

Online delivery of VET qualifications: current use and outcomes

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About the research

Online delivery of VET qualifications: current use and outcomes

Tabatha Griffin and Mandy Mihelic, National Centre for Vocational Education Research

The online delivery of training is well established in the vocational education and training (VET) sector, and it is not unusual for a course to include training that is delivered online in one or more units. However, little is known about the online delivery of entire qualifications in VET and how this works, given the overarching role of the competency-based training system in the sector.

This research provides a contemporary view of how online learning is used to deliver complete qualifications in the Australian VET sector. It estimates the extent to which entire qualifications are delivered online, as well as investigates the nature of this online delivery and whether this training is providing students with a similar experience and outcomes to that of face-to-face training. The final element of this research identifies the factors that contribute to good practice in online delivery.

Key messages

- It is estimated that 8.6% of all VET program commencements in 2017 were in courses delivered fully online. While this proportion appears relatively small, it is not insignificant, noting that in New South Wales and Queensland more than 10% of courses are delivered fully online.
- Online VET is characterised by higher subject withdrawal rates and lower course completion rates. Analysis of 17 qualifications across six subject areas revealed that qualification completion rates for fully online courses are consistently lower than for all other modes of delivery.
- Higher subject withdrawals and course non-completion can be due to many factors, such as poor quality training, the delivery mode not suiting the student, issues with securing a work placement (if required), or the student lacking access to the necessary tools or technology to complete the course. This research cannot differentiate between these reasons due to limitations in the available data.
- For those students who completed an online course, the outcomes were mixed but in general, comparable to other delivery modes. Overall, student satisfaction measures were lower for graduates of courses delivered online, although they were still relatively quite high. For many of the individual qualifications examined, satisfaction with teaching (one of the satisfaction measures) was lower for courses delivered online. Conversely, for many of the qualifications, graduates who studied online were more likely to report they had achieved the main reason for doing the training. Additionally, the employment outcomes for graduates of online courses were similar to, or slightly better than, those of graduates of courses delivered via other modes.
- The attributes of good practice in online delivery include:
 - a positive and supportive attitude and ethos in the training provider
 - students with realistic expectations of the course and delivery mode on enrolment

- well-structured, up-to-date and engaging resources that cater to a range of learning preferences
- an effective and accessible student support system
- highly skilled and knowledgeable teachers and trainers, who display empathy and are creative problem-solvers.

Many of these attributes of good practice are not unique to the online delivery context but how they are implemented may be.

Simon Walker

Managing Director, NCVET

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High-quality online delivery of VET can result in good outcomes for those students who are suited to that delivery mode.



Executive summary

Online learning is well entrenched in Australian education, including in the vocational education and training (VET) sector. However, since the VET sector is underpinned by a competency-based training system, it may experience unique challenges in the use of online learning as a delivery mode. The integrity and ultimate success of the sector is based on students demonstrating they are competent in skills that can be transferred directly to the workplace, raising questions about how suitable online learning might be for VET, especially for those courses focused on practical or physical activities.

While the use of online learning has increased in all education sectors internationally and in Australia, there is a lack of evidence for how much is currently delivered online in Australian VET which this report seeks to fill. A particular focus are fully online courses where an entire qualification is completed online. In addition to the extent of full online qualification delivery, this report gives a better understanding of whether online qualifications provide students with the same experience and outcomes as do face-to-face courses. This study also identifies the elements that constitute good online delivery.

To get a picture of the levels of VET delivered online (defined as predominantly electronic-based in the National VET Provider Collection) over time, it is necessary to look at government-funded training since total VET activity has only been collected since 2014. Over time, for individual VET subjects, the extent of online delivery roughly doubled between 2010 and 2017 (from 6% to 13%).

While these figures demonstrate an increase in the online delivery of VET at the subject level, the key interest to this project is the online delivery of entire qualifications. For full qualifications (analysed for 2015–17), government-funded online delivery slightly increased as a proportion of all delivery, from around 5% to over 7%. However, for total VET activity, which includes fee-for-service and government-funded training, the online delivery of full qualifications decreased from around 10% of all delivery in 2015 to 8.6% in 2017. Hence, the growth in online learning for full qualifications appears to have slowed in recent years, largely due to a dramatic decrease in commencements for online fee-for-service diploma or higher qualifications over that three-year period, which may be associated with changes to the VET FEE-HELP scheme which focussed on higher qualification levels.

While the proportion of full VET qualifications conducted online appears relatively small, it is not insignificant. This is particularly true in New South Wales and Queensland, where more than 10% of delivery is conducted online. It is therefore important to understand how it is delivered and how the outcomes for students compare with other, more traditional, forms of delivery.

Teachers and trainers, when interviewed, indicated that online learning, like any form of learning, does not suit every individual or situation. It is inherently different from other delivery modes and comes with its own advantages and disadvantages. The disadvantages – such as feeling isolated, the requirement for high levels of self-discipline, or an incompatible learning style – may mean that some students find it more difficult to complete the training, or do not enjoy it. This mismatch for some individuals may partly be reflected in the higher subject withdrawal rates and lower course completion rates seen in online delivery.

Withdrawal rates were around 10% higher for online subjects and completion rates for courses delivered entirely online around 10% lower in 2016. Higher subject withdrawals and lower course completions may be due to a variety of reasons, such as the delivery mode not suiting the student, the student's inability to secure a work placement (if required), or the student not having the necessary tools or technology to participate in the course (for example, access to a computer, specific software or adequate internet access). Poor-quality delivery may also lead to higher subject withdrawals and lower course completions, but this analysis cannot differentiate between this and other non-quality related reasons.

For those students who do complete online qualifications, satisfaction measures are lower for graduates of courses delivered online, although still relatively high. Qualifications in six different subject areas were also examined. Across many of these courses, graduates of online courses were less satisfied with the teaching although were often more likely to report they had achieved their main reason for doing the training. Across these six subject areas, the greatest number of differences in student satisfaction measures were noted in two fitness qualifications, where almost all satisfaction measures were lower for the courses delivered online. Notably, of the individual qualifications investigated, the fitness qualifications are those where training and assessment involve the most physical activity and, hence, may be less compatible with delivery in a fully online environment. It is important to note that, unlike for some of the community services qualifications (that are also quite practical in comparison to the other qualifications examined), work placement is only suggested, and not required, for these fitness qualifications. This leads to a further question of whether there is any difference in student satisfaction with fitness qualifications that include a work placement compared with those that do not. However, this cannot be determined from this analysis.

Employment outcomes for students who graduated from online courses are mostly similar to, or slightly higher than, those for courses delivered via other modes. These positive outcomes can be viewed as offsetting some of the more subjective satisfaction measures which were already quite mixed. Hence the evidence suggests that while students are less likely to complete an online qualification, if they do, their employment outcomes are comparable with graduates of non-online courses.

These course completion rates, student satisfaction measures and employment outcomes need to be considered in the light of the data limitations. The analysis of the National VET Provider Collection is limited by the proxy used for 'online delivery'; defined as delivery predominantly electronic-based. Moreover, this characteristic is collected at the subject level, with sophisticated matching techniques required to construct program-level data, a further limitation. Similarly, for the National Student Outcomes Survey, the analysis is limited by how online learning is defined and the coverage of the survey. A more accurate picture of the extent of online delivery in VET, as well as student satisfaction and employment outcomes, would require a more targeted and specific data collection. Overall, with these limitations, we cannot confirm or preclude quality issues or any other reasons for the higher subject withdrawals and lower course completion rates seen in online delivery.

Given that online delivery in VET is used by around a tenth of VET students at the program level, the quality is important. From the regulator's perspective, the quality of an online course is measured by its compliance with the 'Standards for RTOs 2015'. The Australian Skills Quality Authority (ASQA) reports that auditors use the same audit approach for registered training organisations (RTOs) whose students undertake online training as for

those where courses are face-to-face. Specifically in regard to online delivery, ASQA advises that RTOs must ensure that the delivery mode is appropriate for the course and that the resources required to support online delivery are adequate.

Interviews with teachers/trainers and other RTO staff revealed, however, that some feel that RTOs delivering online programs are disadvantaged and that many auditors have a negative view of online delivery. These interviewees want online and face-to-face delivery to be judged fairly and equally and spoke very highly of the quality assurance procedures in place at their RTOs. To alleviate some of the challenges faced by RTOs in the delivery of online VET, a more risk-based approach to assessment requirements and the auditing process was suggested.

A number of the teachers and trainers interviewed for the research (from the qualification areas selected for examination) reported that online delivery has changed very little over the past 10 years, with the possible exception of the use of higher-quality graphics and chat bots. The online tools described by the teachers and trainers included:

- course content: text-based materials, videos, links to external sources of information and interactive elements
- engagement among students: online conferencing tools, forums and Facebook groups
- communication between the student and trainer: email, phone, Skype and the online learning messaging system
- assessment: short automated quizzes (not necessarily formal assessment), written work, recorded videos, virtual labs, live video and phone.

Of interest to this research was the approach adopted for non-online elements. The training packages for some courses specify the requirement (or a suggestion) for a work placement. Online delivery of these qualifications does not preclude these requirements, and interviewees described how students were required, and often supported, to find appropriate work placements. This demonstrates that, while these courses are considered and marketed as online, the work placement element ensures that students can learn and demonstrate competence of their skills in an authentic workplace.

The attributes of good practice in online delivery were identified from the interviews with trainers and other RTO staff and subsequently categorised into five components:

- *The training provider and staff*: the attitude and ethos of the training provider plays an important role in good online delivery. Good intentions of the provider and staff set the tone for high-quality training and assessment, regardless of the mode of delivery.
- *Before and on enrolment*: ensuring that students have realistic expectations of the course and delivery mode helps students to make informed decisions about their training. Informing students about any non-online elements, such as work placements, and what they'll need to do to complete the course will help to reduce the chance of students enrolling in a course that does not suit their learning style or situation.
- *The online learning platform, resources and assessment*: the system needs to be easy to navigate and use and the resources well-structured, up-to-date and engaging. Content should be delivered in a variety of ways to cater to different learning styles and should be developed specifically for online delivery.

- *Student support and communication:* an effective student support system is integral to good online delivery of VET. How support is provided may depend on student numbers and, hence, may be provided by an individual teacher/trainer, or by a dedicated support team. Support should be offered in a variety of ways to suit the communication style and the various commitments of the learners.

Building a relationship between the teachers/trainers and the students was another element of good practice. This ensures that students feel less isolated – understanding that there is a trainer available to support them – and assists in identifying plagiarism and issues of authenticity.

- *Quality and the attributes of teachers/trainers:* the involvement of highly skilled and knowledgeable teachers and trainers, as well as displaying empathy and being creative problem-solvers, is an important attribute of good practice. The dedicated commitment of teachers and trainers to see students succeed helps to enable good outcomes for students.

Many of these attributes of good practice are not unique to the online delivery context but how they are implemented may be.

In conclusion, the characteristics of online delivery mean that it is not appropriate for all individuals or for all situations. However, high-quality online delivery can lead to a positive training experience and good employment outcomes for individuals who are suited to that delivery mode.

Introduction

Online learning, in some form, is utilised in all education sectors: school, VET and higher education. In Australia, VET is based on a competency-based training system, with its focus on what learners can do in the workplace – a different approach from that adopted by schools and higher education. The practical component of this system may mean that some types of courses lend themselves to being delivered fully online more than others. Here ‘fully online learning’ is understood as learning that is undertaken in online environments by individuals working remotely from classrooms and interacting with teachers, peers and other experts by means of various electronic applications and communication channels (including internet forums, chat rooms, emails and telephone). In this context, assessment is also undertaken online.

Since very little recent research on the quality and effectiveness of VET courses delivered completely online is available, governments have little basis on which to develop policy with regard to regulation, quality compliance, funding support, cohort engagement, employer engagement, or any other public policy aspect.

This report examines the current landscape of online learning delivery in Australia, including:

- how it is used by providers and learners
- whether learners achieve the same outcomes as from classroom-based training
- the issue of quality.

From this, it also identifies the attributes of good practice to assist learners to make better online learning choices and maximise their learner experience and outcomes.

Research questions

The research questions are:

- *Context:* What is the nature and extent of the online learning activity currently undertaken in the Australian VET sector?
- *Outcomes:* In comparing fully online learning with other delivery methods, are there any differences in course completions, learner satisfaction with the training, and employment outcomes?
- *Quality:*
 - For trainers who deliver online, what are their perceptions of the advantages and disadvantages of this form of delivery by comparison with alternatives? For any disadvantages, what are the solutions to mitigate these?
 - Given the increasing use of online learning in the VET sector, what is the nature and extent of professional development in this area currently occurring?
 - For regulators, what are the key aspects of online learning that are targeted?
- *Attributes:* What are the characteristics of good practice in the delivery of online learning?

Methodology

This research used a mixed methods approach, involving:

- an analysis of the National VET Provider Collection¹ to explore commencements and course completion rates in online training versus classroom-based training
- an analysis of the National Student Outcomes Survey² to understand the employment outcomes and satisfaction of students who have completed online courses
- semi-structured interviews with teachers/trainers/assessors and other RTO staff to understand how online delivery is used and what elements are deemed important for successful outcomes
- desktop research involving an analysis of websites and other documents to investigate the perspective of regulators.

Overall trends were investigated across all qualifications in the analyses of the National VET Provider Collection and the National Student Outcomes Survey. In addition to this, several qualifications were selected for a more detailed analysis. These selections were based on:

- advice from the Project Advisory Committee on qualifications that are likely candidates for online delivery, as well as some that might not so easily fit an online mode of delivery
- a spread across qualification levels and fields of education
- relatively high numbers of enrolments in 2017 with a reasonable split between electronic and classroom-based delivery (to enable comparisons).

The selected qualifications are shown in table 1.

While this research is primarily focused on courses delivered online in their entirety, some of these qualifications require, or benefit from, some form of work placement. For example, the Diploma of Community Services specifies 100 hours of work placement, while for the Certificate III and Certificate IV in Fitness, 30 and 40 hours of work placement, respectively, is strongly recommended. How these courses are provided through online learning, given the work placement requirements/suggestions, is of interest to this research.

These qualifications were also used in the qualitative element of this research to form the basis of selection of teachers/trainers and other RTO staff for interviews.

Interviewees for the qualitative element of the project were recruited by contacting the 82 RTOs that had reported a substantial amount of electronic-based delivery for the qualifications listed above, as identified through the National VET Provider Collection. Contact details were then sourced from <training.gov.au> and invitations to participate were sent via email.

1 Specific details of the analysis of the National VET Provider Collection are provided in the relevant sections of this report.

2 Specific details of the analysis of the National Student Outcomes Survey are provided in the relevant sections of this report.

Table 1 Qualifications selected for detailed analysis

Qualifications
BSB30415 – Certificate III in Business Administration
BSB40515 – Certificate IV in Business Administration
BSB50415 – Diploma of Business Administration
CHC32015 – Certificate III in Community Services
CHC42015 – Certificate IV in Community Services
CHC52015 – Diploma of Community Services
CPP30211 – Certificate III in Property Services (Agency)
CPP40307 – Certificate IV in Property Services (Real Estate)
CPP50307 – Diploma of Property Services (Agency Management)
FNS40217 – Certificate IV in Accounting and Bookkeeping
FNS50217 – Diploma of Accounting
FNS60217 – Advanced Diploma of Accounting
ICT30115 – Certificate III in Information, Digital Media and Technology
ICT40115 – Certificate IV in Information Technology
ICT50115 – Diploma of Information Technology
SIS30315 – Certificate III in Fitness
SIS40215 – Certificate IV in Fitness

Follow-up emails were sent to a selected number of RTOs to ensure that the subject areas of interest were covered.

In total, 25 interviews were conducted with trainers from seven RTOs across the six subject areas (table 2). In addition to these, interviews were held with six individuals who were not trainers but who were familiar with the online delivery of training in their respective RTOs. In some cases, the teachers and trainers who agreed to be interviewed may have taught courses in other areas, despite the RTO being approached because it provided training in one of the six subject areas of interest.

The RTOs were a mix of public and private RTOs and varied in the number and breadth of qualifications on scope. Some RTOs only delivered training online, while others used a variety of delivery modes.

Interviews were semi-structured, conducted by phone throughout February and April 2019, and were 45 to 60 minutes in duration. The responses to interview questions were analysed thematically.

Table 2 Number of interviewees per subject area

	Business administration	Community services	Property services	Accounting	Information, digital media & technology	Fitness	Non-teaching
RTO 1	3			1*			
RTO 2			2				1
RTO 3			1				1
RTO 4				1			
RTO 5						1	
RTO 6	3	3	2	2	3		3
RTO 7		3			2		1**

Notes: * This teacher also provided training in business administration.
 ** This interviewee also provided training in information technology.

Structure of report

This report is divided into five main sections. These are:

- defining online learning and how online learning is used in VET
- the extent of online learning, especially in Australian VET
- the student experience and outcomes of online learning in Australian VET
- quality in online learning
- the attributes of good practice.



Defining 'online learning'

What is online learning?

The concept of online learning has evolved over time in line with changing technologies and how they are used. Various terminologies have been adopted throughout this evolution and there is still no standard definition of online learning.

The definition of online learning may differ from country to country (Huertas et al. 2018) and many terms are used interchangeably in the literature. The difficulty in defining online learning is that the terminology can struggle to keep up with the fast-changing use of technology in education (Bates 2008).

In determining a framework for this research, the following terms are considered.

Online learning

Online learning is a form of education whereby the primary delivery mechanism is via the internet (Bates 2008). It involves engaging in learning through the internet on any type of device, in real time or through recorded or written information (Uni-prep 2013).

In online learning, a student may never be face-to-face with the teacher/trainer or other students (Uni-prep 2013) and it is therefore considered a form of distance learning (Bates 2008). Modern technology, however, allows students to interact with teachers/trainers and other students through video-conferencing, emulating a classroom learning environment (Uni-prep 2013). Whether or not this is still considered a fully online course in its purest form, may be a point of contention.

Online learning may be delivered synchronously or asynchronously:

- Synchronous online learning is where students and a teacher/trainer participate at the same time but at separate locations. This may include video, web or audio conferencing (Huertas et al. 2018).
- Asynchronous online learning occurs when students are not required to participate in sessions at the same time as the teacher/trainer (Huertas et al. 2018).

E-learning

'E-learning' is a term often used interchangeably with 'online learning' but can be considered broader than this. Bates (2008) describes e-learning as embracing all forms of digital learning, including fully online, blended, hybrid and digital classroom aids. It can be defined as 'all computer and internet-based activities that support teaching and learning – both on-campus and at a distance' (Bates 2008). It therefore includes administrative, as well as academic, uses of the information and communication technologies that support learning. Thus, e-learning can be considered as a broad umbrella under which online learning sits.

In the Australian VET sector, the term 'e-learning' was used widely in the era of the Australian Flexible Learning Framework, which operated from 2000 until 2011, and subsequently the National VET E-learning Strategy 2012–15 (Department of Industry,

Innovation, Science, Research and Tertiary Education 2012). Hence, much of the Australian research published in that time was based on e-learning.

Blended or hybrid learning

‘Blended learning’ is where online and face-to-face learning are combined in some way (Bates 2008; Downing, Brennan Kemmis & Ahern 2014). The degree to which the face-to-face and online components are used can vary. Some courses may be predominantly face-to-face, with a small amount of online learning; some may be mostly online, with a small face-to-face component.

One form of blended learning is the ‘flipped classroom’, whereby a lecture or information is provided online for the students prior to face-to-face time, which is then used for discussion or activities related to the provided information (Bates 2008).

Distance learning

‘Distance learning’ refers to the geographical aspect of learning and involves students being separated from instructors and peers (Uni-prep 2013). These days, distance learning is mostly undertaken via online learning (Norton & Cherastidtham 2018), although it can also involve sending materials via post.

In the context of this report, online learning is considered a form of distance learning, as it is conducted in a different location from the teacher/training and peers. Indeed, many of the teachers/trainers interviewed referred to their online students as external or distance students.

Online course/qualification (fully online)

What constitutes a fully online course, program or qualification is difficult to define. Huertas et al. (2018) define an online program as ‘a fully creditable programme that can be completed entirely by taking online courses, without the need for any on-campus classes’.

Some institutions, however, define an online course as one which is either fully online, or where at least 80% is online (Uni-prep 2013). While this definition has its roots in the higher education sector, in the VET sector this might include situations where the course is:

- partially online, whereby all off-the-job training is done online but a block of on-the-job training is conducted
- fully online but assessment is conducted face to face.

Notably, some VET qualifications cannot be completed without a work placement, which often involves elements of assessment.

In line with this, the current delivery mode identifier for VET data collected under AVETMISS³ release 8.0 can be used to identify training that is delivered in more than one mode, for example, a mix of classroom-based and external delivery (NCVER 2018a). Note that this is recorded at the subject level, not at the qualification level.

³ The Australian Vocational Education and Training Management Statistical Standard (AVETMISS) for VET providers is the data standard for the National VET Provider Collection.

In the context of this research

This research is interested in courses that are completed entirely online, including assessment, with no face-to-face element. However, the extent to which fully online VET courses are delivered in Australia is unclear (and is likely to differ across fields of education and qualifications). Also unclear is how courses that require a work placement are marketed and delivered as online courses.

Identifying which VET qualifications are fully online (that is, with no face-to-face element) is difficult. This is due to both the way in which the data are collected/coded (discussed further throughout this report) and how courses are promoted and delivered by RTOs. Hence, for this research, while the initial focus was on qualifications that were fully online, some flexibility about what this means was required.

Indeed, some interviewees agreed that defining a fully online course is difficult, highlighting a variety of course elements – some of which would not be considered online – used in the delivery of courses described as fully online. The next section details these examples.

How online learning is used in VET: findings from interviews

A challenge for teachers and trainers in developing an online learning environment in the VET sector is to create activities that feel authentic and which will develop skills for the tasks and situations required in the real workplace (Downing, Brennan Kemmis & Ahern 2014). This is likely to be particularly challenging for the more practical hands-on tasks, especially in courses delivered fully online.

How teachers and trainers approach the online delivery of training and their perceptions of the advantages and disadvantages of online learning in VET were explored via interviews. Note that this discussion is limited to interviews with trainers in the six subject areas of interest and, hence, may not be representative of online delivery in other types of courses or at other RTOs.

