, Doecke, E & Davies, M forthcoming, *Improving*
participation and success in VET for disadvantage learners, NCVER, Adelaide.


Theme 3 discussion questions: Qualification design – Technical skills

13. Should technical units have a greater focus on underpinning knowledge and theory?
14. How should underpinning knowledge and theory be assessed?
15. Is the language used to differentiate the components of competence appropriate, or is there other language or terms that better differentiate knowledge and skill?
16. Is there a need to assess technical skills differently in high risk sectors? If so, how?
17. How could skill sets or accredited courses assist in providing specific technical skills required for the workplace?

COMMENT:

Questions 13-16 are addressed below.

13. In their study of scholarly practice in tertiary education, Williams et al (2012) reported that, in the case of VET, knowledge building emphasised the processes undertaken with little information given about content or contextual knowledge. Collaboration between multidisciplinary teams (and by extension, technical units) as a way of building knowledge is not part of everyday practice for the VET sector. Understanding the contestability of knowledge and ways of knowing was also absent. Raghunathan et al’s (2015) study of enrolled nursing students reported that students wanted closer integration of theory to clinical practicum.

14. NCVER recognises that the integrity and quality of course assessments has the potential to either support or detract from VET quality (Griffin 2017). Raghunathan et al’s (2015) study reported that students prefer a variety of assessment methods, but Tyler and Dymock (2017) found that the Certificate IV in Training and Assessment may not adequately prepare VET practitioners for the variety of assessment scenarios they will encounter.

15. In NCVER’s Glossary of VET (Naidu, Stanwick & Frazer 2017) defines skill as “the ability to perform a particular mental or physical activity that may be developed through vocational training or practice” and identifies different types or levels of skill (basic, generic, advanced and specific or specialised). NCVER does not have a formal definition of knowledge but in general parlance, ‘knowledge’ can be general or specific, theoretical or practical. There appears to be some overlap and possible potential for confusion between ‘generic skills’ and ‘general knowledge’, and specialised, specific or specialist skills and ‘specific knowledge’ and ‘skills’ in general and ‘practical knowledge’.

Even if the language used is appropriate, it may vary between training packages. Snell et al’s (2015) study of cross-occupational skill transferability reported a need for a common language to describe competencies, skills and knowledge to make the content of training packages easier to understand across industry boundaries, educational institutions and training bodies, and among policy-makers and employers.

16. NCVER has not undertaken any studies of assessment methods of training for high risk sectors but a brief overview of the international literature suggests:
   • Better training is related to a higher perception or appreciation of risk in the Spanish construction industry (Rodriguez-Garson et al 2015). Inadequate training was associated with poorer safety performance in the Indian construction industry.
(Bhaumik et al 2018). Li et al (2015) reported that traditional on-site training in the Hong Kong construction industry is inefficient and interferes with progress on site, while off-site training provides little opportunity to develop the practical skills and awareness needed through hands-on experience.

- The apprenticeship system in Denmark is associated with a 40% higher fatality rate in the construction industry than in Sweden, where students retain their student status during company-based training. Different forms of connectivity models in VET appear to promote various forms of safety learning among students (Grytnes et al 2018).

- Whether crew resource management training in the British aviation industry transfers to the flight deck is not clear due to inadequate assessment of training (O’Connor et al 2003).

- The Australian rail industry requires a strong national entity to harmonise high-quality training (Short & Harris 2017).

- The introduction of new regulations for training and licencing of Australian aircraft maintenance engineers to align with European qualifications resulted in loss of control of training to an increasingly dysfunctional training system (Hampson and Fraser 2016). Training and career paths need to be harmonised across sectors (civilian and defence; airline and general aviation) and between aerospace manufacturing and aviation (Hampson et al 2015).

- Canadian education and awareness strategies during vocational training programs to prevent future injuries among young workers are often ineffective. They emphasize teaching rather than learning strategies and appear to contradict recent competency-based developments in education science. On the other hand, learning in an actual situation poses challenges because working conditions (and also learning conditions) are not always optimal (Laberge, McEachen & Calvet 2014).

These studies generally suggest a need for more stringent assessment in high risk sectors.

