



# INCORPORATING DIGITAL SKILLS INTO VET DELIVERY

Given its ties to industry, vocational education and training (VET) has a crucial role in ensuring the workforce possesses the skills for responding to Industry 4.0, with advanced technologies now entering workplaces and transforming how businesses operate.

The aim of this good practice guide is to offer advice to providers and policy makers on the incorporation of digital skills into VET delivery.

A forum convened by NCVET in late 2019, *VET's response to Industry 4.0 and the digital economy: what works*, has helped to shape this guide.

Participants at the forum included representatives from skills service organisations, members of the Education Industry Reference Committee, industry, provider and practitioner-related bodies, policy makers and relevant researchers.

A companion good practice guide has been developed, with a focus on the implications for VET educators of the increasing need to include digital skills in VET delivery.

## KEY MESSAGES

- By adding digital skills to the suite of foundation skills, their prominence would be increased and their growing importance as fundamental to many occupations recognised.
- Units of competency, or short courses, that address specific digital skills could prepare the current workforce to adapt to and manage changing roles at work.
- Partnering with employers to develop digital skills training will ensure its relevance and transferability to industry.
- Encouraging lifelong learning, revising funding models, streamlining training package updates and providing greater flexibility in course design are needed to respond to Industry 4.0.

## ADDRESSING THE NEEDS OF THE CURRENT AND FUTURE WORKFORCES

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The VET sector has a role to play in skilling the future workforce, as well as in updating the skills of the current workforce. The integration of digital skills into VET delivery therefore needs to address the requirements of both these groups.

Digital skills not only refer to the more technical or expert skills such as those typically required for software development or complex coding, but also to those skills required to use digital technologies effectively for communicating and acquiring information and operating within a digital work environment.

### Creating specific units of competency, skill sets and short courses

Creating units of competency focused on specific digital skills could be an effective short-term strategy for updating the existing workforce. Although some training packages currently include units that address digital skills, many are outdated or are electives only, meaning that a student can complete a qualification without undertaking them (Gekara et al. 2017; IBSA 2017). If these units were established as core units, then obtaining a qualification would depend on their completion. Another approach could be the development of a set of core digital skills–related units at all Australian Qualifications Framework (AQF) levels, contextualising them to different industries, using Companion Volumes.

One obvious benefit of creating specific units of competency focused on different types of digital skills (for example, automation and cyber security) is that the current workforce would therefore be able to complete a module or skill set to enhance their skills rather than a full qualification.

Some changes are required for an approach such as this to be implemented and include:

- Providing greater flexibility for VET trainers and providers to pick and choose units of competency to tailor training to suit a learner’s needs. Although some degree of flexibility already exists, the structure of training packages and the way they are used for regulatory purposes currently limit their adaptability.
- Developing units of competency that can be used across a number of similar occupational groups rather than creating new units. One potential way to identify core and shared skills is to require each industry reference committee (or its equivalent) to report against digital skills requirements as part of a checklist in their annual industry skills forecasts. In some instances, it may be possible to adapt current units of competency to extend their application to other sectors.
- Developing a faster and more efficient way for updating content in training packages, given the speed at which new technology is being introduced and old technology superseded. The *Joyce Review* reports that the process for updating a qualification can take from 12 months to several years, and in some cases these qualifications are out of date before they are taught (2019, p.57).

### Incorporating digital skills into foundation skills

In addition to creating specific units of competency, a longer-term strategy for embedding digital skills into VET delivery is to ensure that they become a key component of foundation skills and receive the same prominence as occurs with language, literacy and numeracy, especially since digital skills are now seen as fundamental to many occupations.

Incorporating digital skills into the Australian Core Skills Framework would be one approach to achieving this. The framework currently details performance in five core skill areas: learning, reading, writing, oral communication and numeracy. Adding a sixth core skill – digital skills – would address the issue at the foundation skill level and reinforce their growing importance in the workplace.

A benefit of this approach is that the addition of a core skill covering digital skills would build onto an existing framework. It would also be a significant step in ensuring that the future workforce has the core digital skills required for employment and training. The potential implications for the VET educator workforce of embedding digital skills into VET delivery are addressed in the companion piece, *Teaching digital skills: implications for VET educators – good practice guide*.