Online tools used

Overall, a variety of platforms and tools were described. Some RTOs are using ‘off-the-shelf’ online learning platforms, while others are using fully custom-built systems. Some of the online learning platforms used are integrated into student management, learning management and AVETMISS reporting systems.

Most of the teaching tools utilised by the trainers were dictated by the online learning platform in place at the RTO, although not all of the available features were necessarily used. There was an overarching sense that trainers (and RTOs) were attempting to improve their online courses by adding new tools and ways of interacting with their students through the online learning platform. Hence, examples were provided where various tools had just been implemented or were being considered for the future.

The tools used generally fell into four categories of function:

- the provision of course material
- tools to facilitate engagement among students (as well as with the trainer)
- one-on-one communication between the students and the trainer
- assessment.

Provision of course materials

Trainers described a variety of ways by which resources and course materials are provided through the online learning platforms. These included text-based materials, videos, links to external information sources, interactive elements and the availability of e-books for downloading. Interestingly, a couple of trainers spoke of situations where hard-copy textbooks or other materials are sent to students if required, emphasising that online learning overlaps significantly with the concept of distance learning.

Tools to facilitate engagement

Some trainers discussed the use of online video-conferencing tools, such as GoTo Webinar, to construct a virtual classroom situation. These virtual classrooms were used as another mode for presenting subject matter to students, as well as facilitating engagement among students and a sense of belonging and camaraderie. This approach was seen by one trainer as a way to ensure that online learning is not merely a ‘two-dimensional platform’.

Forums were also used by trainers to varying degrees to encourage discussion among students. Facebook groups where students can connect were also used. However, students differed in the extent to which they engaged with forums and Facebook groups, with some not engaging with them at all.

One-on-one communication

Several methods for communicating one-on-one with students were described by the trainers interviewed and included the online learning platform messaging function, email, Skype and phone.

Email was the most commonly mentioned tool for communication. In some cases this was preferred to the messaging function available through the online learning platform as it is easily accessible on any device (which was important for trainers who are not always on campus), meaning that simple requests can be quickly answered from anywhere.

Trainers also often use the phone for communicating with students, at least to some degree. Phone contact is often used at the beginning of a course, either to ‘counsel’ the student into the course, or to welcome the student and begin the relationship-building process. Throughout the course, phone contact is used for several reasons: responding to student queries; for regular touch points; and to follow up on students who are considered at risk of not completing the course.

The amount of direct phone contact between the trainer and students seems to depend somewhat on the number of students enrolled in a course. For smaller courses (with fewer students), phone contact is seen as an important part of building the student-trainer relationship and can be initiated by both the trainer and the student. For larger courses, with more students, regular phone contact with all students is not logistically possible. In this situation most phone contact is initiated by students when they need help with their course. Often students call through to a support team and referred to a trainer if required.

Assessment

For both face-to-face students and their online counterparts, assessment tends to be conducted through the available online learning platforms. Some forms of assessment are automated – especially for professional development courses. These are often in the form of short quizzes, whereby the system tells the student when they have answered incorrectly. Automated quizzes are also sometimes used as checkpoints for students to ensure they have understood a body of content before progressing through the course (and therefore not considered as assessment tasks). Most assessment was submitted through the system to an assessor.

Assessment submitted through the online learning platform could take a variety of forms, such as written work or videos that demonstrate the student doing a task. In the information technology (IT) area, virtual labs are also used.

Live video for assessment is used in some RTOs, especially as a way to fulfil the training package requirements of the course. In the community services area, for example, live video is used to fulfil the requirement of supervised counselling sessions.

Trainers from one RTO described the introduction of verbal assessment by phone. Phone assessment enabled the use of role play to determine how students react to different scenarios. Assessment by phone is also used by another RTO in special circumstances, for example, where a student has been taken offline.

Structure of online courses

Interviewees from several RTOs made the point that both the content provided and the assessment activities required of the students are context-based. Examples were given where the RTOs had created virtual businesses for its subject areas, complete with websites containing links to documents such as policies, procedures and style guides, and working phone numbers. The students become ‘employees’ of these businesses and base their training and assessment around this.

Interviewees from other RTOs talked about the courses and materials being clustered around tasks rather than focused on individual units of competency to ensure they were more applicable to usage in the workplace.

Advanced and novel technologies

Two trainers who have been delivering online learning for some time suggested that online delivery has not changed a great deal over time. They explained:

Not much has really changed since I started this in 2003. We’re not providing full motion videos – the bandwidth won’t allow it. (Information technology)

Haven’t really seen much change over the last 10 years – except maybe for flashier graphics. There’s a cost-benefit analysis of doing something different – why change it if we’re doing well? There’s no advantage to upgrade anything. Nothing much has changed – the Skype we have now is basically the same as 10 years ago.

(Leadership and management)

In support of these statements, no examples of what might be considered more recent technological advances, such as virtual reality and augmented reality, were mentioned as

being used by these teachers and trainers for training or assessment. In fact, one trainer from the community services area stated: ‘we’re just not there yet’. This trainer suggested that these technologies are more prevalent in unaccredited training, but this is beyond the scope of this research.

Non-online elements

Of interest to this research, and relevant to how a fully online course might be defined, are the non-online elements used by teachers/trainers and students in courses described as fully online. As noted earlier, some courses require some form of work placement (for some courses it is not required, although strongly recommended). The interviewees involved in these courses were able to describe how online learning works in these situations.

One interviewee from an RTO specialising in the online provision of Certificate III and Certificate IV in Fitness described how they use ‘delivery partners’ to ensure students get workplace experience: ‘There’s no way these fitness qualifications can be delivered entirely online ... we use an online medium, but with practical elements’.

This trainer explained that, through the online learning platform, students have access to resources such as videos and learner guides and can communicate with the trainer/assessor. The practical components of these courses, however, are undertaken with the delivery partners, which are usually gyms. Students then send the evidence, such as reports from partnership staff or videos, through to the RTO for assessment.

Work placements were also described by trainers in the community services area. In one RTO, the trainer visits the student in the workplace, thus meeting face-to-face on at least one occasion.

Even in courses where work placements are not required, visits to workplaces can be beneficial, although they are usually associated with courses delivered in the classroom. However, a trainer who delivers training in the business services area spoke of how online students – if they wished and were located nearby – are invited to join the classroom-based students on workplace visits.

In some situations, students may already be employed in the area in which they are training (a traineeship, for example). In these cases, their online course is likely supplemented by learning in the workplace and their assessment tasks contextualised to their workplace.

Some trainers described online courses in which students were invited to visit the campus to see the trainers if they needed to, or where short face-to-face group sessions were offered.

We used to do Saturday workshops, where students could come in and get face-to-face help. We haven’t done them for a while, but we used to. (Community services)

Of course, these face-to-face opportunities are only possible for students whose personal circumstances, such as proximity to the campus, enable their attendance.

The examples given above provide instances in which students are conducting part of their online course in non-online environments and situations, such that students and teachers/trainers may meet face-to-face. In these instances, a purist’s definition of online learning, where there is no face-to-face contact or workplace learning, does not apply.

Advantages and disadvantages of online learning

The advantages of online learning are widely documented, particularly in web-based marketing, where online courses are marketed to potential students. Often-cited advantages include:

- *Flexibility*: students are able to study at any time and at their own pace. This is particularly useful for those with other commitments, such as family or work.
- *Access to study from anywhere (provided they have internet access)*: this is particularly useful for those who live remotely, are travelling or want to study while at work.
- *Preference for the learning style*: this may especially suit students who are uncomfortable in a classroom situation, as well as those who want to learn at their own pace.
- *Lower cost*: online courses are often less expensive (with no additional costs for travel, car parking etc.).

The disadvantages are also well-described, the major ones including:

- lack of face-to-face contact with the teacher
- lack of camaraderie with fellow students, leading to feelings of isolation and a lack of connectedness
- the requirement for immense self-discipline
- technical issues, including poor internet speeds.

These advantages and disadvantages are not specific to online training in the VET sector. To obtain a more nuanced view of how online learning is perceived in the VET sector, trainers were asked in the interviews to describe their views on the advantages and disadvantages of online training.

Advantages

The advantages described by trainers for both students and for RTOs/trainers are presented in table 3. The advantages for students mostly fall into three categories: accessibility, efficiency and cost. This supports what has been previously reported in the literature.

The advantages for trainers and RTOs were varied and covered areas such as easier access and greater efficiencies for trainers, better service for students and administrative benefits.

Disadvantages

Interviewees were asked to identify the disadvantages of online learning (table 4). Interestingly, some disadvantages are a direct result of some of the advantages listed above. For example, the flexibility of being able to study at a time suitable to the student (seen as an advantage) means there is no set timetable (considered a disadvantage by some). This demonstrates the point made by some interviewees, that online learning, like all forms of learning, suits some people more than others.

Many of the advantages and disadvantages described by the interviewed teachers and trainers were similar to those described for online learning more generally in the literature. However, the nature of VET as a competency-based training system does raise a few

Table 3 Advantages of online learning for students and RTOs/trainers, as described by interviewees

Students	RTOs/trainers
<ul style="list-style-type: none"> • accessible for regional/rural students • accessible to people who work; can study at night or on weekends (good for people looking to change careers without alerting current employers) • can study when convenient; fit in with other commitments; can multitask • accessible for people with mental health issues and people with physical disabilities • accessible for people who are incarcerated • can access it when on the move (day to day, or when travelling); easy access, assuming they have a device • can study at own pace, and can take breaks if necessary (days, or weeks) • can enrol at any time; often don't need to wait for a semester to start • businesses can enable qualifications for their workers while they're still doing their work; they can study at work, in work time • it can be more affordable (for students and/or employers) • it can be faster i.e. things can be responded to more quickly; feedback can be quicker • cost- and time-efficient; no travelling, car park costs etc. • lots of information at students' fingertips • online assessment often better than face-to-face; it has been under scrutiny and is improved because of that. 	<ul style="list-style-type: none"> • increased flexibility, especially for contract trainers • can respond quickly to students • access to data for validation is useful • can promote stronger relationships; information about the student is right in front of trainers, can pick up the phone and call • can control the learning journey more easily; can ensure students access all resources to progress (this improves assessment outcomes) • trainers can better monitor how students are going; can intervene if they feel they are at risk of non-completion • it's scalable • can access students' work straightaway • everything in the system is mapped; no need to map manually • easier to provide feedback.

Table 4 Disadvantages of online learning for students and possible solutions (where stated), as described by interviewees

Students	RTOs/trainers
<ul style="list-style-type: none"> • fear of the unfamiliar • can feel disconnected, may lack a sense of belonging; might not have a cohort to engage with; more difficult to build rapport with other students and/or the trainer • no set timetable; can be hard to maintain motivation • assumption of digital literacy; students might have difficulties with technical activities such as filming a video on their phone and uploading it to the system • connectivity issues, lack of internet access (including where internet access is poor due to rural location or housing situation) • access to help when needed can be harder, can take longer (trainer is not online all the time) • doesn't necessarily cater for all learning styles; can't see the trainer showing them how to do things in person; tends to be a lot of reading; doesn't suit people who really prefer face-to-face contact • the perception that a course is completely online when it isn't (such as when work placements are required) • some online courses are put together cheaply and are not high-quality or effective • can take the student longer than they expect; they still need to do the work • students might not understand the support available to them • harder to learn some things, like communication and leadership • difficult where practical observations are required. 	<ul style="list-style-type: none"> • needing to go through a third party if something goes wrong with the portal; 'if it goes offline, you're offline' • keeping up with the pace of technological change; keeping abreast of technologies available and having the funds to implement new technologies • ensuring the person enrolled in the course is the person completing assessment tasks • identifying plagiarism (although can sometimes be easier in an online environment) (not specific to online learning) • issues with literacy and numeracy (not specific to online learning) • harder to develop a sense of community • engagement can be harder; students can hide more easily • the structure of the course can be harder to maintain; some students skip ahead to assessment without doing the learning activities • expectation that the trainer is always online • training packages may be worded in ways that are challenging for online delivery; for example, counselling sessions must be with someone in the same room (and hence, can't simply be done with the trainer via video) • national reach can make it difficult to ensure content is accurate for each jurisdiction • lower completion rates; higher drop-out rates • the perceived perception of government and the regulators that online courses are inferior.

additional issues. In particular, online learning can create some challenges in assessment where practical observations are required (as specified in some training packages), particularly if equipment is needed. Interviewees described various solutions initiated by them to overcome these challenges, highlighting that a degree of flexibility and creative problem-solving are often required.

This chapter has illustrated that a VET course described as fully online may involve elements that are not completed online, such as work placements. Additionally, face-to-face contact between the student and the trainer may occur, for example, via a video link or in person. The interviews showed that teachers and trainers sometimes introduce a variety of non-online elements to improve the training for students and/or to help students to overcome barriers they may be facing. These examples demonstrate that how online VET courses are defined requires some flexibility, while how they are marketed requires clarity.

The advantages and disadvantages of online learning in VET are broadly similar to those experienced in other education sectors. The main differences arise from VET being a competency-based training system, with assessment requirements specified by training packages.



The extent of online learning

Around 9% of all VET programs were delivered 'entirely online' in 2017.

This section briefly describes existing work that has measured the amount of online learning delivered in Australian VET, and then presents an analysis of data from the National VET Provider Collection showing current levels of online delivery.

Previous research on the use of online delivery in Australian VET

The VET sector in Australia is based on a competency-based training system, with a focus on what learners can do in the workplace. In relation to the practical components of VET courses, especially in terms of assessment, this means that some types of courses may be less effectively delivered online, especially in their entirety, than others. For example, the development of skills in the trades involving more manual or hands-on application may not be as effective when delivered online in comparison with the development of skills in computer-based work, which are easily demonstrated online.

A 2006 survey found that, of the RTOs that identified themselves as delivering training in the traditional trades, 46% indicated that they use e-learning as part of this delivery (Australian Flexible Learning Framework & I & J Management Services 2006). The use of e-learning by teachers in the traditional trades tended to be lower, however, than in other areas that were more clearly suited to e-learning approaches. Note that this survey was based on a broad definition of e-learning and included aspects such as the use of multimedia resources in the classroom. The survey therefore simply provides an indication of e-learning in the traditional trades rather than the provision of online courses.

Callan, Johnston and Poulsen (2015) investigated the use of e-learning in traditional trade apprenticeships (across the bakery, building and construction, plumbing, and stonemasonry industries). In these cases, e-learning was especially useful at particular stages or for aspects of training such as in the pre-apprenticeship or at the initial stages of an apprenticeship, where underpinning knowledge and theory were required. It was also useful in the delivery of modules related to licensing and occupational health and safety. However, this research noted very little support for the use of e-learning as the sole means of delivering trade training. Employers, employees and teachers still expect trade training to involve a blended learning design, which combines the benefits of online and face-to-face learning.

More broadly, Downing, Brennan Kemmis and Ahern (2014) reported that the VET sector is embracing the opportunities provided by technology, with most RTOs incorporating at least some forms of e-learning. The types of tools they described as being used included learning management systems, Web 2.0 (especially wikis and blogs) and social media.

The use of MOOCs (Massive Open Online Courses) in VET has also attracted some attention. Internationally, the growth in MOOCs and their uptake has been well documented. As free online courses, MOOCs use open-source materials delivered by some of the world's top universities (Rosendale 2017). After a rapid uptake in the US in 2011 and 2012, this mode of delivery experienced global expansion (Flexible Learning Advisory Group 2013a), particularly in higher education. MOOCs do not usually result in degree confirmation or university credits (Rosendale 2017), but their accessibility means they are able to attract learners with

limited experience with online learning or higher education (Flexible Learning Advisory Group 2013a). The VET sector, however, has lagged in its uptake of this delivery method, due, at least partly, to the sector's imperative of skills acquisition, which means that MOOC delivery is a less appropriate format (Paton, Scanlan & Fluck 2018).

We can use two sources of data to provide a picture of the growth in, and extent of, online learning in the VET sector. The first source of data comes from the series of e-learning benchmarking surveys conducted between 2005 and 2013 for the Flexible Learning Advisory Group (FLAG 2013b). These surveys explored various elements of e-learning (including online learning). Some key findings are described below.

The e-learning benchmarking surveys aimed to measure the uptake and use of e-learning in the national VET system and its impact on VET clients and VET providers. The surveys captured information against key e-learning indicators from four key stakeholder groups:

- individuals (VET students)
- business and industry (as clients of the VET system and providers of training to employees)
- RTOs (public, private, industry, enterprise and community)
- The VET system (teachers and trainers).

When the e-learning survey was first conducted in 2005, it estimated that 8% of VET unit enrolments formally involved e-learning (Australian Flexible Learning Framework & I & J Management Services 2005). The use of e-learning was growing, but scattered broadly, with pockets of activity led by early adopters. By 2013, it was estimated that 48% of VET activity formally involved e-learning. This figure, as reported by RTOs, is believed to be lower than the actual levels of e-learning at that time (due to continuing misconceptions about what e-learning actually involved⁴), which was thought to be around 90%. These figures illustrate the extensive growth in e-learning in the VET sector but does not enable us to differentiate between online learning (as it is defined here) and a broader concept of using electronic media in training activity (as defined for the surveys). However, the 2013 survey provides some insight into the different technologies used in training. For example, 42% of RTOs reported using social networking, 40% used Web 2.0 technologies, 38% used web-based seminars/presentations and 29% reported the use of e-portfolios. In the same survey, 71% of RTOs said that they delivered training using interactive learning resources onsite, while 66% said that their training used these e-learning resources offsite (either at home or in the workplace).

In most of the iterations of the e-learning benchmarking survey, the views of students were also captured, with the 2009 and 2011 surveys strongly focused on how technology was used

4 The e-learning benchmarking survey report acknowledged the continuing misconceptions about what e-learning involved. In the context of their survey, they defined it as including: access to, downloading and use of web, CD ROM or computer-based learning resources in the classroom, workplace or home; online access to and participation in course activities (e.g. online simulations, online discussions); directed use of the internet, mobile and voice technologies for learning and research purposes; structured learning-based email communication; and online assessment activities. It did not include email dissemination of course information, email communication between a teacher/trainer and learner on a single learning issue, or online administration of learning activities.

by VET students in their training. The 2011 survey indicated that the use of technology in VET had become widespread, with 82% of those students surveyed reporting that their course contained some e-learning (Australian Flexible Learning Framework & I & J Management Services 2011). At that time, 90% of students reported they appreciated at least a little e-learning in their course, while 26% wanted a lot of e-learning. Again, this does not differentiate between the possibly broader concept of e-learning and online learning.

The second source of data we can use to explore the extent of online learning in Australian VET is NCVER's National VET Provider Collection. Since there is no current survey specifically collecting data about online learning in Australia, we have to rely on data captured through a more general administrative data collection. An analysis of these data is presented in the next section.

Current extent of online learning in Australian VET

Data source, methodology and limitations

Data from the National VET Provider Collection were used to examine the more recent delivery of online learning in Australia. Two important limitations to these data should be noted.

Firstly, up until and including 2017, the delivery mode identifier in the collection denotes the **predominant** mode of delivery for a unit of competency or module enrolment.⁵

The modes are:

- classroom-based: includes classroom-based delivery at any permanent or semi-permanent training delivery location
- electronic-based: includes web-based resources, computer-based resources, online interactions both on or off campus, radio, television, videoconference, or audioconference
- employment-based: includes training activity conducted in the workplace, irrespective of whether it is conducted by the training organisation or the employer; for example, industrial/work experience, field placement, or fully on-job training
- other delivery: is used where the predominant method of learning is not covered by the options provided
- not applicable: recognition of prior learning/credit transfer.

The broad definition of electronic-based mode of delivery means it is difficult to determine the extent of online learning in VET, as it may include other forms of e-learning (including in the classroom). Additionally, the identifier is for the *predominant* mode of delivery; hence, a subject identified as predominantly electronic-based may not be exclusively so.

5 A new release of AVETMISS, release 8.0, applies to all training activity from 1 January 2018. The delivery mode identifier has been revised so that the data collected can be better used to differentiate between classroom-based and self-paced learning. It can also be used to identify training that is delivered in more than one mode, for example, a mix of classroom-based and external delivery.

Despite these limitations, electronic-based delivery is the best proxy for online learning available in these data.

Secondly, the delivery mode identifier is captured at the subject level, not at the qualification level. This research, however, is interested in courses that are delivered entirely online (rather than a course where there is a mix of subjects delivered online and in the classroom).

To identify the number of commencements in qualifications conducted entirely online (that is, identified as delivered predominantly electronic-based, as per the AVETMISS delivery mode identifier), we used the unique student identifier (USI)⁶ to match subjects to programs across years. It should be noted that the USI was introduced in 2014 and was held by only 23.5% of the dataset population in that year, increasing to 90% in 2015 and 97.8% in 2016. Hence, program enrolment figures are not provided for 2014. Also note that these matched data were compiled in order to estimate completion rates (described in more detail later in this report) and thus any records that did not fulfil the requirements for those calculations were omitted.

Notwithstanding the limitations of the delivery mode identifier and the USI, this methodology provides a way of comparing commencements for electronic-based delivery with that of all programs. However, the analyses should be interpreted with these limitations in mind.