References


**Theme 4 discussion questions: Qualification design – Broadening the vocational outcome**

18. What types of jobs require targeted qualifications? Could these jobs be better served by broader qualifications?

19. Would the needs of learners be better met by qualifications that have a targeted or broader outcome? Why?

20. Would the needs of industry be better met by qualifications that have a targeted or broader outcome? Why?

21. If qualifications are matched to a broader range of occupational outcomes, what models will support effective upskilling or retraining?

**COMMENT:**

Questions 18-20 are addressed below.

18. Training for jobs requiring targeted qualifications should also include broader competencies - or broader qualifications should include targeted competencies. The idea of occupational clusters that facilitate skills transferability and cross-occupational mobility is an alternative model. Each ‘group’ of occupations across industries contains certain similar elements including skills, knowledge, tasks, activities and other desirable employee attributes (Snell et al 2016a). Aligning training packages with occupational clusters could provide generic competencies that can be used across various occupations.

Incorporating broad skills in every qualification benefits learners and workers who will be able to apply them to a wider range of jobs. Industry also benefits, as workers from a declining industry can be more easily incorporated into an industry that needs more workers. A combination of broad and targeted outcomes within each qualification is likely required. However, to what extent broad (i.e. transferable) and targeted skills training is required within occupations would vary considerably between occupations and this would require detailed consideration with industry partners.

Some skills are more transferable in some occupational contexts than others. For example, a wood machinist would find it easier to obtain work as a carpenter or joiner rather than as a chef (Snell et al 2016a). Conversely, auto production workers have a wide range of transferable skills suitable in many industries, including dexterity, ability to follow instructions, flexibility, reliability, teamwork, communication, attention to detail, problem-solving, ability to work to high standards under time pressure, ability to anticipate needs of self and the work team and the ability to stand for long periods of time (Snell et al 2016b). Enterprise, soft or transferable skills allow workers to engage with a complex working world and these skills have been found to be related to long-term success in the workplace (AlphaBeta, 2017).

Attaining whole qualifications for each job change may not be necessary. AlphaBeta’s (2017) study found that jobs are more related than previously thought; when a person trains or works in one job, they gain skills for around 13 other jobs.

Snell et al. (2016a) found that present and future workers require flexibility to meet employment demands. Transferable skills such as communication, knowledge of health and safety, the ability to operate effectively in the workplace as well as personal attributes and work ethic are important to many employers across most occupations.
Many generic skills including technical or job-specific skills can also be effectively applied in other jobs.

AlphaBeta (2016a) has identified seven clusters in Australia’s workforce with overlapping skills between occupations within each cluster (‘Generators’, ‘Artisans’, ‘Carers’, ‘Coordinators’, ‘Designers’, ‘Informers’ and ‘Technologists’). Employers in each cluster might demand some technical or enterprise skills more than others, but overall many skills will be the same.

There have been cases in which qualifications have been split into separate qualifications by specialisation, but some of the qualifications tend to be underused. Conversely, the Certificate III in Individual Support (which replaced certificate III qualifications in aged care, disability and home and community care with specialisations within one qualification) seems to have been successful (AlphaBeta 2016a).

19. & 20. Much recent research concludes that broadening qualifications is important both for successfully skilling the future workforce and for industry. Cross-occupational mobility is becoming more common. For example, former workers from the defunct auto manufacturing industry have generally integrated into new occupations. Snell et al (2016a) found that displaced auto workers were seeking employment in areas such as hospitality. The 2006 and 2011 Census (Australian Bureau of Statistics) both show that many other traditional industries within the manufacturing sector have declined while more service-oriented sectors have expanded.

The decline in jobs with routine processes highly susceptible to automation is a trend set to continue (Australian Government Productivity Commission 2016). Durrant-Whyte et al (2015) estimate that 40% of jobs in Australia are likely to become automated in the next 10 to 15 years. Conversely, industries considered ‘non-routine’, requiring skills such as innovation, creativity, problem-solving, relationships and responsiveness to changing circumstances, are now experiencing growth in employment opportunities (Torii & O’Connell 2017). Young people will need to acquire more of the transferable skills sets including ‘enterprise’ skills and being more entrepreneurial, as these types of skills will be demanded in 70% of future jobs (AlphaBeta, 2016b). Accelerated demand for skills in the service sector and growth in non-routine cognitive jobs also means that mid-career workers need to upskill, especially as the private sector is adopting more new digital industrial technologies in the era of Industry 4.0 (VDC News 2018).