## PARTNERING WITH EMPLOYERS WHEN DESIGNING AND DELIVERING UNITS

For the following reasons it is important that VET providers and training package developers partner with employers when designing and delivering the units of competency that address digital skills:

- Involving them early ensures that both agree on the skills required, especially in instances where there is a clear application of technology (such as in the case study described below). However, in industries where the technologies are continually evolving, employers may not necessarily be aware of the skills they will need in the future or the type of training required.
- VET teaches the basic concepts in the area but the workplace is where a person becomes proficient. For example, during training a student may learn the capabilities of different types of technology and what they are used for, but it is in the workplace they learn how to use specific technology (that is, brand, model etc.).
- Employers can play a role in the development of course content by offering workplace experience or work-integrated learning, as well as ensuring any simulations in class are relevant to the industry and represent current best practices.

Getting the most appropriate employers involved in designing and delivering digital skills units is critical. The current and future workforce needs to be trained to meet the skill needs of innovative employers. By learning about innovative technologies during their training, workers are able to introduce newer practices into less technologically advanced workplaces.

### CASE STUDY: Qualifications and skill sets in automation

In October 2017, the West Australian Government, South Metropolitan TAFE and Rio Tinto announced a partnership to develop qualifications and skill sets in automation to meet the future needs of the resources sector. Rio Tinto committed up to \$2 million towards the initiative and, along with South Metropolitan TAFE, established automation working groups, with representatives from industry, education and government in 2018.

The development of these courses was supported and funded by Rio Tinto. The approach adopted highlighted the value of industry, education and government working together to ensure that current and future resource industry workforces are equipped with vital skills. Features of the approach included:

- Partnering with the resource sector to understand the issues they were facing and what they needed addressed.
- Establishing automation working groups to support the development of the qualifications. With broad representation beyond the initial employer, these groups were effective due to the greater knowledge and skills they brought.
- Completing a training needs analysis with the current Rio Tinto staff in the remote operations centre to assist in the development of the certificate IV qualification.
- Piloting courses with a small group of Rio Tinto employees and selected regional and metropolitan VET in Schools students.
- Ensuring that the courses are not specific to a single employer and that course content can be customised to other employers as required.

During 2019, both the qualifications and the skill set were accredited by the WA Training Accreditation Council: Certificate II in Autonomous Workplace Operations; Micro Credential Course in Working Effectively in an Automated Workplace; and Certificate IV in Autonomous Control and Remote Operations.

## CHANGES REQUIRED TO THE VET SYSTEM TO ENABLE IMPLEMENTATION

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As well as the provision of more timely updates to units of competency and programs as technology advances, a number of governance issues need to be addressed to enable digital skills to be successfully integrated into VET offerings. They include:

- streamlining the competency-development process and reducing the length of time taken to update and approve new training package content
- revising funding models to allow a greater number of short, or modular, programs to be studied, which will become increasingly important as workers more regularly update their skills
- providing greater flexibility for trainers and a better understanding of how to customise delivery to learners; for example, by selecting units of competency from across training packages and teaching beyond the core requirements to connect with industry practice
- developing a lifelong learning policy to acknowledge the need for workers to update their skills over their careers in order to adapt to and manage changing roles at work. One potential avenue is a ‘lifelong skills account’, a scheme potentially providing access to a government subsidy for accredited learning and an income-contingent loan, both with lifetime caps (Business Council of Australia 2017).

The review of the VET system and the review of the AQF, both released in 2019, support similar ideas and are areas of interest to the COAG Skills Council in 2020.

## REFERENCES

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## FOR MORE INFORMATION

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These findings are based on an invitation-only forum held by NCVET, *VET’s response to Industry 4.0 and the digital economy: what works*, in November 2019. Additional related publications published by NCVET are:

*VET’s response to Industry 4.0 and the digital economy: what works – support document* by Bridget Wibrow, Michelle Circelli and Patrick Korbel, and *Teaching digital skills: implications for VET educators – good practice guide*. Both are available at <[www.ncver.edu.au](http://www.ncver.edu.au)>.



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