Overarching trends

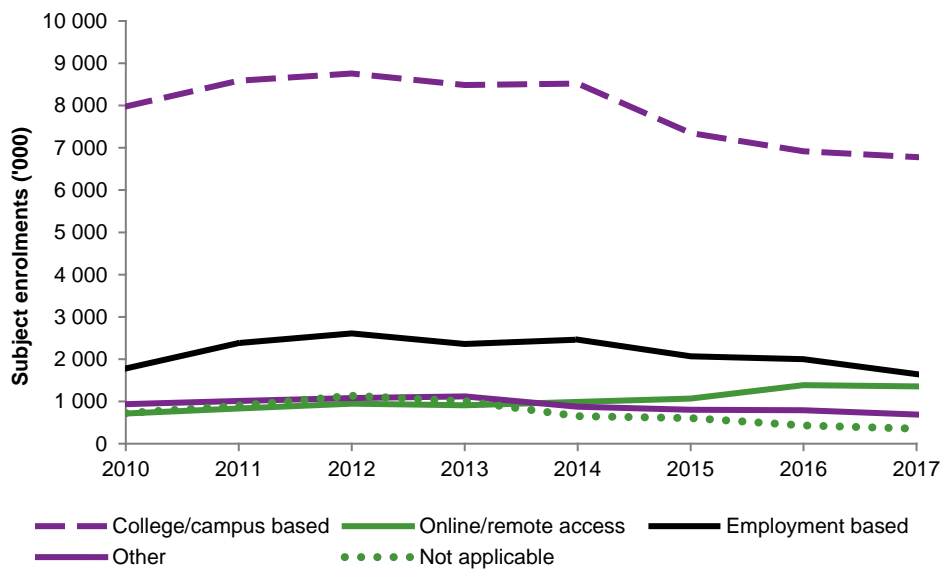
To get a picture of the levels of VET delivered online (predominantly electronic-based) over time, it is necessary to look at government-funded training (since total VET activity has only been collected since 2014). At the subject level, predominantly electronic-based delivery has increased over the time period, 2010 to 2017 (figure 1). As a proportion of all delivery, predominantly electronic-based delivery approximately doubled from 6% in 2010 to 13% in 2017. A similar increase is seen when considering hours of delivery (figure 2). The hours of predominantly electronic-based delivery increased from 6% of all delivery in 2010 to 11% in 2017.

While these figures demonstrate an increase in the online delivery of VET at the subject level, of interest to this research is the online delivery of entire qualifications.

Figure 3 shows the number of commencements for online (electronic-based) programs and for all programs in government-funded training from 2015 to 2017 and indicates that, while there has been a decline in the overall number of commencing programs (from around 849 000 in 2015 to 748 000 in 2017), the number of those delivered online has slightly increased (from around 42 000 in 2015 to 57 000 in 2017). This slight increase in the proportion of online programs is shown in figure 4, where the commencement of programs delivered online increased from around 5% of all programs in 2015 to over 7% in 2017. This increase follows the steady increase in VET FEE-HELP online course enrolments seen from 2010 to 2015 as reported by the Department of Education and Training (2016).

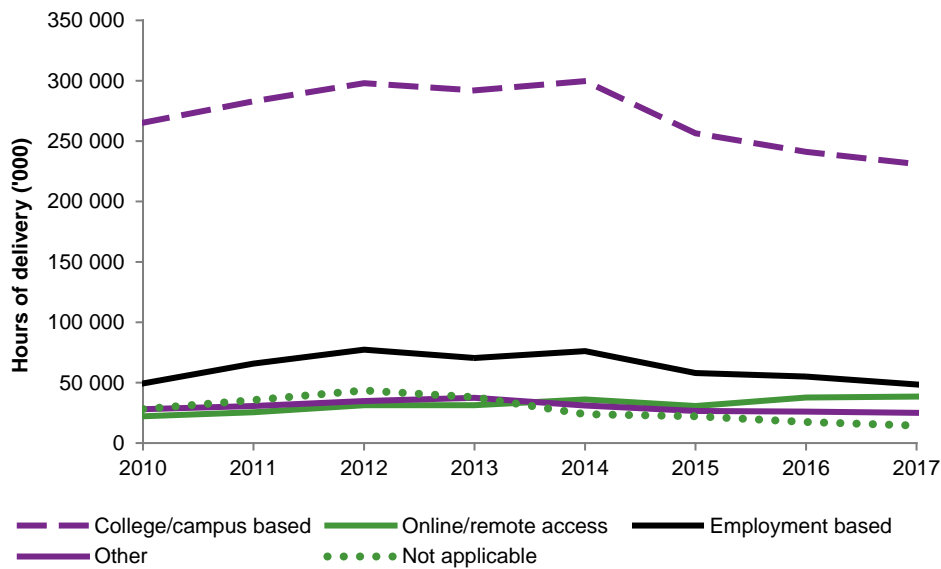
6 The Unique Student Identifier (USI) uniquely identifies an individual who accesses vocational education and training over his or her lifetime. The Unique Student Identifier Act was passed on 27 June 2014 and commenced 1 January 2015. <http://www.usi.gov.au>

Figure 1 Subject enrolments by delivery mode, government-funded, 2010–17



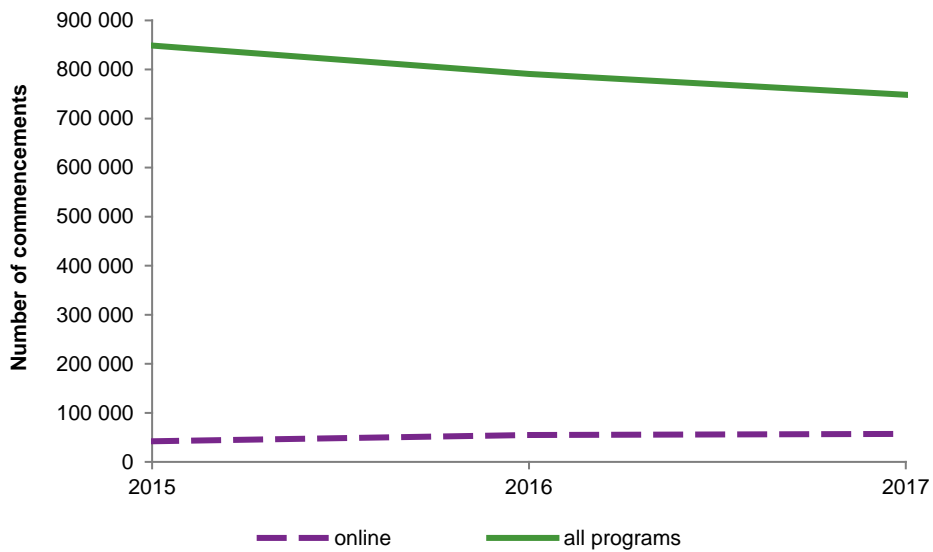
Source: VOCSTATS <<http://www.ncver.edu.au/resources/vocstats.html>>, extracted on 25 October 2018.

Figure 2 Hours of delivery by mode of delivery, government-funded, 2010–17



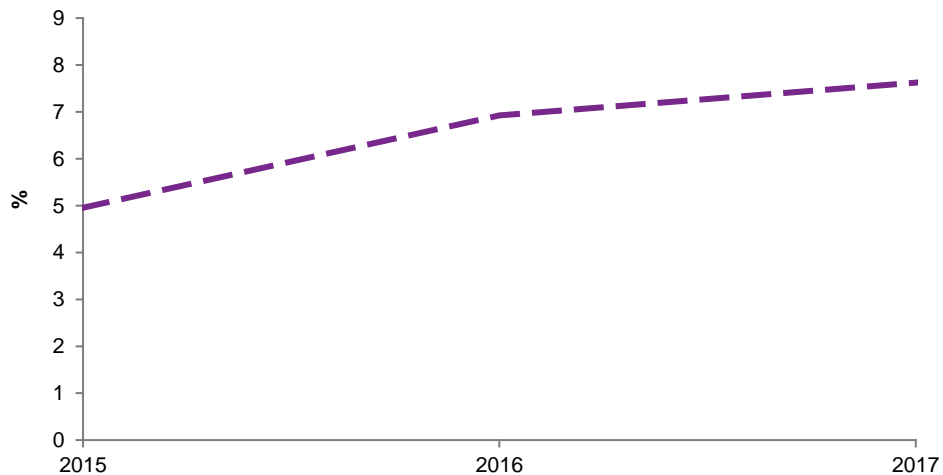
Source: VOCSTATS <<http://www.ncver.edu.au/resources/vocstats.html>>, extracted on 25 October 2018.

Figure 3 Number of commencing programs, 2015–17 (government-funded training)



Source: Estimated using National VET Provider Collection.

Figure 4 Commencements for online programs as a percentage of all programs, 2015–17 (government-funded training)

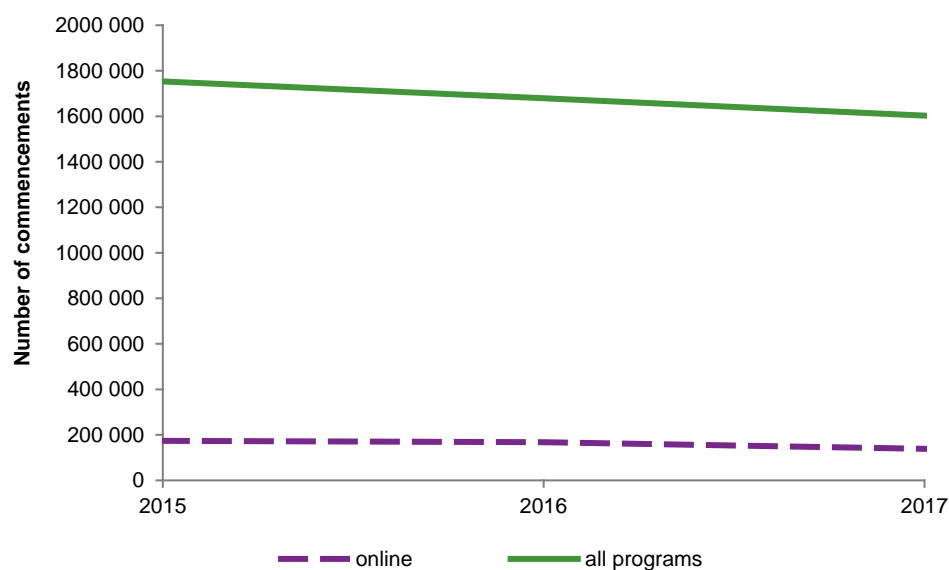


Source: Estimated using National VET Provider Collection.

Turning our attention to total VET activity, which includes fee-for-service delivery in addition to government-funded activity⁷, a very similar pattern of commencement in programs can be seen, at a higher volume (figure 5). Again, we see a decrease in the total number of those commencing programs, from around 1 753 000 in 2015 to 1 603 000 in 2017. We also see a decrease in predominantly electronic-based programs, from around 174 000 in 2015 to 139 000 in 2017. Figure 6 demonstrates that, as a proportion of total commencements, predominantly electronic-based programs decreased slightly over the period, from around 10% in 2015–16 to 8.6% in 2017.

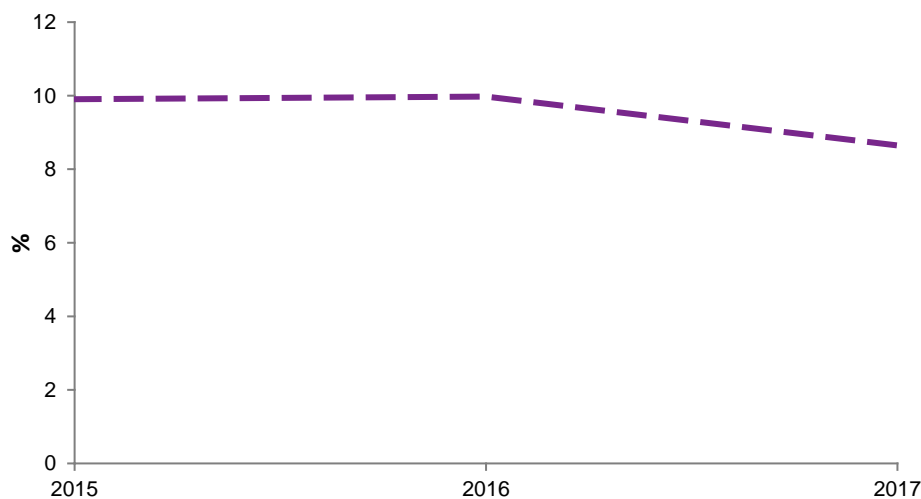
7 Total VET activity (TVA) refers to all domestic and overseas VET activity delivered by all types of Australian training providers and reports on students who undertook government-subsidised training and those who undertook training on a fee-for-service basis.

Figure 5 Number of commencing programs, 2015–17 (total VET activity)



Source: Estimated using National VET Provider Collection.

Figure 6 Commencements for online programs as a percentage of all programs, 2015–17 (total VET activity)



Source: Estimated using National VET Provider Collection.

Commencements for online programs and for all programs are presented in table A1 in appendix A, split by funding source and by Australian Qualifications Framework (AQF) level. Table A1 enables the decrease in commencements to be examined in more detail, illustrating varying trends by AQF level and funding source. Notably, a 72% decline in fee-for-service diploma or higher qualifications delivered online is observed (from 62 877 commencements in 2015 to 17 713 in 2017), compared with a smaller 35% decrease for those delivered through other delivery modes (from 136 701 in 2015 to 88 304 in 2017).

These trends are likely due to the changes in VET FEE-HELP that occurred between 2015 and 2017 (Saccaro & Wright 2018). Research undertaken by NCVET (2015) showed that 48% of students accessing VET FEE-HELP (available to those enrolling in higher level qualifications) between 2013 and 2014 were enrolled externally (likely online). The Commonwealth Government acted to rein in the VET FEE-HELP scheme in 2015, resulting in the closure of numerous private providers and large decreases in the number of students accessing VET

FEE-HELP loans (Saccaro & Wright 2018). Accordingly, significant declines in online diploma and higher qualifications are seen for private providers and community education providers between 2015 and 2017 (table A2 in appendix A).

Individual jurisdictions

The proportion of commencements in programs delivered online varies by jurisdiction. Tables 5 and 6 show that in 2017 the commencements in programs delivered online as a proportion of all program commencements was highest in New South Wales (18.5% for government-funded, 14.3% for total VET), followed by Queensland (5.3% for government-funded and 10.4% for total VET). New South Wales and Queensland have by far the highest numbers and proportions of online commencements by comparison with the other states.

Over 2015 to 2017, the increase in government-funded online program commencements is reflected by relatively strong increases in New South Wales and Queensland (table 5). Similarly, from 2015 to 2017, the decline in online training in the total VET activity dataset is also seen in these two states (table 6).

Table 5 Number of commencements for electronic-based programs and for all programs (government-funded), 2015–17

	Online programs (% of all programs within that jurisdiction)						All programs (all delivery modes within that jurisdiction)		
	2015		2016		2017		2015	2016	2017
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	<i>N</i>	<i>N</i>
New South Wales	25 670	12.2	39 648	16.1	42 710	18.5	209 670	246 809	231 443
Victoria	5 841	2.2	4 111	1.9	2 424	1.3	267 793	214 556	191 262
Queensland	6 205	3.6	7 457	4.7	8 618	5.3	171 678	159 003	162 278
South Australia	796	1.5	462	1.2	587	1.5	54 462	38 511	39 413
Western Australia	2 059	2.0	1 592	1.7	1 571	1.8	102 291	91 115	86 310
Tasmania	722	4.3	707	4.2	540	3.9	16 695	16 679	13 862
Northern Territory	53	0.4	np	-	np	-	13 708	12 711	11 692
Australian Capital Territory	717	5.7	767	6.7	576	4.7	12 501	11 522	12 195
Australia	42 063	5.0	54 764	6.9	57 048	7.6	848 798	790 906	748 455

Note: Numbers fewer than 50 are not reported (np).

Source: National VET Provider Collection

Table 6 Number of commencing electronic-based programs and for all programs (total VET activity), 2015–17

	Online programs (inc. as % of all programs)						All programs (all delivery modes)		
	2015		2016		2017		2015	2016	2017
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	<i>N</i>	<i>N</i>
New South Wales	73 984	17.4	73 433	16.7	60 220	14.3	425 248	438 897	420 270
Victoria	20 684	4.8	23 192	5.9	23 233	5.8	429 650	391 566	397 327
Queensland	65 577	13.4	58 318	12.5	46 648	10.4	488 698	465 065	449 436
South Australia	4 558	3.9	2 643	3.2	2 140	2.7	118 188	82 867	79 558
Western Australia	5 378	2.6	6 469	2.9	4 439	2.4	209 285	221 357	186 096
Tasmania	1 463	4.9	1 567	5.2	714	3.0	30 148	29 965	23 934
Northern Territory	125	0.7	142	0.8	78	0.5	18 706	18 463	17 041
Australian Capital Territory	1 680	5.4	1 514	5.3	1 079	4.0	31 179	28 344	27 232
Other	189	9.9	197	8.4	np	-	1 903	2 357	1 868
Australia	173 638	9.9	167 475	10.0	138 592	8.6	1 753 011	1 678 893	1 602 779

Note: Numbers fewer than 50 are not reported (np).

Source: National VET Provider Collection

Course completion rates are lower for courses delivered online, while subject withdrawal rates higher.



Student experience and outcomes

This section of the report explores whether students who undertake fully online courses have the same experience and outcomes as those who have participated in face-to-face or blended learning. There has been limited previous research investigating these issues in the Australian VET sector, especially for courses delivered fully online.

Data from the National VET Collection and National Student Outcomes Survey were analysed to explore the three following outcomes for courses delivered online compared with other forms of delivery:

- course completion rates
- student satisfaction
- employment outcomes.

Completion of online VET courses

Completion rates are a commonly used measure of success and efficiency in the VET system. Completion rates alone do not necessarily equate to the quality of a course or to success for the student. However, a comparison of completion rates for online VET courses and those delivered via other delivery modes may tell us something about how the behaviour of students undertaking courses using various delivery modes differs.

Previous research comparing completion rates of online and traditional classroom-based learning focused mostly on higher education and has shown mixed results. Atchley, Wingenbach and Akers (2013) report that some studies found no significant difference in completion rates, while others show that completion rates for online courses are lower than for traditional equivalents. An analysis conducted by Atchley, Wingenbach and Akers (2013) themselves also found lower completion rates for online courses compared with traditional courses, and, further, that this varied by course discipline.

In the VET sector, recent work comparing completion rates of VET MOOCs and university MOOCs found that more students were retained in the VET MOOCs (Paton, Scanlan & Fluck 2018). However, completion rates of MOOCs are relatively low across all sectors, often cited at around 7% (Flexible Learning Advisory Group 2013a). Many students never complete the first assessment task, but, given the nature of MOOCs (particularly if they are cost-free), students often do not formally withdraw (Paton, Scanlan & Fluck 2018). This complicates the task of calculating meaningful completion rates for this particular mode of training. It may be a different story for other forms of online courses in VET, where there is a cost to undertaking the training (and hence a stronger motivation to withdraw should a change of mind occur).

Methodology for estimating projected course completion rates

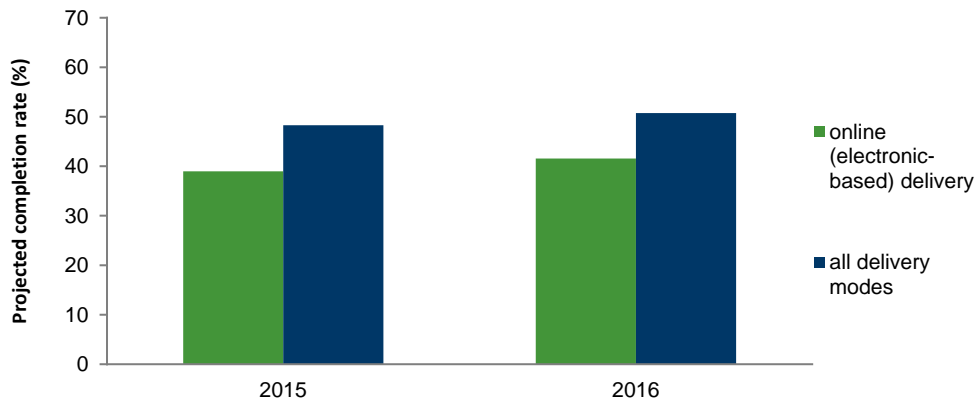
The projected completion rates for online (predominantly electronic-based) programs were estimated for total VET activity using the methodologies described in Mark and Karmel (2010) and McDonald (2018).

The estimations used the program-level dataset produced by matching subjects to programs and used the USI (introduced in 2014) as the linking key, as described earlier. As the projected course completion rate calculations require a three-year window, centred on the reporting year, the projected completion rates are reported for 2015 and 2016 only.

Projected course completion rates: findings

Figure 7 shows that the projected completion rates for 2015 and 2016 are lower for 'online' programs (around 40% for both years) by comparison with all programs (around 50% for both years).

Figure 7 Projected completion rates for 'online' programs and all programs, total VET activity, 2015–16

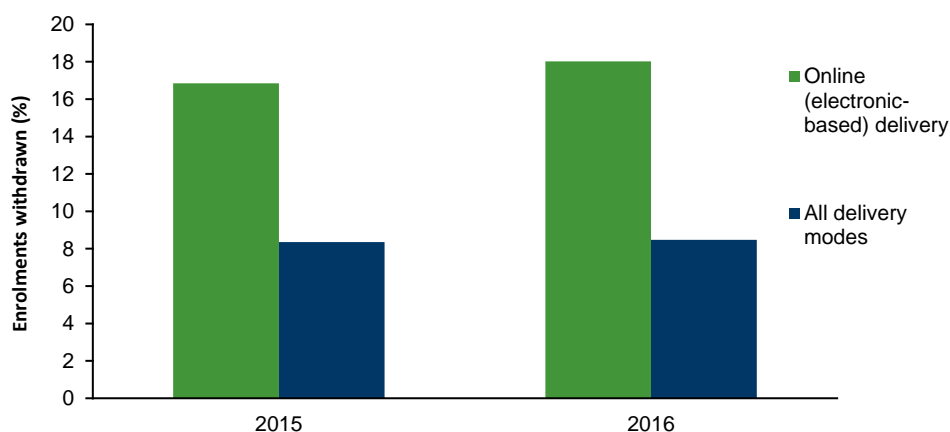


Source: Estimated using National VET Provider Collection.

Subject withdrawals

It is possible to hypothesise that lower course completion rates might be due to higher rates of withdrawals in subjects delivered online (an alternative scenario is where students do not officially withdraw but do not complete). To investigate this, the percentage of withdrawn subjects is shown for total VET activity (figure 8). Withdrawal rates for online subjects were higher than for all delivery modes in both 2015 and 2016. Hence it does appear that higher withdrawal rates in online subjects are contributing to the lower completion rates for online courses.

Figure 8 Subject withdrawal rates (%) by delivery mode for total VET activity, 2015–16



Source: Estimated using National VET Provider Collection.