Improvements to the Australian VET system must encourage transferability between occupations by focusing on soft skills in most, if not all, training packages. Employability skills including soft skills are currently embedded into training packages but often developed in an occupation-specific way which limits their transferability (Snell et al 2016a). Many units of competencies are shared by training packages. The skills for auto production workers, as an example, are also shared by workers in food manufacturing, healthcare, warehousing, storage and logistics (Snell et al 2016b). These transferable skill sets should be utilised and highlighted to workers to encourage occupational mobility when they need to find new employment.

Moodie et al (2015) argue that tertiary education curriculum needs to move away from a focus on specific work tasks and roles, and towards a capabilities approach. This shift would develop a worker’s theoretical knowledge, technical skills and attributes in a broader field alongside the skills needed for a particular occupation. The Organisation for Economic Co-operation and Development (OECD) even advocates for more broad competencies such as entrepreneurship, innovation, creativity, critical thinking, collaboration and problem solving to be fostered in schools, prior to VET (Schleicher...
References


Theme 5 discussion questions: Qualification design – Structure of core and elective units

22. Should the design of qualifications specify a minimum number/proportion of core units or a minimum number/proportion of elective units? Should this vary between qualification level or by industry, or should it be consistent?

23. Should qualifications specify a minimum number of the different types of units (technical, foundation, future skills)?

24. Should there be a minimum number of units which should be included from other training packages?

25. If the current flexibility is retained, what other mechanisms could be put in place to assist employers to understand the specific skills which learners have gained through their qualification?

26. Could greater use of specialisations within qualifications achieve a better balance of flexibility and consistency?

COMMENT:

NCVER has not published research or data relevant to this theme.
27. Are ‘training packages’ useful for determining training needs?

28. Does the system require additional flexibility to enable different ways of grouping qualifications?

COMMENT:

Questions 27 and 28 are addressed below.

27. Beddie et al’s (2017) report on challenges and opportunities for the reform of training products noted that:
   - simplification must be an essential goal of reform; Korbel and Misko (2016) reported that having one qualification for each occupation listed at the 6 digit level in the ANZCO would reduce the number of qualifications from 1600 to 500 and at the 4 digit level this number would be 272
   - the training products framework should remain industry-led
   - reform efforts should aim to preserve the effective aspects of the current training products
   - design and implementation must be considered together if training products do not deliver what employers need, the employers will walk away from accredited training and find other ways to skill their workers (also see response to Theme 9)
   - the design of training packages needs greater educational involvement and employer involvement in their implementation and assessment
   - not everything is new - there are some constants in human behaviour for which the economy and, in turn, the training system must provide
   - industry representatives agreed that the system should not be fixated on change (to train for something too far into the future that will not serve employers or individuals in today’s workplace)
   - a common core for all qualifications could be difficult to achieve due to diversity of industries; the system has to be able to take account of both labour market settings and the specific purposes of the qualification as an entry to a vocation and career, or to undertake a specific job
   - training products must capture the entire range from specific tasks, to holistic workplace awareness and social interaction beyond a particular job – but the right balance is still unclear
   - industry involvement at the point of assessment is necessary for quality assurance, whereas current emphasis is on initial training product development
   - there are dichotomies between:
     - flexibility and consistency
     - industry experience and teacher education
     - relevance for local areas and national consistency
   - greater consultation and collaboration is needed between providers, industry and
regulators during the design of training products

- a relational rather than a static database could provide information about training packages using different groupings
- low use of a training package does not automatically signal obsolescence.

In addition to this last point, Korbel and Misko (2016) found a large imbalance between uptake and utility of training package qualifications.

As highlighted by Beddie et al (2017), participants at the symposium agreed that VET is the glue fostering cohesive communities and this supports the idea of grouping based on regional needs.

28. Other possible ways for grouping qualifications as suggested by the Department’s discussion and ‘Case for Change’ papers are emerging skills needs, regional needs, national priorities or specific labour market needs, in addition to traditional industry groupings.