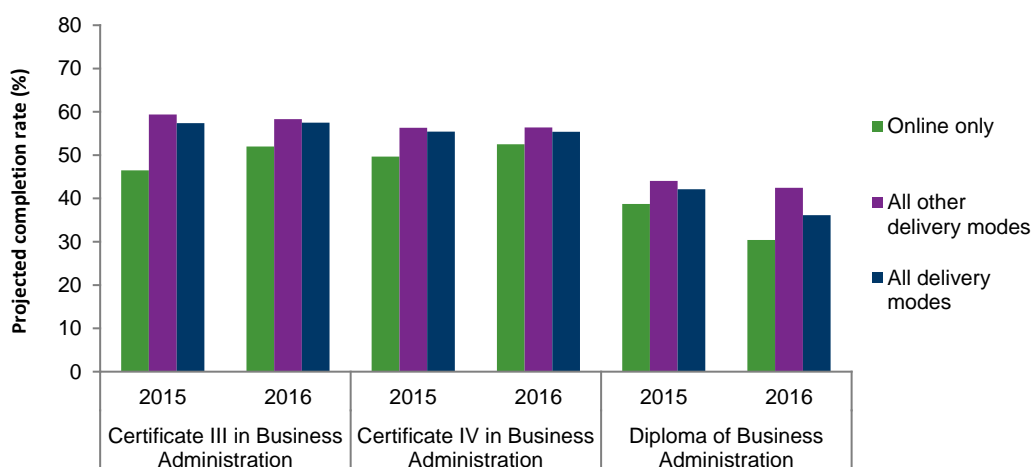
Individual qualifications

This section presents the projected completion rates for individual qualifications in the six subject areas of interest, as described earlier. Figures 9 to 14 show the projected completion rates for the 17 individual qualifications selected for examination. The commencement rates for all 17 qualifications can be seen in table B1 in appendix B.

Overall, the projected completion rates are consistently lower (sometimes only slightly lower) for courses delivered online across all qualifications investigated, for both years, mirroring the pattern seen for all qualifications (above). The completion rate is never higher for online courses.

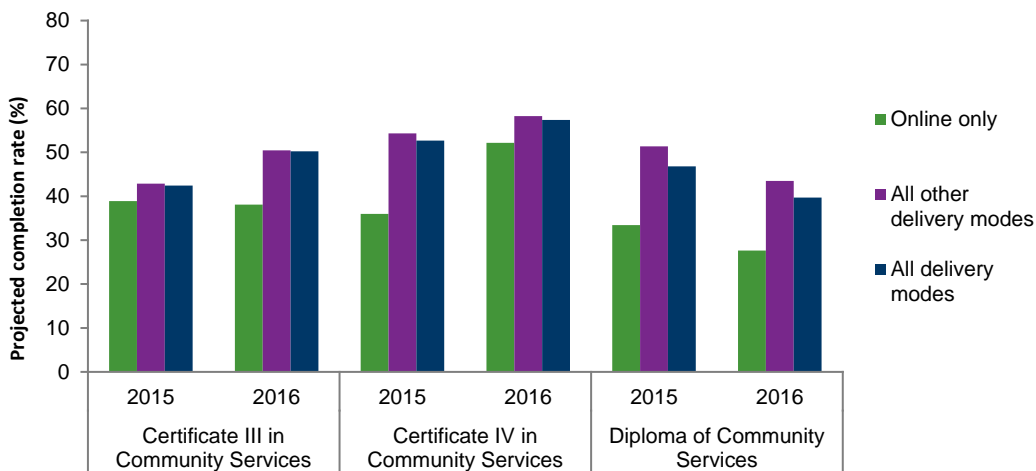
The largest differences in projected course completion rates were generally in higher-level qualifications, most notably in the Diploma of Community Services and the Diploma of Information Technology.

Figure 9 Projected completion rates for selected qualifications in business administration, total VET activity, 2015 and 2016



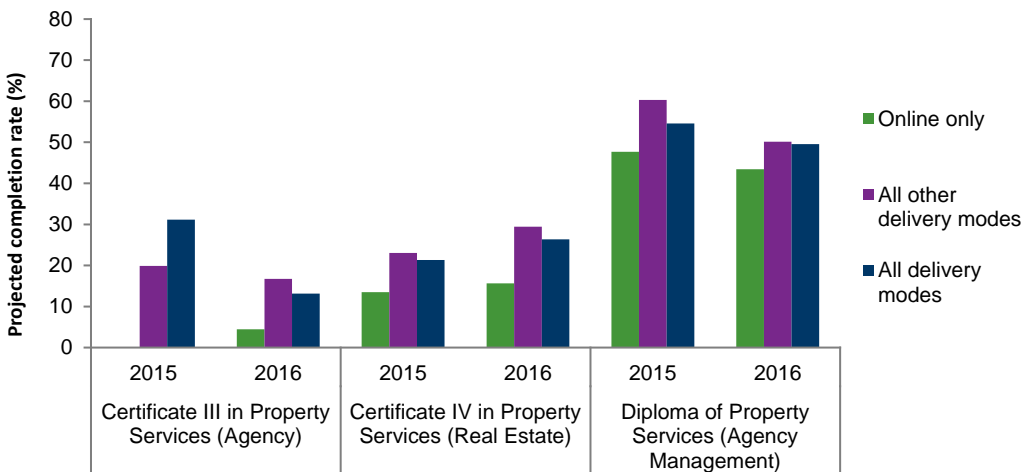
Source: Estimated using National VET Provider Collection.

Figure 10 Projected completion rates for selected qualifications in community services, total VET activity, 2015 and 2016



Source: Estimated using the National VET Provider Collection.

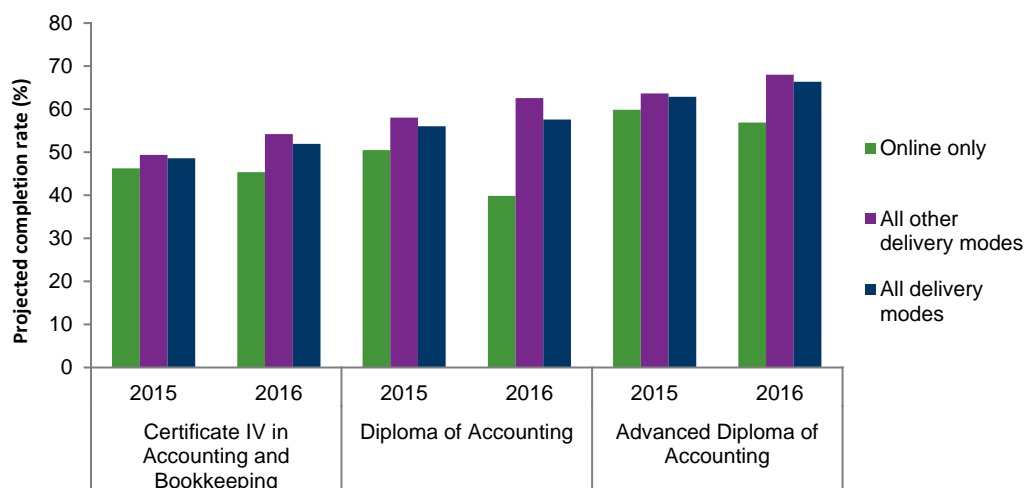
Figure 11 Projected completion rates for selected qualifications in property services, total VET activity, 2015 and 2016



Source: Estimated using the National VET Provider Collection.

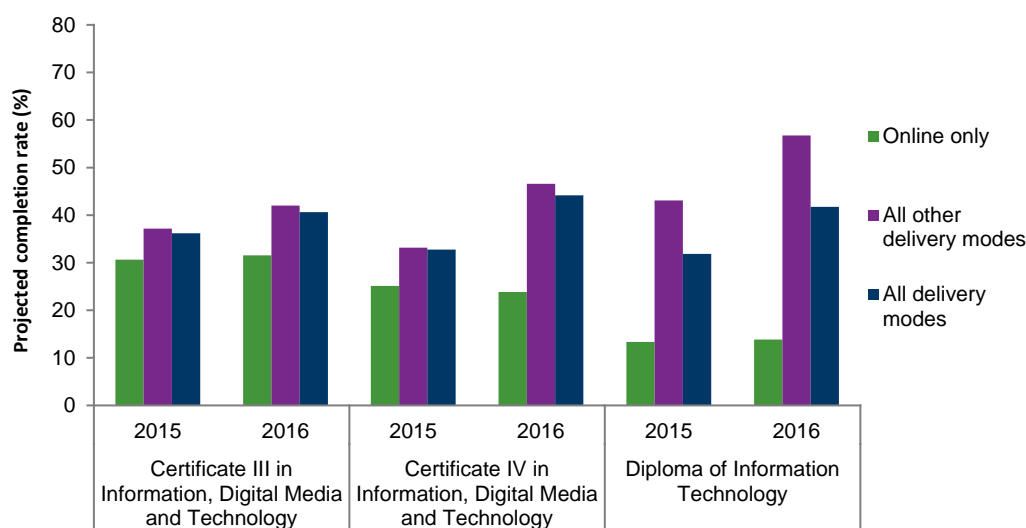
Note: The projected completion rate for the Certificate III in Property Services (Agency), delivered online, in 2015 is not shown due to low enrolments in 2014 (<50).

Figure 12 Projected completion rates for selected qualifications in accounting, total VET activity, 2015 and 2016



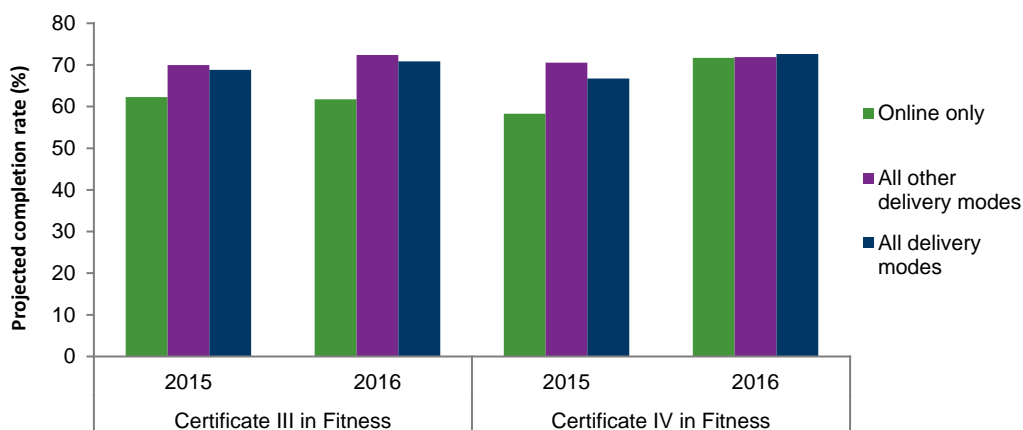
Source: Estimated using the National VET Provider Collection.

Figure 13 Projected completion rates for selected qualifications in information technology, total VET activity, 2015 and 2016



Source: Estimated using the National VET Provider Collection.

Figure 14 Projected completion rates for selected qualifications in fitness, total VET activity, 2015 and 2016



Source: Estimated using the National VET Provider Collection.

Qualitative insights into differences in subject withdrawals and course completions for online courses

Unfortunately, the available data do not provide information on why students have withdrawn or not completed their course. One explanation might be that students who enrol in an online course have a lower intention to complete the course than someone who enrolls in courses delivered via other delivery modes, but the currently available data do not allow for this hypothesis to be tested.

Other reasons for higher subject withdrawal rates and lower course completion rates might include lower satisfaction with online courses (due to course quality or other reasons) or that the online study mode does not suit some students as well as other study modes.

The interviews with teachers and trainers revealed a mixed view of the student experience in their online courses:

We get favourable feedback, but some don't like it ... 60% positive. (Accounting)

Students who ask for help would say it's good. Those who are unsatisfied are probably those who haven't reached out, perhaps those with poor computer skills who have been frustrated. (Property services area)

About 50/50. It depends on the motivation of the student. Online is good, but for the right people. (Community services)

The teachers and trainers revealed that feedback tended to be positive when surveys were distributed to students on completion, mirroring the findings presented above. One trainer explained:

A motivated person will probably be engaged and have a rewarding experience. However, those who don't finish – they were probably not engaged and probably think it was terrible. It shows in the completions and it's hard to gauge for those who don't complete. Those who get through provide positive feedback.

Interviewees agreed that online learning does not suit everyone and that this might contribute to higher withdrawal and lower completion rates. A trainer from an IT area suggested:

Comparing online to the classroom is a barrier. You get the same qualification but the experience *is* different. For those who are engaged, driven and self-reliant – it's a good thing.

Other reasons possibly leading to dissatisfaction and/or increased withdrawals and decreased completion rates provided by interviewees included:

- a lack of student awareness of the resources required to undertake the course online (such as a computer and access to required software packages)
- a lack of student awareness about the work placement requirements of some courses, or difficulties in securing a work placement
- enrolment to fulfil Centrelink requirements with no intention of engaging in or completing the course (noting this is not true of all who enrol to fulfil Centrelink requirements)
- enrolment in a course that is not at the appropriate level for the student.

Irrespective of the reason for higher withdrawal rates in online courses, they may in fact be the result of RTO processes designed to encourage withdrawal rather than non-completion. In the interviews, several trainers described the efforts made to encourage students to withdraw if they fail to engage in a course, explaining that initial efforts are aimed at encouraging students to engage with the course; should students remain disengaged, withdrawal is then suggested. This usually involves repeated contact and warnings that the student will be withdrawn (for example, one interviewee reported that students are withdrawn if they haven't engaged after four months).

Student satisfaction tends to be slightly lower for graduates of online courses, but still relatively high.

Student satisfaction with online learning

Most published research on student satisfaction with online learning comes from the higher education sector. Dissatisfaction with online learning can be due to a variety of factors, including:

- being more comfortable with face-to-face learning, or learning from printed materials (Zhang & Perris 2004, cited in Palmer & Holt 2009)
- limited interaction with the instructor (Zhang & Perris 2004, cited in Palmer & Holt 2009)
- difficulty in motivating themselves, or in prioritising the online study (Upton 2006, cited in Palmer & Holt 2009).

At the opposing end of the satisfaction scale, the factors shown to positively influence student satisfaction with online learning include:

- clarity and relevance of assignments and communication
- confidence in their ability to communicate and learn online
- access to campus-based resources
- availability of technical support
- orientation to the course, technology and equipment
- their assessment of how well they feel they are performing in the course (Johnston, Killion & Oomen 2005; Palmer & Holt 2009).

There is little in the published literature on student satisfaction with fully online VET courses.

Methodology

To investigate student satisfaction with online learning in VET, data from the National Student Outcomes Survey were analysed for courses delivered online compared with other forms of delivery. The National Student Outcomes Survey reports on the outcomes of all domestic students (government subsidised and fee-for-service).

Six satisfaction outcomes are explored:

- satisfied with teaching
- satisfied with assessment
- satisfied with overall quality of training
- achieved main reason for doing the training
- (would) recommend training
- (would) recommend training provider.

The mode of delivery in the National Student Outcomes Survey is collected differently from that of the National VET Provider Collection.⁸ In the 2017 and 2018 surveys, the following question was asked:

- which of the following describes how the training was delivered? (more than one box can be crossed)
- training conducted in the classroom or workshop (includes when the training is delivered using video or internet links in real time)
- external delivery or self-paced learning (includes using training materials that are provided online or by correspondence)
- training conducted in the workplace
- other
- don't know/refused.

This question was not asked in the surveys conducted between 2014 and 2016, and a different question was asked in the surveys prior to that. This means that it is not useful to look at data prior to that collected in 2017 and, hence, we cannot determine whether student satisfaction for online courses has changed over time.

Data were extracted for the following categories of delivery mode:

- external only (our proxy for online learning)
- all other forms of delivery (includes combinations of external with other delivery modes)
- all forms of delivery (which also includes external only).

Pairwise significance testing comparisons between *external only delivery mode* against *all other delivery modes* were conducted at 0.05 level.

This analysis was conducted for all graduates and for each of the individual qualifications of interest (described earlier) where sample sizes were large enough (where there were at least 100 responses in each of the mode of delivery categories). These qualifications were:

- Certificate III, Certificate IV and Diploma of Business Administration
- Certificate III, Certificate IV and Diploma of Community Services
- Certificate IV in Property Services (Real Estate)
- Certificate IV and Diploma of Accounting⁹
- Certificate III in Information, Digital Media and Technology
- Certificate III and Certificate IV in Fitness.

All output from the statistical analysis can be seen in table C1 in appendix C. All figures for the individual qualifications are also provided in appendix C.

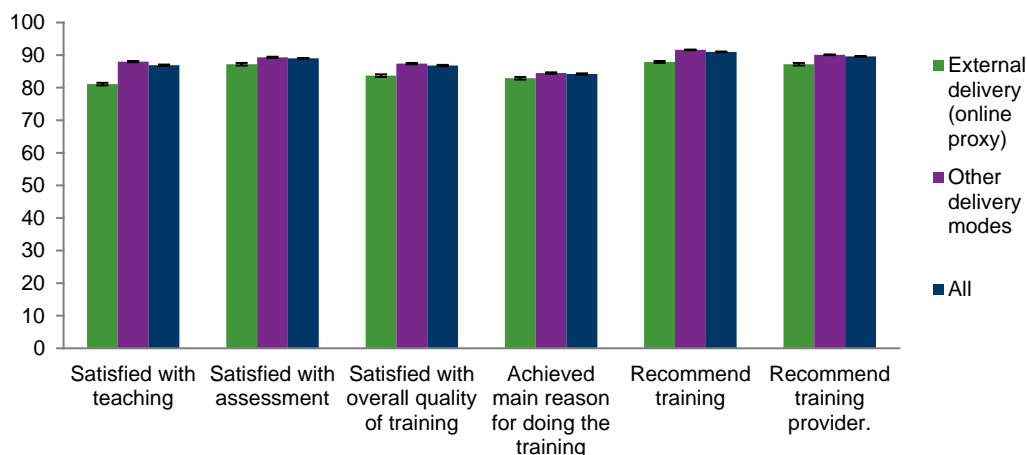
⁸ Mode of delivery at the subject level in the National VET Provider Collection is coded as predominantly: classroom-based; electronic-based; employment-based; other or not applicable.

⁹ Superseded accounting qualifications (FNS40615 & FNS50215) were used for analysis of the National Student Outcomes Survey data to ensure the sample was large enough (updated qualifications came into use in 2018).

Student satisfaction findings

Figure 15 shows the satisfaction outcomes by type of delivery for all graduates for 2018. This figure indicates that satisfaction levels are consistently slightly lower for students who have completed their qualification via external delivery only (online). While a significant effect was found between external and other delivery modes for all satisfaction outcomes, satisfaction levels were still high. This suggests that there is not a strong differentiation in terms of student satisfaction between online and other delivery.

Figure 15 Satisfaction outcomes by type of training delivery mode for graduates in all courses (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Table 7 identifies the statistically significant differences in the satisfaction measures between courses completed online and courses completed via other delivery modes. Importantly it also highlights where no differences are found.

The findings across the qualifications and satisfaction measures examined are mixed—there is no consistent pattern.

While there are differences in the satisfaction measures, irrespective of whether they are higher or lower for courses completed online, these differences are generally small (and as seen in the figures in appendix C, satisfaction tends to be quite high across all qualifications and delivery modes).

The results indicate that, across many of the individual qualifications examined, graduates of online courses were less satisfied with the teaching, although many were more likely to report they had achieved their main reason for undertaking the training.

The findings also indicate that, for almost all of the qualifications examined, there tended to be only one or two satisfaction measures in which there was a difference (positive or negative) between online and other delivery modes. The notable exception is for the two fitness qualifications, where satisfaction was lower for online courses across almost all of the satisfaction measures.

Notably, of the individual qualifications investigated, the fitness qualifications are those where training and assessment involve the most physical activity and, hence, may be less compatible with delivery in a fully online environment. It is important to note that the fitness area was one of two where work placements were specifically mentioned in the

training package. However, unlike the community services qualifications, work placement is only suggested, and not required, for these fitness qualifications.

These data show that satisfaction with the teaching and overall quality of training tends to be similar or slightly lower for courses completed online compared with other delivery modes, while students who completed their qualification online were often more likely to report they had achieved the main reason for doing the training. It should be noted, however, that all satisfaction levels are quite high overall, so these differences are minor.

These satisfaction measures are for students who have *completed* their course and, hence, the satisfaction levels for those who have either withdrawn or not completed are unknown.

Table 7 Differences in satisfaction between courses completed online compared with other delivery modes, 2018

Qualification completed (online)	Satisfied with teaching	Satisfied with assessment	Satisfied with overall quality of training	Achieved main reason for doing the training	Recommend the training	Recommend the training provider
Certificate III in Business Administration	↓ (-4.3%)	↑ (+2.4%)	ND	↑ (+5.1%)	ND	ND
Certificate IV in Business Administration	ND	ND	ND	ND	ND	ND
Diploma of Business Administration	ND	ND	ND	ND	ND	ND
Certificate III in Community Services	ND	ND	ND	↑ (+9%)	ND	ND
Certificate IV in Community Services	↓ (-8.6%)	ND	ND	↑ (+9.1%)	ND	ND
Diploma of Community Services	ND	↓ (-4.6%)	ND	ND	↓ (-4.3%)	↓ (-4.2%)
Certificate IV in Property Services (Real Estate)	↓ (-3.7%)	↑ (+2.6%)	ND	↑ (+3.5%)	ND	ND
Certificate IV in Accounting	ND	↑ (+3.3%)	ND	↑ (+15.1%)	ND	↑ (+2.9%)
Diploma of Accounting	↓ (-6.4%)	ND	ND	↑ (+7.5%)	↓ (-4.7%)	ND
Certificate III in Information, Digital Media and Technology	↓ (-13.9%)	ND	ND	ND	ND	↓ (-5.9%)
Certificate III in Fitness	↓ (-20.2%)	↓ (-15.8%)	↓ (12.8%)	ND	↓ (-10.7%)	↓ (-11.2%)
Certificate IV in Fitness	↓ (-17.7%)	↓ (-10.5%)	↓ (-13.6%)	↓ (-6.2%)	↓ (-9.2%)	↓ (-9.6%)

Note: Significance was determined at the .05 level. The arrows show whether the satisfaction level was higher or lower for online delivery and the percentage in brackets shows the magnitude of the difference between the means. ND means no significant difference.