NCVER recognises the need to continuously update training packages to reflect the current needs of the modern economy but notes that the currency and frequency of changes vary between sectors. For some sectors training packages are not updated quickly enough, while for other sectors the constant revision makes it difficult for RTOs to keep up with changes. Keeping up with changes also has implications for costs and quality assurance, with such changes having a strong ‘ripple’ effect across funders, providers, students, industry and general VET system administrative burden.

If these changes also apply to more than one method of grouping, then the administrative and regulatory burden for all agencies will of course also be multiplied (NCVER 2015).

The table below (NCVER 2014) shows the large number of small RTOs with fewer than 100 or so students that may struggle to implement changes; any reforms must consider the impact on smaller as well as larger providers.

<table>
<thead>
<tr>
<th>Table B1 Number of providers by size band, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
</tr>
<tr>
<td>1-100</td>
</tr>
<tr>
<td>101-1000</td>
</tr>
<tr>
<td>1001-10 000</td>
</tr>
<tr>
<td>10 000+</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>1891</td>
</tr>
<tr>
<td>2063</td>
</tr>
<tr>
<td>577</td>
</tr>
<tr>
<td>73</td>
</tr>
<tr>
<td>4604</td>
</tr>
</tbody>
</table>

Note: Some providers report data under multiple types, so the number of providers may differ from that reported in other publications.


Examining international practice of regular and timely review of qualifications and training packages can guide Australian efforts. Korbel and Misko (2016) report that in New Zealand, Scotland and the UK, qualifications are tested by enrolments and flagged for review and potential removal if they attract no enrolments across two years. This regular test is conducted to simplify the training system by removing obsolete and superfluous qualifications. Korbel and Misko also note that in 2016 the UK adopted a consolidation practice that formed qualifications streams or routes into related occupational areas with units shared across industry sectors. NCVER will provide an updated review of enrolments
by qualifications and training packages in mid-2018 (Korbel, forthcoming).

References


**Theme 7 discussion questions: Qualification design – Increasing the use of common units of competency**

29. What are the benefits or disadvantages promoting the use of common units?

30. What barriers are currently in the system which prevent the adoption of current units?

31. What would be suitable criteria for determining whether a learning requirement can be met by a common unit of competency?

32. Are there other mechanisms (e.g. implementation guides, companion volumes) that would overcome potential disadvantages of common units of competency and promote wider adoption?

**COMMENT:**

Questions 29-31 are addressed below.

29 & 30. Snell et al’s (2016) report makes the following relevant points:

- employability (foundation) skills are not necessarily generic because the current VET system is characterised by strong industry input into the nature of the skills produced and supports clearly demarcated training territories resulting in a degree of occupational specificity
- the market-driven ‘user choice’ training system has enabled employers to develop narrowly defined skill sets which are mostly implicitly constructed and assessed as training outcomes, rather than explicit process inputs
  - we cannot assume the students have actually been trained in these skills
- the more distant two occupations are from each other in terms of job role, tasks and training package used, the less likely it is that these occupations will have shared skills.

Korbel and Misko (2016) found there were effectively 1644 training package qualifications ‘in use’ (incorporating superseded qualifications into current qualifications) in 2015. Of these, 31% of qualifications had around only 1% of enrolments and 20% of the qualifications had no recorded enrolments. At the other end of scale, enrolments were heavily concentrated in relatively few qualifications (93% of enrolments in 19% of qualifications).

Barriers in the design of the training system include:

- the orientation of the system is industry-based rather than occupation-based
- the concept of skills transferability must be understood by all key players (workers, current employers, future employers, training providers and job support agencies)
- the National Register of VET (maintained at training.gov.au) contains information on training products and components, but it is difficult to identify where units of competency are common across multiple qualifications or the links and threads between elements of the system (Korbel and Misko 2016).

31. The number of clusters of occupations sharing skills, knowledge and competencies could help determine whether a learning requirement can be met by a common unit of competency (Snell et al 2016) use a framework of 16 clusters from the O*Net database developed by the US Department of Labor/Employment and Training Administration).
Snell et al (2016) found significant differences in the sharing of units of competencies among qualifications, suggesting that some certificates provided a higher potential for occupational mobility than others. For example, the core units contained in the Certificate III in Engineering were shared on average by 45 other qualifications, whereas the Certificate IV in Credit Management averaged only seven other qualifications.