Source: Author calculations, data from National Student Outcomes Survey, 2018.

Employment outcomes from online learning

Few studies have compared employment outcomes for students who have completed their training online compared with classroom-based training, especially in the VET sector. However, there has been some investigation into the attitudes of employers towards online learning; for example, research from the higher education sector in America reported that most employers would prefer a job applicant with a traditional degree from an average university over an applicant with an online degree from a top university (Public Agenda Foundation 2013). Similarly, Rosendale (2017) found that employers in America had a clear preference for traditionally educated job applicants rather than those who had completed their learning through MOOCs. However, it should be noted that MOOCs do not tend to result in degree conferral and the research did not investigate employers' views on the forms of online courses that result in certification.

In the VET sector, the 2010 e-learning benchmarking survey captured information on the attitudes of employers to e-learning (a broader concept than strictly online learning). This survey showed that most employers surveyed agreed that e-learning: increased access to training; provided flexible training for employees; and represented an efficient way for people to undertake training. However, they also believed that employees learn better face to face than when using computers (Australian Flexible Learning Framework & I & J Management Services 2010a).

Investigating the views of employers was beyond the scope of this research, although an examination of the employment outcomes for graduates who completed their course online compared with other forms of delivery was conducted.

Methodology

Data from the National Student Outcomes Survey were analysed to investigate how employment outcomes for courses delivered online compare with other forms of delivery.

The three employment outcomes considered are:

- improved employment status
- of those not employed before training, employed after training
- found the training relevant to their current job.

The mode of delivery was categorised in the same way as for the student satisfaction outcomes. Employment outcomes were firstly investigated for graduates of all courses, and then for each of the selected individual qualifications, where sample sizes were large enough (as per the student satisfaction analysis).

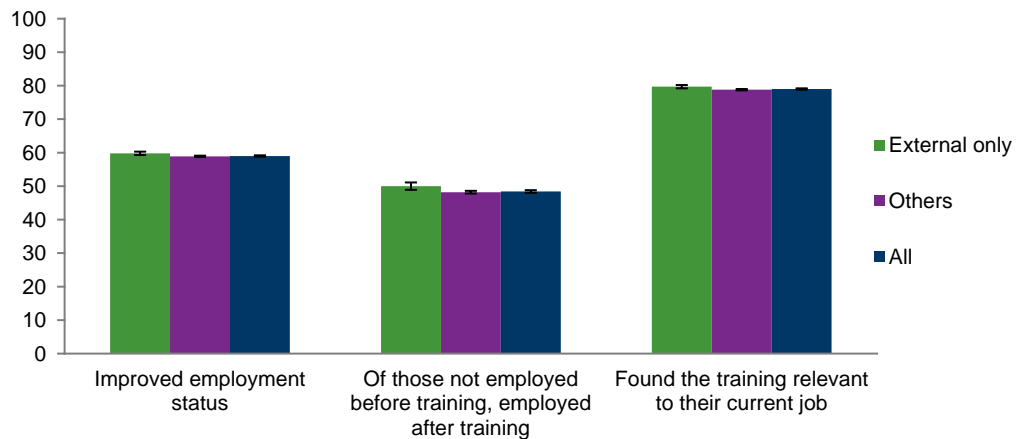
Pairwise significance testing comparisons between *external only delivery mode* against *all other delivery modes* were conducted at 0.05 level. All output from the statistical analysis can be seen in table D1 in appendix D. All figures for the individual qualifications are also provided in appendix D.

Graduates of online courses tend to have similar or slightly better employment outcomes.

Findings

Figure 16 shows the employment outcomes for graduates in all courses for 2018. The graph shows that these employment outcomes are very similar for those students whose delivery mode was external only (our proxy for online learning) compared with all other delivery modes and all delivery modes combined. While statistical analysis showed that all three employment outcomes were significantly higher for graduates of online courses, the differences are small.

Figure 16 Employment outcomes by type of training delivery mode for graduates in all courses (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Table 8 summarises the analysis of employment outcomes for the individual qualifications examined. The findings show that, overall, the employment outcomes for most of the qualifications were either higher for graduates of online courses compared with graduates of courses delivered via other modes, or there was no statistical difference. There was only one instance where an employment outcome for graduates of online courses was lower than for other delivery modes.

In summary, while subject withdrawal rates are higher and course completion rates lower for courses delivered entirely online, the outcomes for those students who do complete tend to be broadly similar to those from other delivery modes. While graduates of online courses tend to be slightly less satisfied with various elements of their training, in many cases they had better employment outcomes than those graduates who completed their course via other delivery modes.

Table 8 Differences in employment outcomes for students who completed their courses online compared with other delivery modes, in 2018

Qualification completed (online)	Improved employment status	Of those not employed before training, employed after training	Found the training relevant to their current job
Certificate III in Business Administration	↑ (+8.1%)	ND	ND
Certificate IV in Business Administration	ND	ND	↑ (+7.9%)
Diploma of Business Administration	↑ (+9.4%)	↑ (+21.3%)	ND
Certificate III in Community Services	↑ (+22.0%)	↑ (+20.5%)	↑ (+17.8%)
Certificate IV in Community Services	↑ (+17.2%)	↑ (+24.8%)	ND
Diploma of Community Services	ND	ND	↑ (+4.6%)
Certificate IV in Property Services (Real Estate)	ND	ND	ND
Certificate IV in Accounting	↑ (+17.1%)	↑ (+24.5%)	↑ (+13.1%)
Diploma of Accounting	↑ (+19.1%)	↑ (+16.6%)	↑ (+15.8%)
Certificate III in Information, Digital Media and Technology	ND	ND	↑ (+16.2%)
Certificate III in Fitness	ND	ND	ND
Certificate IV in Fitness	↓ (-11.5%)	ND	ND

Note: Significance was determined at the .05 level. The arrows show whether the satisfaction level was higher or lower for online delivery and the percentage in brackets shows the magnitude of the difference between the means. ND means no significant difference.

Source: author calculations, data from National Student Outcomes Survey, 2018.

The regulation of online courses is approached in the same way as face-to-face courses, but trainers say RTOs delivering online are disadvantaged.



Quality of online learning in VET

Little in the published literature explicitly considers the quality of online courses by comparison with those delivered face-to-face, especially in VET. Quality in VET can be considered from a number of different perspectives (Griffin 2017). One perspective is that of the student – examining the student experience and their outcomes – as presented in the previous section. Another perspective is that of the regulatory bodies. From this perspective, the quality of an online course would be measured by its compliance with the ‘Standards for RTOs 2015’. This section of the report explores the regulation of online courses.

In addition to regulation, this chapter also investigates the issues of plagiarism and authenticity¹⁰, along with the professional development of teachers and trainers in delivering online training. Both of these issues have the potential to influence the quality of online learning in VET.

Regulation

On the surface, the regulation of courses delivered online does not differ from courses delivered via other means. The primary goal of the regulators is to ensure that courses are compliant with the ‘Standards for RTOs 2015’, and the Australian Skills Quality Authority (ASQA) reports that they use the same audit approach for providers whose students undertake online training as for those whose students train according to traditional modes (2015a). NCVER emphasises in its non-financial audit guidelines that the requirements to verify enrolment participation in flexible delivery modes are not more stringent than those required for traditional or class-based delivery (NCVER 2018b). RTOs do not need approval to deliver a course online, but they must notify ASQA if they intend to do so. ASQA advises that they may ask the RTO to provide evidence that demonstrates that the course is suitable for online delivery.

ASQA advises on its website that, when considering the mode of delivery for each unit in a course, the VET provider should ensure they are taking account of the requirements of the ‘Standards for RTOs 2015’ (ASQA 2018). The standards require RTOs to ensure that the delivery modes address training package requirements, as well as the specified student skills, knowledge and experience. RTOs must also ensure that they have appropriate and adequate resources to fully support distance or online delivery of these units. ASQA advises that at audit they may assess both the mode of delivery and the resources, with the aim of determining whether these comply with the relevant clauses of the standards.

Through the national strategic review of general construction industry training (the White Card), ASQA identified examples of issues specific to online delivery, with these occurring on a relatively broad scale (meaning multiple RTOs) (ASQA 2013). The review found that most training was delivered online but had inadequate arrangements to ensure that the person undertaking the assessment was the person issued with the White Card. (Authenticity is considered further below.) In many instances, delivery was also deemed too short to allow for adequate training and assessment, and most RTOs were assessing knowledge

¹⁰ Authenticity refers to the confidence that the evidence presented for assessment is the learner’s own work.

rather than skills. While this review was limited to a single unit of competency (rather than a whole course, as is the focus of this research), it does highlight some of the issues that might be identified by the regulator.

Other examples include training packages that specify elements that do not lend themselves easily to online learning and assessment, obvious examples are where work placements are specified, as described earlier in this report. Additional examples were highlighted through the teacher/trainer interviews, such as the requirement for ‘scenarios that involve complex interactions with real people in face-to-face situations, where candidate and client are physically present in the same room’, as in counselling units in community services courses.¹¹ Teachers and trainers reported that delivering online adds another level of complexity to ensure compliance is met. In the example given immediately above, assessment occurred through the assessor viewing (via video link) the interaction between the student and a third person (both in the same room), the latter having been provided with a script for the simulated counselling session.

Despite the claim that the formal regulatory approach for online courses did not differ from that for courses delivered via other means, some of the interviewees firmly believed that regulators, and more specifically, some auditors, have negative views on online delivery. Some interviewees stated:

We want ASQA to treat and judge face-to-face and online fairly, equally. You can’t assume everything has happened correctly in face-to-face either, but it might be more onerous for online. (Compliance area)

It’s catch 22. ASQA and the government encourage the use of technology, but auditors hate it. (Fitness)

Negative perceptions of online training were deemed unfair by interviewees as there was also a view that online learning and assessment is often better than that done face to face:

Online assessment has been under a lot of scrutiny and so a lot of effort has been put into it. It’s often better than written assessment in face-to-face courses which can be poor. (Leadership and management)

Another perception is that the government thinks because it’s online it’s not thorough. It’s not online learning, it’s learning using online functionality. It can be extremely thorough. (Fitness)

Given the self-selected nature of the interviewees, it is perhaps unsurprising that these teachers and trainers are positive about the quality of the online courses they deliver. Indeed, many spoke of the processes in place at their RTOs to ensure quality standards are met. For example:

Everyone is responsible for quality. We have robust processes in place. We have a big compliance and quality area that oversees this. Teams work with teachers for resource development and assessment validation, but resources are spread pretty thin. (Business administration)

¹¹ This example is from the unit of competency ‘CHCCSL001 – Establish and confirm the counselling relationship’ (<<https://training.gov.au/Training/Details/CHCCSL001>>).

We do internal audits, checking what we do and that it meets the standards. (Compliance area)

Some [professional development] is generated by the need to be compliant with ASQA requirements – there's a lot of pressure in this space. (Property services)

Although some interviewees had described their negative perceptions of how online courses are audited, they were not arguing for the removal of these quality assurance measures. Rather, some suggested they would like to see a more measured response, taking risk into account. For example, an interviewee from business services and health administration suggested:

We need to look at what's absolutely necessary and what's not. If it's high risk, then yes. But otherwise, is it worth it?

While the views of these interviewees may seem at odds with the actions of the regulator, the goal of high-quality training is shared by both parties. Employers and students should be confident that the skills for which students have been deemed competent are transferable to the workplace, and regulation is a part of ensuring this. However, it seems a more nuanced balance might be helpful, whereby a risk-based approach could be used to determine where stronger processes relating to training and assessment could be adopted. This would reduce the burden on both the regulator and the training providers and could make training more accessible to potential students through online delivery, especially for those who are not in the vicinity of a training provider.

Plagiarism and authenticity

The quality of online learning in VET may be threatened if there is increased potential for plagiarism and/or issues with the authenticity of assessment. The distance between the student and the trainer/assessor in online learning may mean that these are larger issues for online courses compared with face-to-face courses.

The authenticity of online e-assessment is a concern shared by many stakeholders in the VET system and was examined in an enquiry commissioned by the Flexible Learning Advisory Group (Morris 2014). The enquiry found that the validity, sufficiency and authenticity of evidence (including plagiarism, inappropriate collaboration, cheating and identity fraud) was one of the primary areas of concern for employers, auditors, assessors and students.

ASQA does not prescribe the methods that RTOs should adopt to ensure that an assessment is authentic, but it advises that an RTO must consider how it will:

- ensure the evidence gathered 'belongs' to the learner being assessed and that it provides evidence of that person's skills and knowledge
- verify that the person enrolled, trained and assessed is the same person who will be issued with a qualification or statement of attainment.

Some examples of best practice for checking authenticity of online assessments could include calling the learner and asking questions relating to the submitted assessment or using the student's webcam to take photos of the student at random intervals during the online assessment process (ASQA 2015b).

Teachers and trainers were asked about plagiarism and authenticity in the courses they deliver. There were two main ways by which the teachers and trainers minimised plagiarism

and dealt with issues of authenticity: building a relationship with the students and using context-based assessment techniques. Comments from interviewees included:

The rapport built helps prevent this. Also, the answers in the assessments are not black and white – they are about strategies, context based – not so easy to cheat on. (Marketing)

Plagiarism is an issue that people will raise – chatting between the student and the trainer helps – they get a sense of someone’s work. We don’t have plagiarism software but are thinking about it. We use a simulated real estate agency in the assessment, so answers have to be in the context of a scenario – harder to copy and paste. (Property services)

Students certify that it’s their work. We integrate assessments so that we assess things more than once – so we’d hopefully pick up if they submitted something that wasn’t theirs. (Business administration)

To identify plagiarism, teachers and trainers also relied on strategies such as changes in language, recognising material that has been copied from online sources, and encountering similar mistakes in multiple students’ work. While some teachers and trainers had seen cases of plagiarism, many pointed out that it was not a significant problem and that it is not an issue exclusive to online courses.

You get collective learning/group learning. Some teachers get concerned about this, but it’s no different to students who learn in a classroom situation all getting together. It’s no bigger problem than in other forms of delivery. (Property services)

There’s a lot of information [for the students] about plagiarism, what’s expected. They have to check a box about plagiarism. We get some copy/pasting of responses – it’s easy to spot when it’s from the learning resources. We pick up on language style. The majority are authentic though. (Information technology)

Some interviewees acknowledged that there is some risk that the person submitting work through an online system is not who they say they are:

We will always need ways to ensure authenticity. Video can help to some degree. Regular checking in – check-in points so you get to know them. There is a lot of trust – we don’t have a solution yet. (Property services)

With [large RTO], I have no idea who they are, but I can pick up quickly in some cases where answers have come directly off the internet. Also, language they use can change. The volume with [large RTO] makes it hard, but I’m sure they’d have systems in place. With oral assessment, I still don’t know who they are. But the oral assessment lines up well with their written work. (Leadership and management)

But again, this second interviewee highlighted that this is not an issue exclusive to online learning, citing an example where individuals attempted to attend an assessment session when they were not the students who had been attending the face-to-face classes.

Overall, the interviews suggested that, while there were processes in place to deal with issues of plagiarism and authenticity, very few formal practices existed to check for them. Students tended to be informed about the expectations and consequences associated with these issues and were often required to certify that the work submitted was their own. However, checking for these issues largely relied on how well the teachers/trainers knew their students and their ability to identify anomalies when reviewing or assessing work.

Professional development of teachers/trainers

One factor likely to have a substantial influence on the quality and effectiveness of online learning is the capability of teachers and trainers to develop high-quality and fit-for-purpose content, as well as having the skills to deliver such a course. These challenges were recognised in the federal government's Flexible Learning Framework, which ran from 2000 to 2011 (Guiney 2014), whereby funds for staff development, content creation and infrastructure were provided. Large numbers of VET teaching staff participated in e-learning professional development programs, although these only represented a small proportion of the VET sector's total teaching workforce (Guiney 2014).

The e-learning benchmarking surveys provide an insight into the perspectives of teachers and trainers on their ability to implement e-learning strategies. For example, the 2010 e-learning benchmarking survey indicated that teachers/trainers generally felt well supported (with access to computers, e-learning resources and management encouragement) and were gaining confidence in developing and customising online resources and materials (Australian Flexible Learning Framework & I & J Management Services 2010b). In the 2013 survey, 65% of teachers/trainers surveyed reported they were confident in using e-learning, compared with 54% in 2010 (Australian Flexible Learning Framework & I & J Management Services 2013b).

Research by Callan, Johnston and Poulsen (2015), however, noted that the majority of teachers who participated in their study were seen to require considerable professional development to enable them to respond better to the increased use of online learning. Some teachers held the opinion that they were 'too old' to learn and they lacked confidence, which inhibited their capacity to reconceptualise how they teach their subjects and re-create content.

While a plethora of information is available both online and in the literature for teachers and trainers on how to develop and deliver online learning effectively, the extent of formal professional development in this area for teachers and trainers is largely unknown. During the interviews, teachers and trainers were asked about any training they had completed and had access to in their delivery of online training.

Interviewees reported a great deal of variability in the types and amount of training and professional development available. Some teachers and trainers reported participating in training and professional development specific to teaching online or distance courses. This may have occurred either in the past, when the individual had started delivering online training, or it may have been a recent a professional development activity. Others stated that they had only undertaken training with a more general teaching focus, such as the Certificate IV in Training and Assessment. A few mentioned some further relevant training they were considering.

Teachers and trainers who worked as contractors had to be self-motivated in their professional development, citing a need to demonstrate their capabilities and currency to those RTOs to which they were contracted. These trainers tended to undertake numerous professional development activities, some of which were specific to delivering online training. Many of the activities themselves were undertaken online.

A substantial number of the teachers and trainers reported that ample opportunities for professional development were provided by their RTO. These activities were often related

to using the online learning platform, but some focused on various elements of teaching and assessment and could be applied to online delivery.

On the other end of the spectrum, however, some teachers and trainers indicated that they had undertaken very little professional development (especially in online delivery) and had mostly learned on the job. Some would like more opportunities to participate in professional development in the area, with a number specifically mentioning that they would like to be alerted about new technologies and ideas coming into the market.

Almost all interviewees reported opportunities for informal learning, often from other teachers and trainers in their RTOs. Supportive and collaborative teams were often referred to as good sources of information and knowledge.

The experience of RTOs transitioning from face-to-face to online delivery was discussed by several of the interviewees. When asked about the professional development provided to staff when one RTO transitioned to fully online, one interviewee from the property services area said:

Yes, not just in capability but in their attitudes towards change. We've worked to upskill the team and take away the fear. Some longer serving staff resigned, but some could see the benefits and have adapted well.

Similarly, another interviewee reported a focus on upskilling teachers in face-to-face sections to increase their online teaching but acknowledged that this was not consistent across all areas.

Overall, it seemed that the professional development available to teachers and trainers depended on both the opportunities provided by the RTO in which they taught and their own appetite for further training. Informal learning played a substantial role, with many trainers forming part of a team with which they could share ideas and knowledge.

Many attributes of good practice for online delivery are not unique to the online delivery context, but how they are enacted may differ.



Attributes of good practice

Interviewees were asked to identify the factors they considered contributed towards good practice in online learning. Their answers, and other information gained through the interviews, were used to compile a list of attributes, given in table 9, that appear to enable the effective online delivery of VET.

The aim of the table is to focus on good practice in delivering online courses, keeping in mind however that some of the elements listed also apply to all forms of teaching/training. The list is unlikely to be exhaustive, and not all attributes will suit all courses and situations. Nevertheless, it provides a starting point for assessing what makes for a good online delivery.

The training provider and staff

Some interviewees stated that, above everything else, the attitude and ethos of the training provider was critical in good online delivery. The motivation of the provider and the teachers/trainers set the tone for high-quality teaching and training, regardless of the mode of delivery.

Before and on enrolment

The pre-enrolment and enrolment stages are important in ensuring that individuals are enrolling in the most appropriate course for them and that their expectations are realistic. Interviewees suggested that online learning does not suit everyone; hence, it is useful at this stage to assess students' expectations and previous experience with online learning.

This stage is also an appropriate point to provide the necessary tools and information to get students started. The relationship-building process between the teachers/trainers and students can also begin here.

The online learning platform, resources and assessment

The online learning platform is the main point of contact for the student and therefore it is important that the system is easy to use and the resources engaging. Content should be delivered in a variety of ways and developed specifically for online delivery. As one teacher/trainer explained, 'a three-hour classroom session is not a great three-hour video'.

Structure is important in online learning, given that students are navigating the content themselves. Students should be encouraged to complete learning tasks and online quizzes to ensure they are prepared to tackle assessments.

Interviewees talked about the need to be flexible in catering to students' needs, particularly regarding assessment tasks. The various circumstances of students that may have prompted them to consider online learning (for example, where they live, if they are travelling, physical or mental health issues) can result in a diverse array of challenges in submitting work for assessment. In the interviews, teachers and trainers provided numerous examples of situations where they had to find novel solutions to problems that had arisen.

Student support and communication

The interviews revealed that the way in which student support is provided may depend on the volume of students. Students in courses with small student numbers are able to access the teacher/trainer directly for all queries. However, this may not be possible in courses with high volumes of students. Students in courses with large numbers may need to access assistance through a helpdesk, from which they are referred to appropriate people (for example, a teacher/trainer for course content questions, a course coordinator for enrolment questions, an assessor for feedback clarification, or an IT person for technical support). Student support may therefore be provided by a dedicated support team or may be provided by an individual teacher/trainer.

In some instances, online learning can mean high levels of 1:1 tuition – perhaps more than that received by students in a classroom-based situation. Some trainers believe this makes online learning effective, even if not particularly efficient (compared with teaching students as a group). One characteristic of the online courses discussed in interviews is that teachers and trainers *expected* students to seek out support – the support provided is seen as an integral aspect of the teaching and learning process.

Some teachers and trainers spoke of the processes in place to monitor the progress of students to enable proactive support to be provided. However, others reported that responding to student queries left no time to proactively contact other students. These trainers emphasised that the onus was on the students to seek support when they needed it.