Snell et al (2016) also found:

- some units of competency are shared between quite dissimilar occupations in different occupational clusters
- units of competency with clearly developed generic hard skills (highly transferable) were not spread across a large number of qualifications
- some additional training or upskilling would be required for occupational mobility even within the same occupational cluster and same skill level

These findings suggest that the VET system and the current design of training packages may not be facilitating transferability at the level of competency to its full potential and in ways that contribute to the development of generic competencies that can be used not only within an occupational cluster but across any occupation.

References


Theme 8 discussion questions: Skill sets

33. What factors contribute to the use of skill sets by your organisation?

34. Should skill sets have a stronger link to the qualification?

35. Could skill sets be used as specialisation within a qualification? What would be the advantages and/or disadvantages?

36. Should skill sets for introductory level students, especially those without a school certificate, be only available after a student has already undertaken a qualification that includes foundation and future work skills?

37. Is there a better way to ensure skill sets meet the needs of industry and students?

COMMENT:

Questions 34-37 are addressed below.

34. The case for stronger links between skill sets and qualifications because it ‘ensures greater adaptability and ability to identify how a qualification is packaged’ is sound (from Training Product Reform: what is the case for change?, 2017).

35. Skill sets could be used as specialisation within a qualification. Mills et al (2012) found that while the core skills of most VET occupations have not changed significantly over the last 20 years, the environment in which skills are applied has changed. Changes are occurring at the job function level – not the whole occupation level – as a result of advances in IT, design technologies and communications, changes in regulatory frameworks (e.g. occupational health and safety, industry regulation, taxation) and advances in work organisation and practice. It follows then, that skill sets could be used to supplement the existing core knowledge a worker obtains throughout their qualification to build on core skills/upskill. The flexibility and responsiveness of skill sets also makes it possible to address the rapidly changing work environment.

Advantages of using skill sets to learn specialised skills that are supplementary to a full qualification (Mills et al. 2012):

- Aids engagement in VET, e.g. a ‘taster’ for future study.
- Broadens/deepens the skills and capabilities of already qualified workers.
- Provides flexibility and responsiveness to changing workforce skills needs. Misko et al (2014) found that flexibility and responsiveness in VET is being achieved well through skill sets.

A possible disadvantage:

- May impact negatively on the completion of a whole qualification (Mills et al 2012). If the skill set is being specifically used to upskill already qualified workers, this may not be a serious issue – it may only dissuade them from completing higher level qualifications.

36. Two arguments in favour of the uptake of skill sets by introductory level students (Mills et al 2012):

- Skill sets can be used as a stepping stone toward a full qualification. They may
provide opportunities to establish confidence among those who are daunted by undertaking a full qualification, particularly disadvantaged learners and those returning to education and training.

- Skill sets can aid engagement with nationally recognised training, especially by small to medium-sized businesses. Historically, barriers such as the time taken to complete a full qualification, administrative burden, or a qualification containing more units than a business requires their staff to complete have limited the use of nationally recognised training by these enterprises (e.g. the employer is paying for training their staff will not use).

Against:

- Skill sets for introductory level students may confine these students to narrow job roles and diminish their labour mobility. A student may stop training once they complete a skills set and take on a job in the narrow range that skill set has prepared them for. They may eventually be vulnerable in the labour market owing to the limited adaptability and mobility of their skills.

NCVER has found persistent evidence that individuals with qualifications are more likely to be employed, working full-time, and earning more than those without qualifications, which suggests that skill sets should primarily be used to supplement a full qualification (Stanwick 2005; Karmel & Nguyen 2007).

37. Skill set enrolments have increased 111.6% between 2015 and 2016 (153 700 to 325 200 with most growth in NSW) in total vet activity (NCVER 2017). In both years, the most common skill sets have addressed regulatory issues in the workplace such as responsible service of alcohol and a variety of first aid refresher courses.