Quality and the attributes of teachers/trainers

While discussed in detail above, table 9 summarises a few additional elements related to quality and the attributes of the teachers and trainers. Importantly, as explained above, the ability of teachers and trainers to problem-solve and provide solutions to students' problems is a significant enabler in ensuring that students are able to complete their online training. As is the case for all forms of training delivery, the dedication and commitment of teachers and trainers to ensure that students succeed goes a long way to ensuring good outcomes for students in courses delivered online.

Table 9 Identified elements of good practice in online delivery of VET

Element	Description	Examples/comments
The training provider	The right attitude and intention of the provider	The attitude and intention of the provider is paramount in the delivery of high-quality online training.
Pre-enrolment	Ensuring students are enrolling in the most appropriate course for them	A checklist for the following might be useful: <ul style="list-style-type: none"> • Do they have the assumed knowledge? • Do they have adequate numeracy and literacy skills? • Do they have adequate digital literacy skills? • Do they have the required tools (computer access, compatible operating system, specific software)? • Do they have experience with online learning? • Are they aware of any compulsory work placement requirements?
Enrolment	Orientation	Provide information on: <ul style="list-style-type: none"> • how to use the system • how to get help • how to submit assessments. Set expectations regarding: <ul style="list-style-type: none"> • response times for queries to be answered • turnaround times on assessment • how feedback might be presented.
	Provide a training plan	Provide actual or indicative due dates to ensure the student can complete the course in the allotted timeframe.
The online learning platform	Good, clear introductory modules	Include instructions on what's required and how to submit work assessment.
	Easy navigation and usability	
	Uniformity and consistency across units/clusters/courses	This helps support staff as well as students.
	Ensure it is clear when linking to third-party products, and that it is easy to return to same point	
Teaching resources	Well-structured, accessible, interactive and rich environment that creates momentum	Resources that engage students to complete activities.
	Presented in a variety of ways to suit different learning styles and preferences	Different learning styles; for example, read, listen, watch. Stimulation that breaks up the reading; for example, screen casting can be used to create a short video rather than inserting numerous screen shots into a document.
	Resources need to be accurate and up to date	Include links to external sources (if third-party resources are used, these need to be monitored so broken links or other changes can be updated).

Element	Description	Examples/comments
	Delivered in short, digestible ways	
	Presented in clusters of units or tasks	This enables a more work-based context.
	Using webinars and other means to provide opportunity for students to access a classroom-style experience (live training, online tutorials)	Enables students to ask questions in a live format, and for other students to hear the answers to those questions. These can be recorded and uploaded to the system for those who cannot attend the live session.
	Industry input into resource development and assessment validation	
	Provide ways for students to find further information	For example, links to other websites.
	Non-assessable quizzes and activities along the way to enable students to test their understanding	
	Consider bandwidth when developing resources	Not all students have access to good internet.
	Control the learning journey	Dependency rules and milestones help to ensure that the student builds the required knowledge and skills before assessment.
Assessment	Varied forms of assessment	Video or telephone-based assessment is useful for role-play scenarios where students have to react, noting that some training packages specify the need for oral assessment (requires awareness of bandwidth constraints and digital literacy required in uploading videos).
	Context-based assessment	More easily transferable to the workplace, less chance of plagiarism. Examples include students becoming 'employees' of virtual companies and preparing assessments based on their 'workplace'.
	Flexibility in how evidence is submitted for assessment	Could offer more than one way to submit assessment; for example, students who get nervous recording themselves could be provided with the opportunity to complete assessment on the phone.
	Integration of assessment so that competencies are assessed more than once	Ensures competency and helps identify plagiarism.
	For some subject areas, online simulations can be useful	May be provided by third parties.
	Flexibility to offer alternative arrangements to cater to student needs	For example: <ul style="list-style-type: none"> • students being able to visit the campus if nearby • sending resources to students through the mail if needed • taking assessment 'off-line' in the case of technical difficulties.
Communication	Early engagement	This could be an automated email, SMS or a phone call on enrolment. Might include instructions on how to begin, how to access support etc.
	Build a relationship between the trainer and the student	Personalised introduction to the teacher/trainer. Demonstrate there are real people there to help support the students; this can be done via a phone call or personalised email; and photos/bios of trainers on the learning platform.
	Proactively contact students	Regular touch points. This could be by phone or email (let students nominate their preferred form of communication).
	Send reminders when things are due	This could be automated.

Element	Description	Examples/comments
	Feedback on work	Could be written, an audio file, a phone call, a video.
	Enable student interaction	<p>A forum or Facebook group can be set up to provide the opportunity for students to communicate with each other (and the teacher/trainer). This is one way to generate the camaraderie among students they would have in a classroom-based course.</p> <p>There are several aspects of this that require consideration:</p> <ul style="list-style-type: none"> • could be assessable (to demonstrate interaction) or non-assessable (for informal chat); could provide both • privacy and safety issues, especially if underage students are enrolled in the course • may require substantial monitoring by teachers/trainers to ensure integrity of information being shared. <p>Not all students will choose to engage in a forum or Facebook group (particularly if it is not assessable).</p>
Student support	Provide multiple ways students can seek support	<p>This may include phone, email, messaging functions of the online learning platform, chat bots, Skype etc.</p> <p>Ensure support is available to students to enable them to ask even the simplest of questions.</p> <p>Ensure that students are put through to someone who can answer their question correctly.</p>
	Ensure students are aware of how to access support	Can be provided on enrolment, presented clearly in the online learning platform.
	Be responsive	Ensure support is provided in a timely manner. However, ensure student expectations are set early; provide guidance on how long it takes for queries to be responded to in an introductory email and/or provide the information on the online learning platform.
	Monitor progress to identify and proactively contact 'at risk' students.	<p>Run reports in the system to identify students who have not logged on or submitted anything for a period of time; target these for pro-active support.</p> <p>Monitor those who are close to finishing but may not have time to submit everything on time; target for possible extensions.</p> <p>Could use a case management approach for at risk students.</p>
	Work placement support	Provide support for students organising work placement. Larger RTOs could consider a dedicated work placement coordinator.
	Access to special needs support services	This might include support for Indigenous students, international students, students with a disability.
	Availability of dedicated support sessions – either online or face to face	Dedicated support sessions can be provided either online or face to face, individually, or in a group.

Element	Description	Examples/comments
Teachers and trainers	Highly skilled and knowledgeable teachers and trainers, who are good at troubleshooting and have empathy for the students	
	Accessible to the students	
	Ensure teachers/trainers/assessors are familiar with all the resources and that they understand where support is likely to be needed	Some RTOs encourage staff to go through the course as a student when commencing to ensure familiarity with the course materials.
	Provide opportunity for professional development	Time and resources are required for this.
Quality	Industry involvement in resource development and assessment validation	
	Mapping of resources to units of competence (even if presented in clustered, context-based ways)	
	Processes in place to ensure training meets the required standards	A team including compliance experts and teachers could be involved in developing resources and assessment.
	Procedures in place to ensure authenticity and to identify plagiarism	Processes established to deal with identified cases
	Continuous improvement	Student feedback can inform this.
Student feedback	Could be sought on completion but ideally would also capture students who withdraw	Can be used to inform continuous improvement of the course.



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Appendix A

Table A1 Commencements for programs delivered online (electronic-based), via other delivery modes, and for all delivery modes, by funding source and AQF level, 2015–17

		Online only (% of all delivery modes within the qual level)						Other delivery modes			All delivery modes		
		2015		2016		2017		2015	2016	2017	2015	2016	2017
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>
Commonwealth/ state funding	Diploma or higher	6 674	7.6	8 502	10.1	8 105	10.5	80 946	75 641	69 272	87 620	84 143	77 377
	Certificate IV	12 077	8.1	13 523	10.4	13 533	11.2	137 611	116 520	107 086	149 688	130 043	120 619
	Certificate III	17 914	5.1	24 001	6.9	28 081	8.4	334 793	325 528	304 280	352 707	349 529	332 361
	Certificate II	5 095	2.4	5 206	2.3	5 195	2.4	209 274	219 951	207 260	214 369	225 157	212 455
	Certificate I	2 222	2.5	2 188	2.2	2 156	2.4	87 437	96 765	88 877	89 659	98 953	91 033
	Total	43 982	4.9	53 420	6.0	57 070	6.8	850 061	834 405	776 775	894 043	887 825	833 845
Fee-for-service - domestic	Diploma or higher	62 877	31.5	52 731	31.3	17 713	16.7	136 701	115 993	88 304	199 578	168 724	106 017
	Certificate IV	25 702	16.0	21 946	16.9	18 717	15.4	135 180	107 649	102 575	160 882	129 595	121 292
	Certificate III	15 366	6.7	23 008	10.6	23 381	10.5	214 620	193 800	199 905	229 986	216 808	223 286
	Certificate II	8 888	6.3	5 950	4.3	4 713	3.3	133 085	133 106	137 706	141 973	139 056	142 419
	Certificate I	14 396	39.4	9 630	31.2	16 066	34.0	22 144	21 224	31 183	36 540	30 854	47 249
	Total	127 229	16.5	113 265	16.5	80 590	12.6	641 730	571 772	559 673	768 959	685 037	640 263
Fee-for-service - international	Diploma or higher	1 181	3.0	492	1.0	518	0.8	37 734	48 149	63 009	38 915	48 641	63 527
	Certificate IV	549	2.2	172	0.6	185	0.6	24 317	26 710	32 404	24 866	26 882	32 589
	Certificate III	538	2.8	116	0.5	211	0.9	18 614	23 086	24 078	19 152	23 202	24 289
	Certificate II	114	2.0	NP	0.2	NP	0.0	5 567	5 743	6 254	5 681	5 753	6 256
	Certificate I	NP	3.2	0	0.0	NP	0.8	1 341	1 553	1 943	1 386	1 553	1 959
	Total	2 427	2.7	790	0.7	932	0.7	87 573	105 241	127 688	90 000	106 031	128 620

Note: Commencement figures are based on the dataset compiled to generate completion rates, not the complete collection of student records. Figures fewer than 50 are not reported (NP).

Source: Estimated using National VET Provider Collection.

Table A2 Commencements for programs delivered online (electronic-based), via other delivery modes, and for all delivery modes, by provider type and AQF level, 2015–17

		Online only (% of all delivery modes within the qual level)						Other delivery modes			All delivery modes		
		2015		2016		2017		2015	2016	2017	2015	2016	2017
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>
TAFE	Diploma or higher	15 822	16.5	15 553	18.6	11 394	17.1	80 319	67 990	55 424	96 141	83 543	66 818
	Certificate IV	14 189	14.0	15 267	16.9	13 600	15.7	86 814	74 867	72 988	101 003	90 134	86 588
	Certificate III	16 464	8.8	21 227	11.1	23 575	12.8	170 287	170 047	160 391	186 751	191 274	183 966
	Certificate II	5 704	5.4	6 182	5.6	5 761	5.2	99 892	104 086	104 899	105 596	110 268	110 660
	Certificate I	1 978	5.0	1 549	3.5	1 475	3.2	37 877	42 882	44 182	39 855	44 431	45 657
	Total	54 157	10.2	59 778	11.5	55 805	11.3	475 189	459 872	437 884	529 346	519 650	493 689
University	Diploma or higher	856	6.8	1 329	11.0	703	5.8	11 679	10 752	11 481	12 535	12 081	12 184
	Certificate IV	470	5.6	449	6.2	349	5.6	7 909	6 743	5 928	8 379	7 192	6 277
	Certificate III	1 020	12.3	857	11.9	619	7.5	7 252	6 361	7 662	8 272	7 218	8 281
	Certificate II	1 070	15.8	740	11.6	255	3.5	5 686	5 624	7 069	6 756	6 364	7 324
	Certificate I	43	0.5	30	0.3	68	0.8	8 285	9 521	8 375	8 328	9 551	8 443
	Total	3 459	7.8	3 405	8.0	1 994	4.7	40 811	39 001	40 515	44 270	42 406	42 509
School	Diploma or higher	74	2.5	32	1.6	41	1.8	2 912	1 956	2 299	2 986	1 988	2 340
	Certificate IV	524	11.2	80	2.3	47	1.3	4 144	3 347	3 607	4 668	3 427	3 654
	Certificate III	80	0.5	57	0.5	42	0.3	14 970	11 238	12 515	15 050	11 295	12 557
	Certificate II	1	0.0	14	0.2	15	0.1	8 202	7 241	11 493	8 203	7 255	11 508
	Certificate I	0	0.0	0	0.0	0	0.0	5 652	6 600	7 028	5 652	6 600	7 028
	Total	679	1.9	183	0.6	145	0.4	35 880	30 382	36 942	36 559	30 565	37 087
Community education provider	Diploma or higher	14 447	19.9	14 651	21.2	4 321	8.8	57 974	54 531	44 815	72 421	69 182	49 136
	Certificate IV	3 984	3.8	3 744	4.8	3 884	6.0	99 591	74 296	60 933	103 575	78 040	64 817
	Certificate III	6 095	2.4	5 553	2.4	7 699	3.6	248 933	222 299	208 031	255 028	227 852	215 730
	Certificate II	1 258	1.3	476	0.5	792	1.0	98 830	91 356	82 365	100 088	91 832	83 157
	Certificate I	9 301	28.6	6 200	23.6	12 158	35.0	23 257	20 116	22 536	32 558	26 316	34 694
	Total	35 085	6.2	30 624	6.2	28 854	6.4	528 585	462 598	418 680	563 670	493 222	447 534

		Online only (% of all delivery modes within the qual level)						Other delivery modes			All delivery modes		
		2015		2016		2017		2015	2016	2017	2015	2016	2017
		N	%	N	%	N	%	N	N	N	N	N	N
Enterprise provider	Diploma or higher	3	2.2	3	3.8	1	2.2	133	77	45	136	80	46
	Certificate IV	15	2.4	16	1.7	29	3.1	612	929	901	627	945	930
	Certificate III	39	0.3	124	0.9	61	0.5	11 699	13 098	13 401	11 738	13 222	13 462
	Certificate II	83	0.1	145	0.2	136	0.2	65 034	65 076	55 717	65 117	65 221	55 853
	Certificate I	43	0.2	30	0.1	68	0.4	24 027	24 768	18 932	24 070	24 798	19 000
	Total	183	0.2	318	0.3	295	0.3	101 505	103 948	88 996	101 688	104 266	89 291
Private training provider	Diploma or higher	39 530	27.9	30 157	22.4	9 876	8.5	102 364	104 477	106 521	141 894	134 634	116 397
	Certificate IV	19 146	16.3	16 085	15.1	14 526	12.9	98 038	90 697	97 708	117 184	106 782	112 234
	Certificate III	10 120	8.1	19 307	13.9	19 677	13.5	114 886	119 371	126 263	125 006	138 678	145 940
	Certificate II	5 981	7.8	3 609	4.1	2 951	3.2	70 282	85 417	89 677	76 263	89 026	92 628
	Certificate I	5 298	30.9	4 009	20.4	4 469	17.6	11 824	15 655	20 950	17 122	19 664	25 419
	Total	80 075	16.8	73 167	15.0	51 499	10.5	397 394	415 617	441 119	477 469	488 784	492 618

Note: Commencement figures are based on the dataset compiled to generate completion rates, not the complete collection of student records. Figures fewer than 50 are not reported (NP).

Source: Estimated using National VET Provider Collection.

Appendix B

Table B1 Number of commencing online (electronic-based) programs and for all programs (total VET activity), 2015–17

	Online programs (% of all programs for that qualification)						All programs (all delivery modes)		
	2015		2016		2017		2015	2016	2017
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	<i>N</i>	<i>N</i>
BSB30415 – Certificate III in Business Administration	2 121	16.1	2 801	20.7	2 905	22.1	13 161	13 524	13 168
BSB40515 – Certificate IV in Business Administration	976	19.3	974	23.0	812	21.7	5 046	4 233	3 742
BSB50415 – Diploma of Business Administration	2 448	39.1	3 639	54.9	929	34.1	6 258	6 625	2 727
CHC32015 – Certificate III in Community Services	443	9.4	2 284	32.9	3 216	31.8	4 704	6 944	10 117
CHC42015 – Certificate IV in Community Services	644	9.1	870	16.0	923	17.1	7 069	5 445	5 399
CHC52015 – Diploma of Community Services	3 362	27.2	3 430	26.0	1 513	17.6	12 377	13 178	8 575
CPP30211 – Certificate III in Property Services (Agency)	155	18.8	401	32.5	382	35.3	825	1 234	1 081
CPP40307 – Certificate IV in Property Services (Real Estate)	3 228	17.8	3 113	22.6	5 093	29.7	18 133	13 800	17 121
CPP50307 – Diploma of Property Services (Agency Management)	93	6.0	99	8.6	104	18.8	1 550	1 150	553
FNS40217 – Certificate IV in Accounting	4 512	31.1	3 521	27.2	3 118	25.1	14 499	12 949	12 426
FNS50217 – Diploma of Accounting	1 249	24.1	1 576	27.1	998	18.0	5 182	5 817	5 556
FNS60217 – Advanced Diploma of Accounting	260	20.0	291	19.9	223	12.5	1 302	1 462	1 781
ICT30115 – Certificate III in Information, Digital Media and Technology	1 267	14.4	1 269	15.3	952	12.1	8 780	8 291	7 884
ICT40115 – Certificate IV in Information Technology	190	11.6	151	10.2	188	11.2	1 644	1 481	1 672
ICT50115 – Diploma of Information Technology	872	37.1	605	34.9	221	12.6	2 348	1 735	1 759
SIS30315 – Certificate III in Fitness	2 877	15.1	3 119	19.8	2 397	13.8	19 091	15 738	17 318
SIS40215 – Certificate IV in Fitness	3 799	31.5	4 301	39.8	1 167	10.9	12 054	10 807	10 751

Source: Estimated using National VET Provider Collection.

Appendix C

Table C1 Satisfaction outcomes by type of training delivery mode for graduates in selected courses, 2018

Qualification	Mode of delivery						
	External only		Others		Estimated difference	Standard error	Test statistic
	%	95% margin of error	%	95% margin of error			
BSB30415 - Certificate III in Business Administration							
Satisfied with teaching	83.5	2.8	87.8	1.4	4.3	1.597191412	2.692225845
Satisfied with assessment	93.7	1.8	91.3	1.2	2.4	1.103740186	2.174424769
Satisfied with overall quality of training	89.2	2.2	89.2	1.3	0	1.303768606	0
Achieved main reason for doing the training	76.5	3.1	71.4	1.9	5.1	1.855067241	2.74922649
Recommend training	90.9	2.1	93.1	1.1	2.2	1.209517305	1.818907419
Recommend training provider	89.7	2.2	91.7	1.2	2	1.278567764	1.564250294
BSB40515 - Certificate IV in Business Administration							
Satisfied with teaching	86.1	3.8	87.9	2.9	1.8	2.438861	0.738049
Satisfied with assessment	90.2	3.2	91.8	2.5	1.6	2.071831	0.772264
Satisfied with overall quality of training	88.3	3.4	91.6	2.5	3.3	2.153158	1.532633
Achieved main reason for doing the training	80.4	4.1	78.4	3.7	2	2.817694	0.7098
Recommend training	90.2	3.2	93.4	2.2	3.2	1.981274	1.615122
Recommend training provider	90.0	3.2	92.3	2.5	2.3	2.071831	1.110129
BSB50415 - Diploma of Business Administration							
Satisfied with teaching	83.5	3.5	85.2	4.8	1.7	3.030887	0.560892
Satisfied with assessment	87.2	3.2	84.0	4.9	3.2	2.985893	1.071706
Satisfied with overall quality of training	88.2	3.0	82.7	5.0	5.5	2.974975	1.848755
Achieved main reason for doing the training	71.3	4.1	75.4	5.7	4.1	3.582345	1.144502
Recommend training	89.3	2.8	90.0	3.8	0.7	2.40825	0.290668
Recommend training provider	88.8	2.9	88.8	4.1	0	2.56222	0

Qualification	Mode of delivery						
	External only		Others		Estimated difference	Standard error	Test statistic
	%	95% margin of error	%	95% margin of error			
CHC32015 - Certificate III in Community Services							
Satisfied with teaching	84.1	5.9	87.4	2.4	3.3	3.249724	1.015471
Satisfied with assessment	91.0	4.4	91.8	2.0	0.8	2.465928	0.324422
Satisfied with overall quality of training	88.7	4.9	91.0	2.0	2.3	2.700228	0.85178
Achieved main reason for doing the training	80.4	6.2	71.4	3.3	9	3.583435	2.511557
Recommend training	88.1	5.0	92.7	1.9	4.6	2.728996	1.685602
Recommend training provider	87.4	5.2	92.8	1.8	5.4	2.807514	1.92341
CHC42015 - Certificate IV in Community Services							
Satisfied with teaching	82.7	6.3	91.3	1.6	8.6	3.316327	2.593231
Satisfied with assessment	89.4	5.2	90.3	1.7	0.9	2.791241	0.322437
Satisfied with overall quality of training	90.3	4.7	90.4	1.7	0.1	2.55	0.039216
Achieved main reason for doing the training	85.0	6.2	75.9	2.4	9.1	3.391994	2.682788
Recommend training	90.6	4.8	94.2	1.4	3.6	2.55102	1.4112
Recommend training provider	91.3	4.5	93.2	1.5	1.9	2.42011	0.785088
CHC52015 - Diploma of Community Services							
Satisfied with teaching	82.6	3.4	86.3	1.9	3.7	1.987178	1.861937
Satisfied with assessment	86.8	3.1	91.4	1.6	4.6	1.779874	2.584453
Satisfied with overall quality of training	85.6	3.2	84.9	2.0	0.7	1.925302	0.363579
Achieved main reason for doing the training	84.0	3.2	81.3	2.1	2.7	1.952822	1.382614
Recommend training	87.7	3.0	92.0	1.5	4.3	1.711277	2.512744
Recommend training provider	84.7	3.3	88.9	1.8	4.2	1.917852	2.18995

Qualification	Mode of delivery						
	External only		Others		Estimated difference	Standard error	Test statistic
	%	95% margin of error	%	95% margin of error			
SIS30315 - Certificate III in Fitness							
Satisfied with teaching	72.3	4.1	92.5	2.2	20.2	2.373957	8.508999
Satisfied with assessment	75.7	3.8	91.5	2.4	15.8	2.293082	6.89029
Satisfied with overall quality of training	76.8	3.7	89.6	2.6	12.8	2.307228	5.547782
Achieved main reason for doing the training	82.4	3.4	82.4	3.3	0	2.41742	0
Recommend training	83.9	3.3	94.6	1.9	10.7	1.942799	5.507517
Recommend training provider	82.5	3.4	93.7	2.0	11.2	2.012559	5.565053
SIS40215 - Certificate IV in Fitness							
Satisfied with teaching	73.8	5.3	91.5	2.0	17.7	2.890206	6.124131
Satisfied with assessment	78.8	4.9	89.3	2.2	10.5	2.740418	3.831532
Satisfied with overall quality of training	73.3	5.3	86.9	2.4	13.6	2.968406	4.581584
Achieved main reason for doing the training	84.3	4.3	90.5	2.2	6.2	2.464344	2.515883
Recommend training	82.2	4.7	91.4	2.0	9.2	2.606039	3.530261
Recommend training provider	80.6	4.7	90.2	2.2	9.6	2.647659	3.625844
FNS40615 - Certificate IV in Accounting¹							
Satisfied with teaching	85.6	3.1	88.5	2.5	2.9	2.031868	1.427258
Satisfied with assessment	94.2	2.0	90.9	2.3	3.3	1.555077	2.122082
Satisfied with overall quality of training	91.7	2.3	89.7	2.3	2	1.659536	1.205156
Achieved main reason for doing the training	80.4	3.4	65.3	3.7	15.1	2.563744	5.889824
Recommend training	94.7	1.9	92.3	2.1	2.4	1.444878	1.66104
Recommend training provider	95.1	1.8	92.2	2.1	2.9	1.411155	2.055055

Qualification	Mode of delivery						
	External only		Others		Estimated difference	Standard error	Test statistic
	%	95% margin of error	%	95% margin of error			
FNS50215 - Diploma of Accounting¹							
Satisfied with teaching	82.4	4.1	88.8	3.1	6.4	2.622469	2.440448
Satisfied with assessment	88.8	3.4	91.7	2.7	2.9	2.215132	1.309177
Satisfied with overall quality of training	84.8	3.8	89.3	3.0	4.5	2.470147	1.821754
Achieved main reason for doing the training	79.6	4.2	72.1	4.4	7.5	3.10345	2.416665
Recommend training	88.1	3.4	92.8	2.5	4.7	2.153158	2.18284
Recommend training provider	88.8	3.3	90.9	2.9	2.1	2.241417	0.936907
ICT30115 - Certificate III in Information, Digital Media and Technology							
Satisfied with teaching	75.2	7.0	89.1	2.5	13.9	3.792364	3.66526
Satisfied with assessment	83.4	6.0	86.1	2.8	2.7	3.378152	0.799254
Satisfied with overall quality of training	85.8	5.5	88.2	2.5	2.4	3.08241	0.778612
Achieved main reason for doing the training	76.7	6.5	73.1	3.6	3.6	3.790991	0.94962
Recommend training	87.6	5.3	91.2	2.4	3.6	2.968406	1.212772
Recommend training provider	88.3	5.2	94.2	2.0	5.9	2.842528	2.075617
CPP40307 - Certificate IV in Property Services (Real Estate)							
Satisfied with teaching	89.6	2.8	93.3	1.5	3.7	1.620651	2.283033
Satisfied with assessment	95.6	1.8	93.0	1.5	2.6	1.195446	2.17492
Satisfied with overall quality of training	93.3	2.2	93.6	1.5	0.3	1.358523	0.220828
Achieved main reason for doing the training	92.1	2.4	88.6	1.9	3.5	1.561758	2.241064
Recommend training	96.1	1.7	96.2	1.2	0.1	1.061666	0.094192
Recommend training provider	95.4	1.9	96.2	1.1	0.8	1.120127	0.714204

Qualification	Mode of delivery				Estimated difference	Standard error	Test statistic
	External only		Others				
	%	95% margin of error	%	95% margin of error			
All courses							
Satisfied with teaching	81.1	0.4	88.0	0.2	6.9	0.22817	30.24058
Satisfied with assessment	87.2	0.4	89.3	0.2	2.1	0.22817	9.203656
Satisfied with overall quality of training	83.7	0.4	87.4	0.2	3.7	0.22817	16.21596
Achieved main reason for doing the training	82.9	0.4	84.5	0.2	1.6	0.22817	7.012309
Recommend training	87.9	0.3	91.6	0.1	3.7	0.161341	22.93284
Recommend training provider	87.2	0.4	90.1	0.1	2.9	0.210363	13.78572

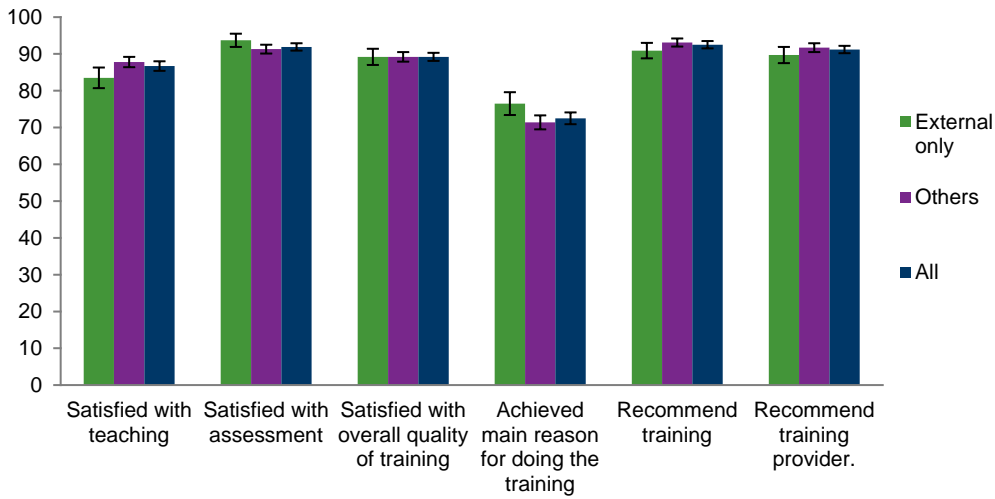
Notes: 1 Superseded accounting qualifications were used for analysis of the Student Outcomes Survey data to ensure the sample was large enough (updated qualifications came into use in 2018).

FNS60215 - Advanced Diploma of Accounting, ICT40115 - Certificate IV in Information Technology, ICT50115 - Diploma of Information Technology, CPP30211 - Certificate III in Property Services (Agency) and CPP50307 - Diploma of Property Services (Agency Management) have been omitted from the table due to small sample sizes.

Significance was determined at the .05 level. Where the test statistic is greater than 1.96, the difference is statistically significant.

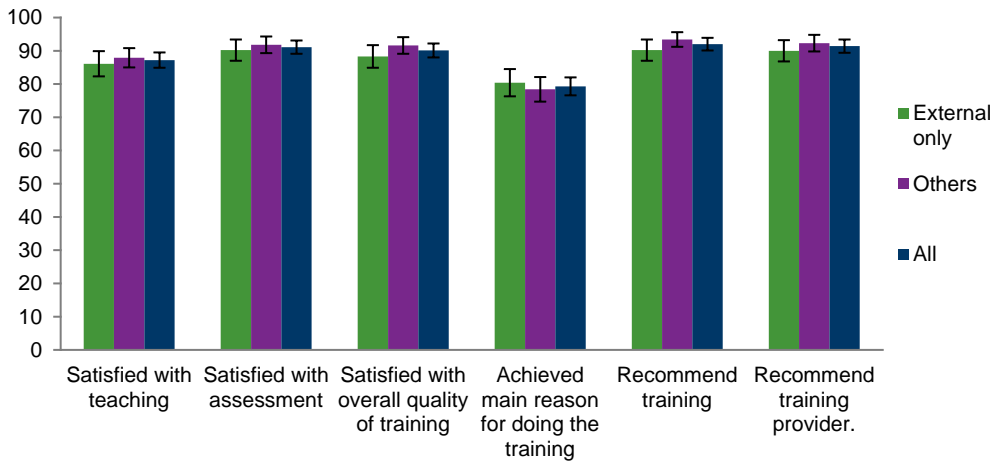
Source: National VET Student Outcomes Survey 2018.

Figure C1 Satisfaction outcomes by type of training delivery mode for graduates of Certificate III in Business Administration (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Figure C2 Satisfaction outcomes by type of training delivery mode for graduates of Certificate IV in Business Administration (%), +/- 95% margin of error, 2018



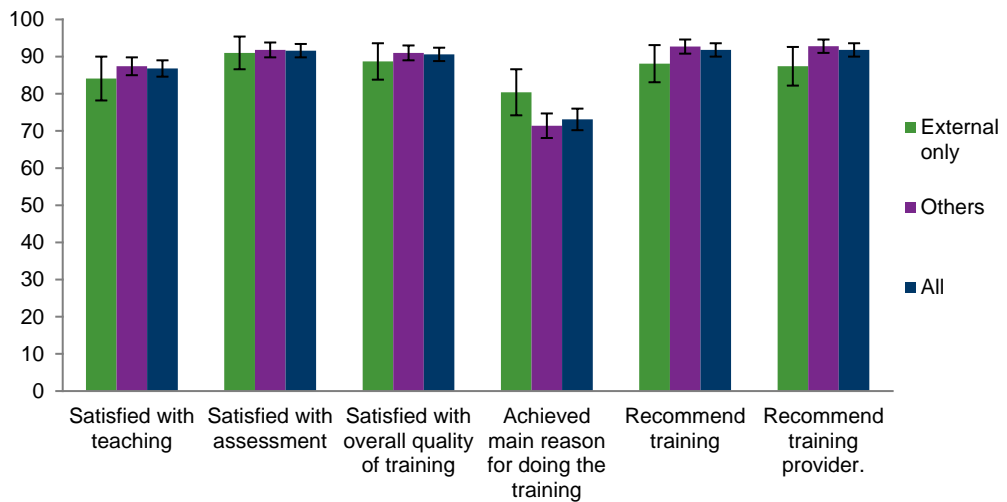
Source: National Student Outcomes Survey 2018.

Figure C3 Satisfaction outcomes by type of training delivery mode for graduates of Diploma of Business Administration (%), +/- 95% margin of error, 2018



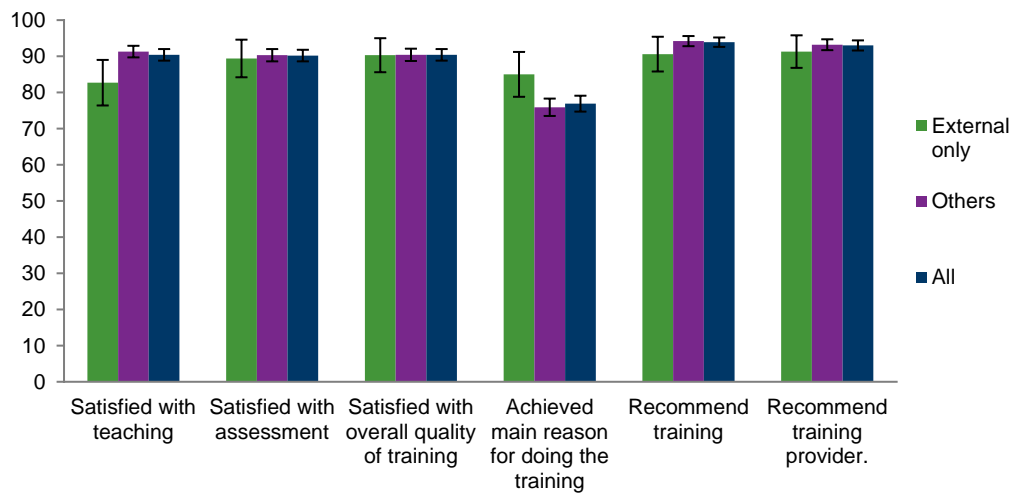
Source: National Student Outcomes Survey 2018.

Figure C4 Satisfaction outcomes by type of training delivery mode for graduates of Certificate III in Community Services (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Figure C5 Satisfaction outcomes by type of training delivery mode for graduates of Certificate IV in Community Services (%), +/- 95% margin of error, 2018



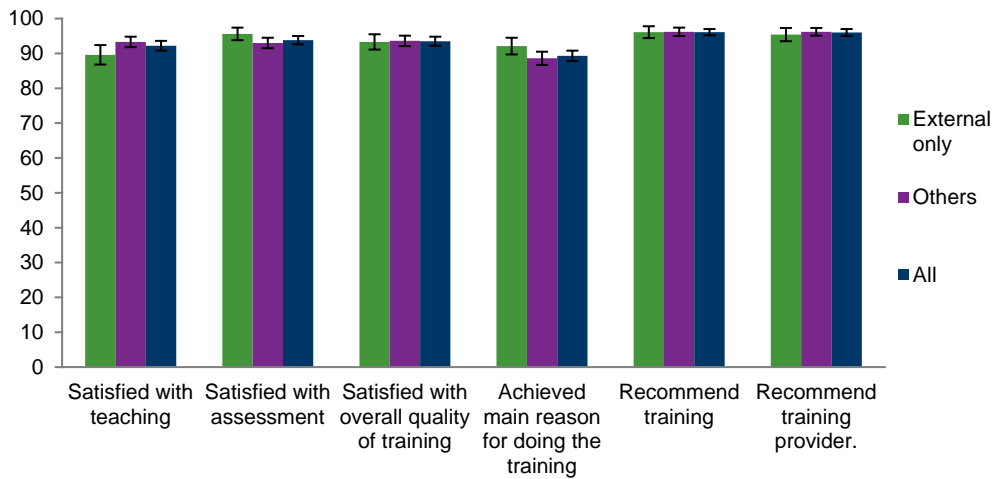
Source: National Student Outcomes Survey, 2018.

Figure C6 Satisfaction outcomes by type of training delivery mode for graduates of Diploma of Community Services (%), +/- 95% margin of error, 2018



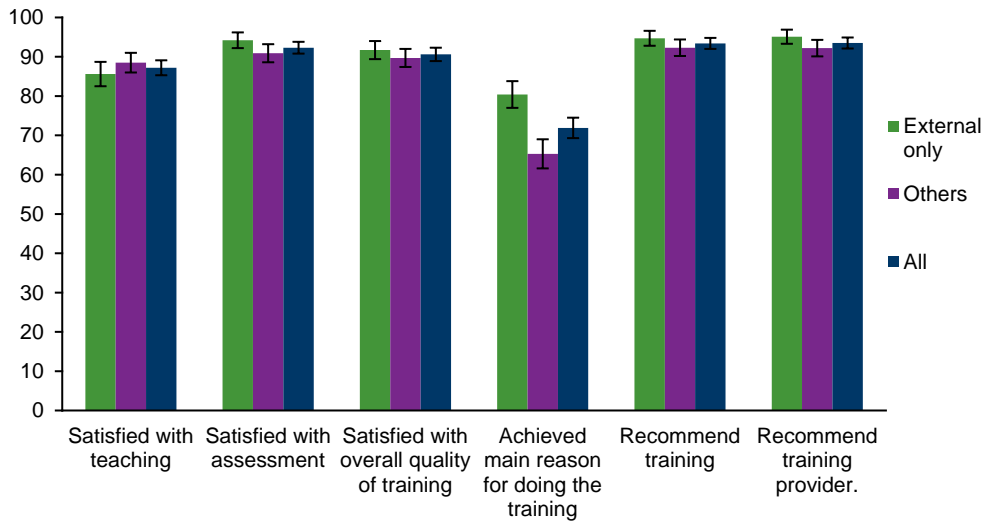
Source: National Student Outcomes Survey 2018.

Figure C7 Satisfaction outcomes by type of training delivery mode for graduates of Certificate IV in Property Services (Real Estate) (%), +/- 95% margin of error, 2018



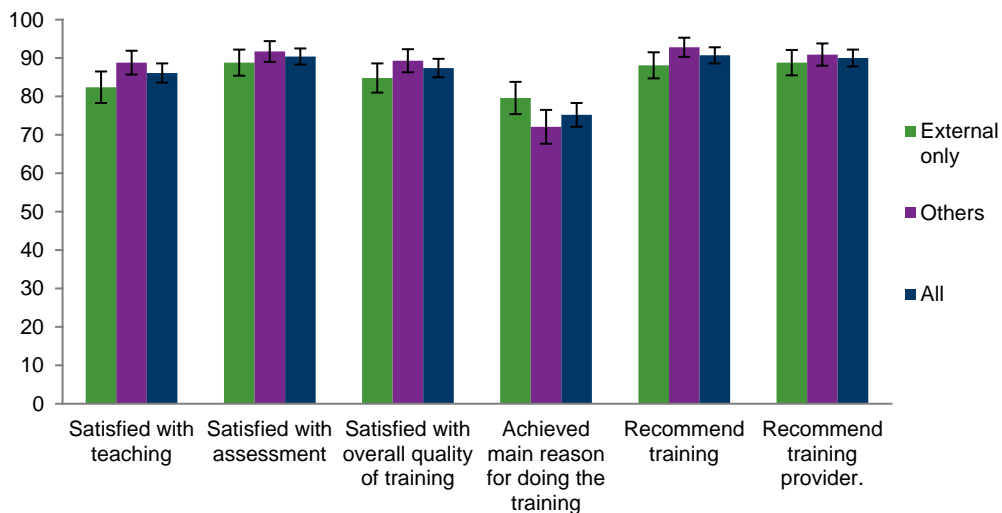
Source: National Student Outcomes Survey 2018.

Figure C8 Satisfaction outcomes by type of training delivery mode for graduates of Certificate IV in Accounting (%), +/- 95% margin of error, 2018



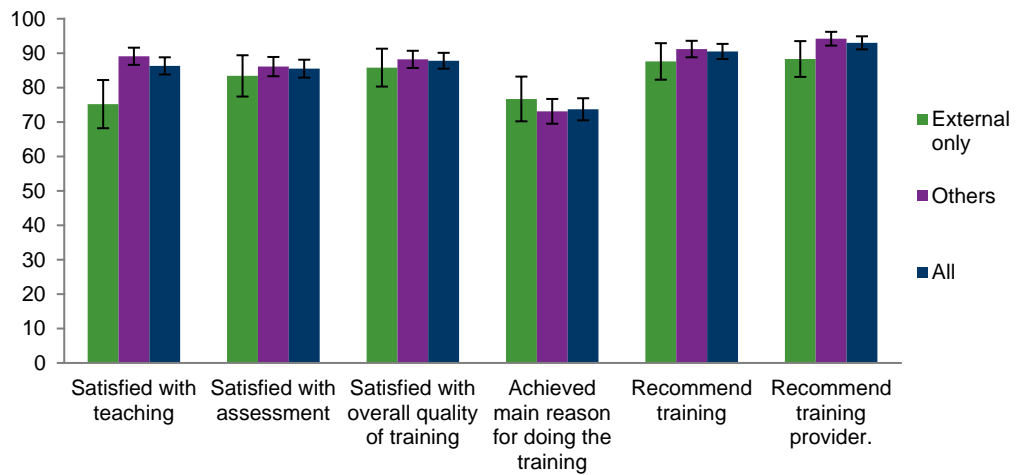
Source: National Student Outcomes Survey 2018.

Figure C9 Satisfaction outcomes by type of training delivery mode for graduates of Diploma of Accounting (%), +/- 95% margin of error, 2018



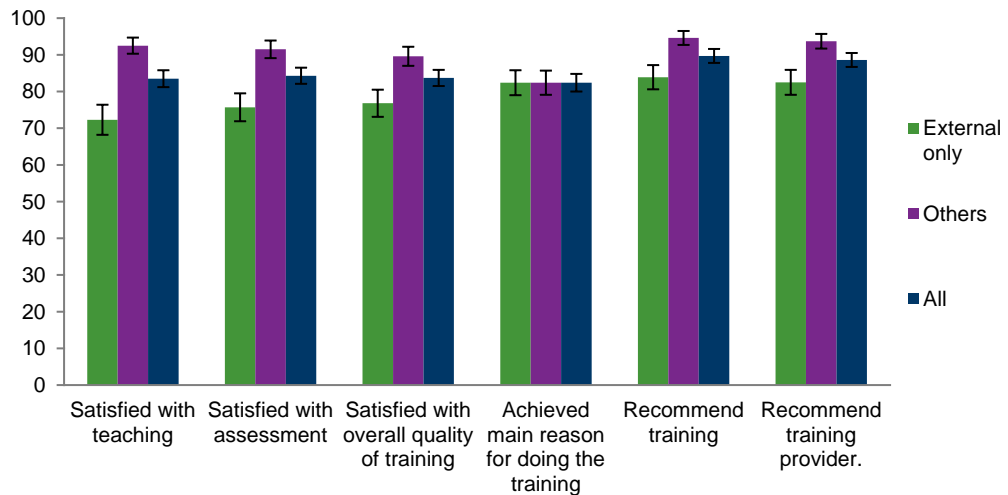
Source: National Student Outcomes Survey 2018.

Figure C10 Satisfaction outcomes by type of training delivery mode for graduates of Certificate III in Information, Digital Media and Technology (%), +/- 95% margin of error, 2018



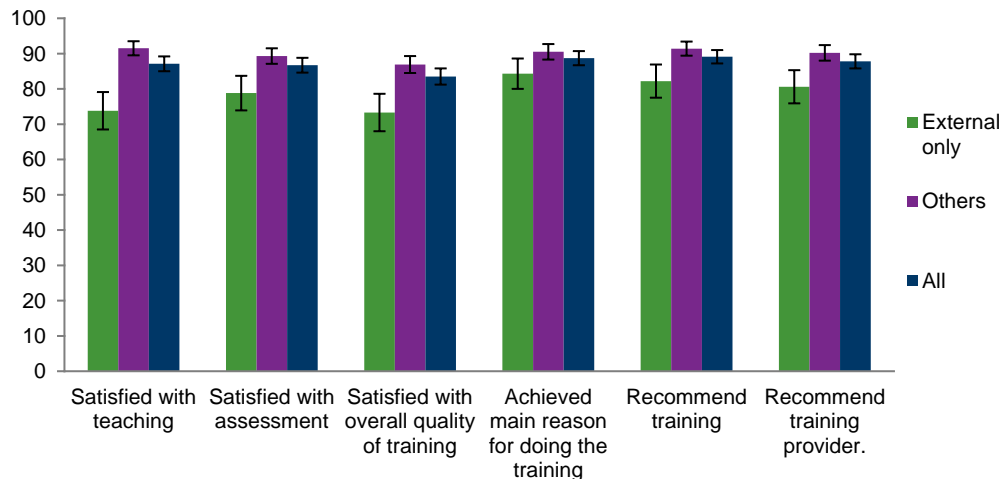
Source: National Student Outcomes Survey 2018.