Research shows that engagement with industry through networking, workplace visits, and industry representation on reference groups/assessment panels is an important way of identifying the needs of industry and students (Misko et al 2014).

Data in VET student outcomes 2017 show less than 30% of workers in all broad occupation categories, excepting trades and community and personal services with 41.9% and 40.1% respectively, find work aligned with their qualification (NCVER 2017). This pattern emphasizes the extent to which skill sets in one qualification can be applied to other fields.

Also see response to Theme 2, Question 10.

References


courses-2016.pdf


Theme 9 discussion questions: Accredited courses

38. Do you (or your organisation) use accredited courses? What is the primary benefit to you (or your organisation)?

39. Should there be tighter guidelines around what types of courses should be accredited? If so, what should they be?

COMMENT:

Questions 38-39 are addressed below.

38. NCVER’s survey of Employers’ Use and Views of the VET system 2017 shows that:
   - about half of employers use unaccredited training
   - their rate of use of these courses has been relatively stable since 2005
   - employers are generally quite satisfied with unaccredited training, with the percentage of satisfied respondents above 90% for all survey years, except 2017 when it declined to 88.5%
   - the main reasons for using unaccredited training were to:
     - provide skills required for the job (54.4%)
     - meet and maintain professional or industry standards (30.8%)
     - meet highly specific training needs (22.0%).
   - of employers who used unaccredited training, 54.7% of employers did not use an external training provider (similar to 2015), 19.7% used a private training provider (up 4.0 percentage points from 2015), and 12.7% used a professional or industry association, (similar to 2015)
   - NT employers were slightly more likely to use unaccredited training in 2017 (57.5%) than other states and territories, ranging from 45.4% in SA to 53.7% in the ACT
   - the industries most likely to use unaccredited training in 2017 were:
     - Financial and insurance services (68.2%)
     - Rental, hiring and real estate services (68.3%)
     - Public administration and safety (69.5%)
     - Education and training (68.0%).
   - the industries least likely to use unaccredited training in 2017 were:
     - Construction (39.6%)
     - Accommodation and food services (39.7%)
     - Electricity, gas, water and waste services (40.3%)
     - Agriculture, forestry and fishing (43.0%).
   - more employers use informal training than unaccredited training (72.1% of employers used informal training in 2007 and 81.4% in 2017, compared with 50.4% of employers who used unaccredited training in 2007 and 50.8% in 2017)
• about 55% of employers use the VET system
• their satisfaction with vocational qualifications ranges from 77.0% in 2005 to 75.4% in 2017 with a peak of 84.6% in 2011) (see Table 1, p. 13)

39. Given that unaccredited training is used by many employers, tighter guidelines may be helpful for quality control. Stricter guidelines on unaccredited courses would entail a set of standardised rules for developers which would make government endorsement and other regulatory processes more transparent, straightforward and easy to implement and can be referred to in dispute resolution. They also provide developers with some standardised principles and templates to guide their development processes. These activities also help to safeguard the rights of consumers to undertake nationally accredited training and to have these formally recognised either in formal qualifications or in statements of attainment (NCVER 2015).

Accredited courses have been criticised in previous reviews for being too broad and for being developed in isolation from the national system (NCVER 2015). While unaccredited courses may be more focussed, they may be even more likely to be developed in isolation. On the other hand, the high levels of satisfaction in the Survey suggest that quality may already be high and that unaccredited courses are addressing the gaps or weaknesses of accredited courses.

NCVER is currently conducting further research on employers’ use of unaccredited training, to be completed in December 2018.

Fowler (2017) argues that at higher VET levels (i.e. Diploma and above), accredited courses should be allowed equal and alternate status to training package qualifications. This is the boundary between VET and higher education (AQF 5/6), where knowledge and critical thinking become equal to or even more relevant than competency. This changed status would give self-accrediting institutions (universities) greater agility in course offerings between sub-bachelor and bachelor programs.

References

Fowler, C 2017, The boundaries and connections between the VET and higher education sectors: ‘confused, contested and collaborative’, NCVER, Adelaide, viewed 28 Feb 2018,

NCVER, 2015, Review of training packages and accredited courses, Submission to the VET Taskforce – Department of Industry, viewed 28 Feb 2018,