Figure C11 Satisfaction outcomes by type of training delivery mode for graduates of Certificate III in Fitness (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Figure C12 Satisfaction outcomes by type of training delivery mode for graduates of Certificate IV in Fitness (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Appendix D

Table D1 Employment outcomes by type of training delivery mode for graduates in selected courses, 2018

Qualification	Mode of delivery				Estimated difference	Standard error	Test statistic
	External only		Others				
	%	95% margin of error	%	95% margin of error			
BSB30415 – Certificate III in Business Administration							
Improved employment status	55.4	3.7	47.3	2.2	8.1	2.196249	3.688106
Of those not employed before training, employed after training	39.8	6.2	34.8	2.9	5	3.492197	1.431763
Found the training relevant to their current job	72.9	4.0	72.6	2.6	0.3	2.434053	0.123251
BSB40515 – Certificate IV in Business Administration							
Improved employment status	47.9	5.4	51.6	4.6	3.7	3.619214	1.022321
Of those not employed before training, employed after training	29.2	12.1	42.4	7.1	13.2	7.157783	1.844146
Found the training relevant to their current job	83.6	4.5	75.7	4.7	7.9	3.319857	2.379621
BSB50415 – Diploma of Business Administration							
Improved employment status	53.8	4.7	44.4	6.7	9.4	4.175577	2.251186
Of those not employed before training, employed after training	49.4	8.9	28.1	9.9	21.3	6.792041	3.136024
Found the training relevant to their current job	78.2	4.3	78.0	7.0	0.2	4.191444	0.047716
CHC32015 – Certificate III in Community Services							
Improved employment status	54.6	7.7	32.6	3.5	22	4.315374	5.098052
Of those not employed before training, employed after training	47.6	10.2	27.1	4.1	20.5	5.608765	3.654993
Found the training relevant to their current job	79.7	8.3	61.9	5.5	17.8	5.080055	3.503899

Qualification	Mode of delivery				Estimated difference	Standard error	Test statistic
	External only		Others				
	%	95% margin of error	%	95% margin of error			
CHC42015 – Certificate IV in Community Services							
Improved employment status	61.2	8.2	44.0	2.9	17.2	4.437602	3.875967
Of those not employed before training, employed after training	57.3	16.9	32.5	3.7	24.8	8.826678	2.809664
Found the training relevant to their current job	81.5	7.3	74.9	3.5	6.6	4.130448	1.59789
CHC52015 – Diploma of Community Services							
Improved employment status	61.8	4.5	61.6	2.8	0.2	2.704082	0.073962
Of those not employed before training, employed after training	56.6	9.6	51.7	4.7	4.9	5.453459	0.898512
Found the training relevant to their current job	89.2	3.0	84.6	2.4	4.6	1.96014	2.346771
SIS30315 – Certificate III in Fitness							
Improved employment status	56.7	4.6	56.0	4.3	0.7	3.212666	0.217888
Of those not employed before training, employed after training	59.4	10.0	49.8	8.5	9.6	6.696125	1.433665
Found the training relevant to their current job	51.2	5.0	57.5	5.0	6.3	3.607688	1.746271
SIS40215 – Certificate IV in Fitness							
Improved employment status	58.4	6.1	69.9	3.4	11.5	3.563037	3.227584
Of those not employed before training, employed after training	59.1	11.9	59.6	7.8	0.5	7.259435	0.068876
Found the training relevant to their current job	62.1	6.6	65.6	3.9	3.5	3.911306	0.894842
FNS40615 – Certificate IV in Accounting¹							
Improved employment status	59.2	4.3	42.1	3.9	17.1	2.961821	5.773474
Of those not employed before training, employed after training	54.2	9.7	29.7	5.6	24.5	5.714513	4.287329
Found the training relevant to their current job	82.1	3.8	69.0	4.8	13.1	3.123516	4.193992

Qualification	Mode of delivery				Estimated difference	Standard error	Test statistic
	External only		Others				
	%	95% margin of error	%	95% margin of error			
FNS50215 – Diploma of Accounting¹							
Improved employment status	61.0	5.3	41.9	5.0	19.1	3.717494	5.13787
Of those not employed before training, employed after training	46.6	11.2	30.0	6.7	16.6	6.658701	2.492979
Found the training relevant to their current job	82.9	4.7	67.1	6.5	15.8	4.09246	3.860758
ICT30115 – Certificate III in Information, Digital Media and Technology							
Improved employment status	35.0	7.7	33.4	4.0	1.6	4.427031	0.361416
Of those not employed before training, employed after training	25.5	11.7	30.7	5.2	5.2	6.532406	0.796031
Found the training relevant to their current job	62.1	10.3	45.9	6.0	16.2	6.08171	2.663725
CPP40307 – Certificate IV in Property Services (Real Estate)							
Improved employment status	69.2	4.4	69.0	2.9	0.2	2.688635	0.074387
Of those not employed before training, employed after training	49.0	12.4	52.3	6.6	3.3	7.166869	0.460452
Found the training relevant to their current job	85.2	3.7	83.3	2.6	1.9	2.307228	0.823499
All courses							
Improved employment status	59.8	0.5	58.9	0.2	0.9	0.274753	3.275666
Of those not employed before training, employed after training	50.0	1.1	48.2	0.4	1.8	0.597179	3.014174
Found the training relevant to their current job	79.7	0.5	78.8	0.2	0.9	0.274753	3.275666

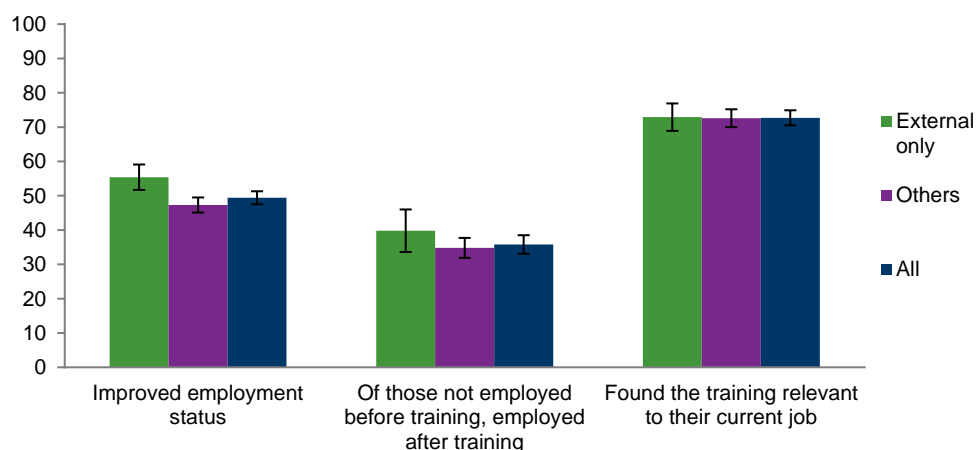
Notes: 1 Superseded accounting qualifications were used for analysis of the Student Outcomes Survey data to ensure the sample was large enough (updated qualifications came into use in 2018).

FNS60215 – Advanced Diploma of Accounting, ICT40115 – Certificate IV in Information Technology, ICT50115 – Diploma of Information Technology, CPP30211 – Certificate III in Property Services (Agency) and CPP50307 – Diploma of Property Services (Agency Management) have been omitted from the table due to small sample sizes.

Significance was determined at the .05 level. Where the test statistic is greater than 1.96, the difference is statistically significant.

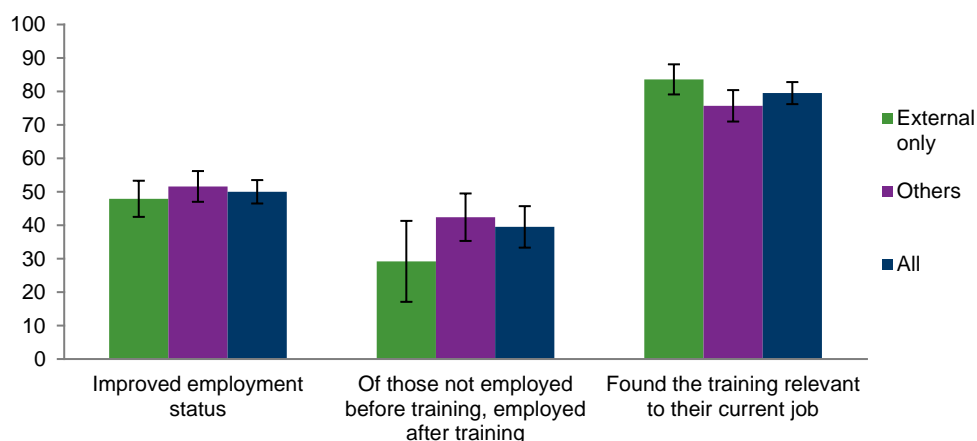
Source: National VET Student Outcomes Survey 2018.

Figure D1 Employment outcomes by type of training delivery mode for graduates of Certificate III in Business Administration (%), +/- 95% margin of error, 2018



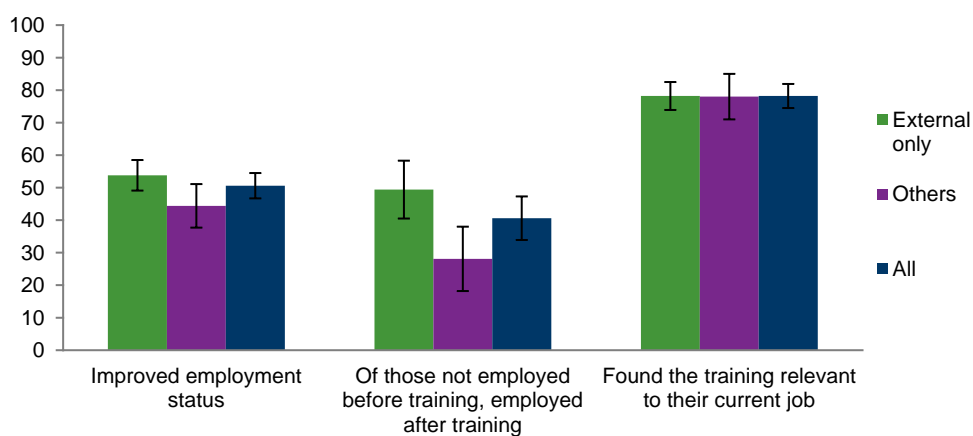
Source: National Student Outcomes Survey 2018.

Figure D2 Employment outcomes by type of training delivery mode for graduates of Certificate IV in Business Administration (%), +/- 95% margin of error, 2018



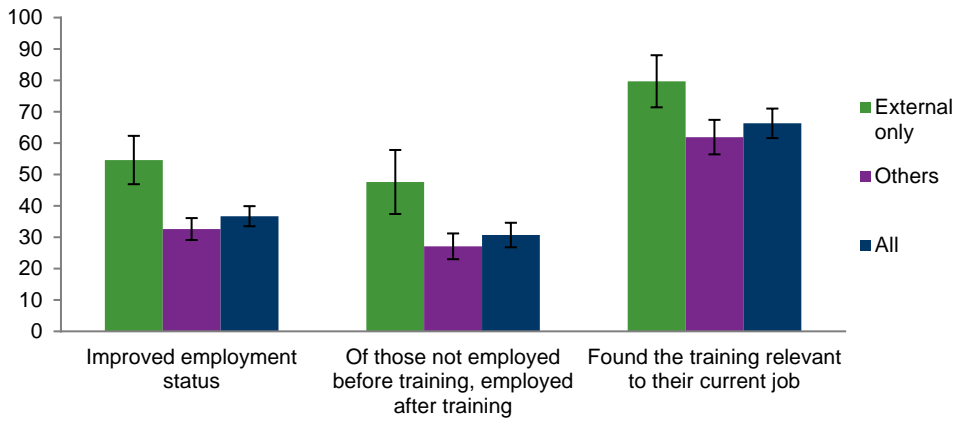
Source: National Student Outcomes Survey 2018.

Figure D3 Employment outcomes by type of training delivery mode for graduates of Diploma of Business Administration (%), +/- 95% margin of error, 2018



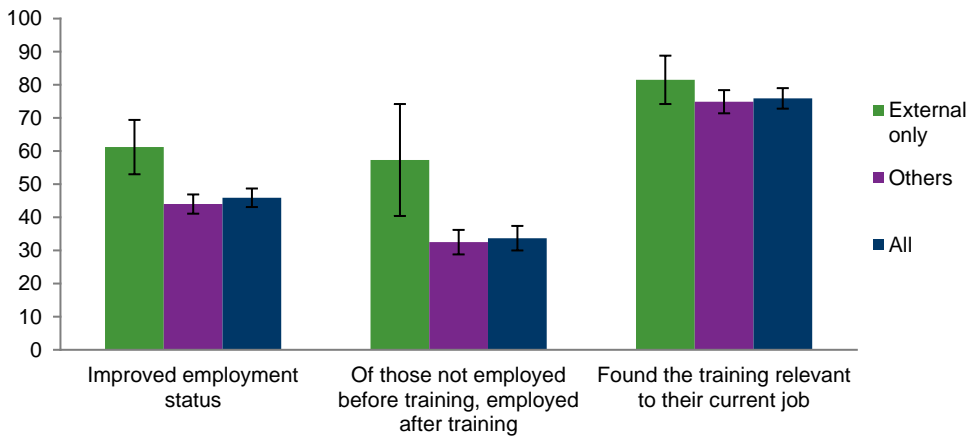
Source: National Student Outcomes Survey 2018.

Figure D4 Employment outcomes by type of training delivery mode for graduates of Certificate III in Community Services (%), +/- 95% margin of error, 2018



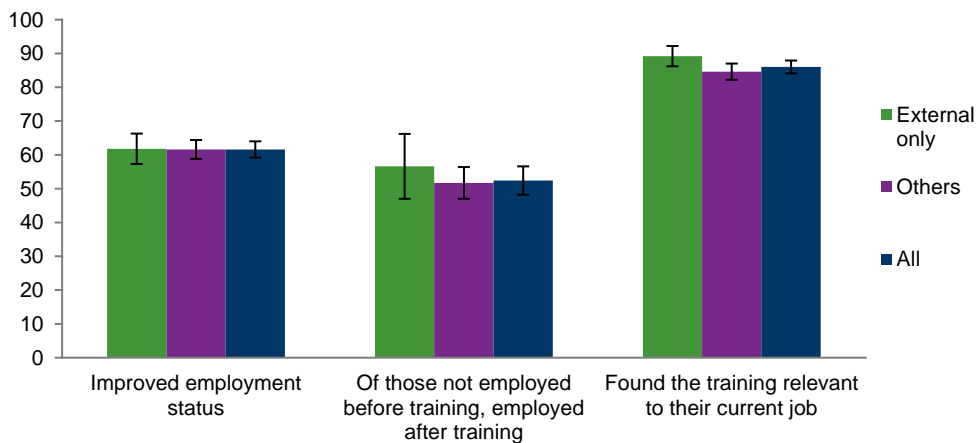
Source: National Student Outcomes Survey 2018.

Figure D5 Employment outcomes by type of training delivery mode for graduates of Certificate IV in Community Services (%), +/- 95% margin of error, 2018



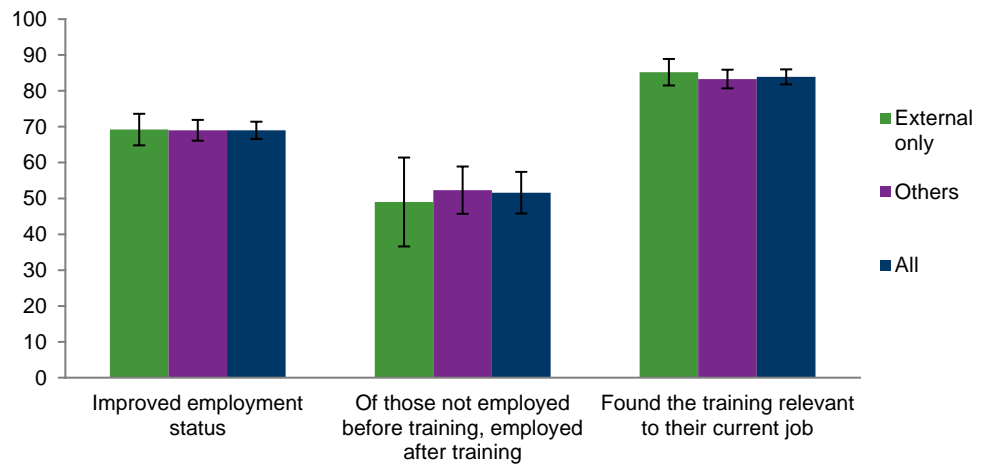
Source: National Student Outcomes Survey 2018.

Figure D6 Employment outcomes by type of training delivery mode for graduates of Diploma of Community Services (%), +/- 95% margin of error, 2018



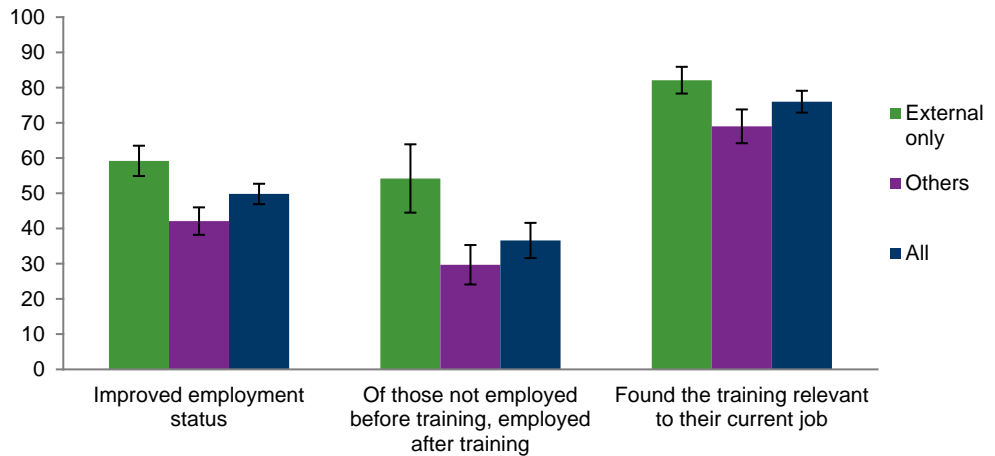
Source: National Student Outcomes Survey 2018.

Figure D7 Employment outcomes by type of training delivery mode for graduates of Certificate IV in Property Services (Real Estate) (%), +/- 95% margin of error, 2018



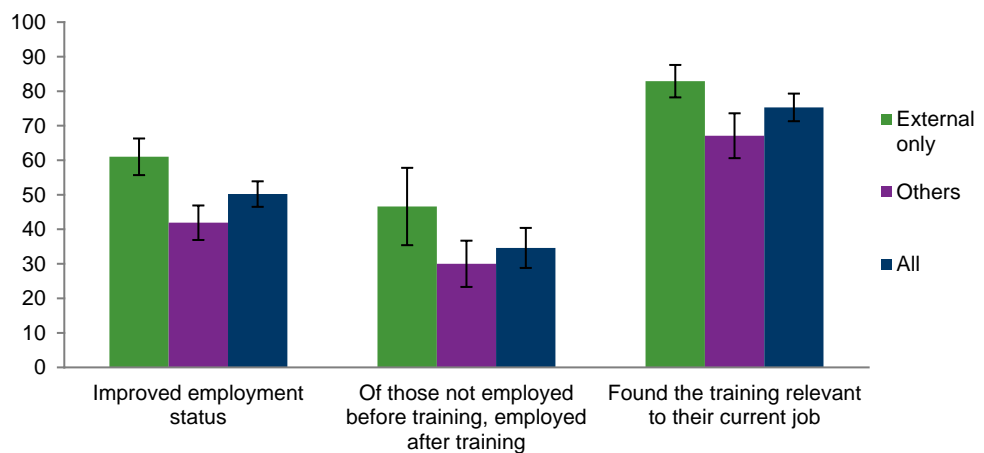
Source: National Student Outcomes Survey 2018.

Figure D8 Employment outcomes by type of training delivery mode for graduates of Certificate IV in Accounting (%), +/- 95% margin of error, 2018



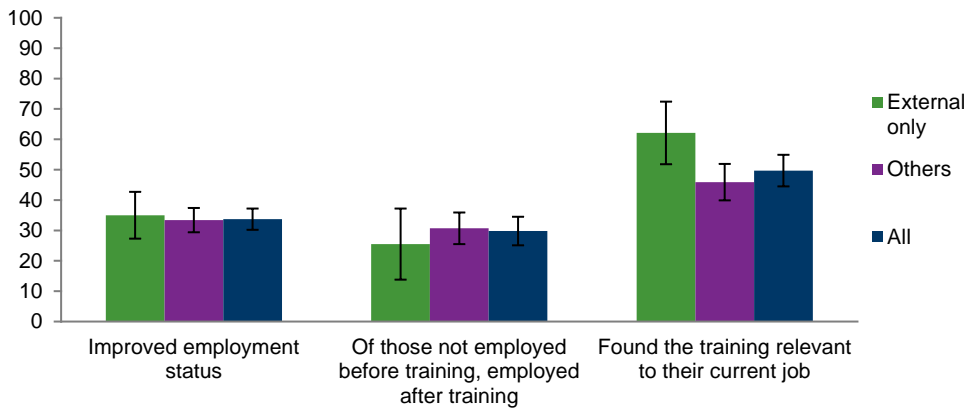
Source: National Student Outcomes Survey 2018.

Figure D9 Employment outcomes by type of training delivery mode for graduates of Diploma of Accounting (%), +/- 95% margin of error, 2018



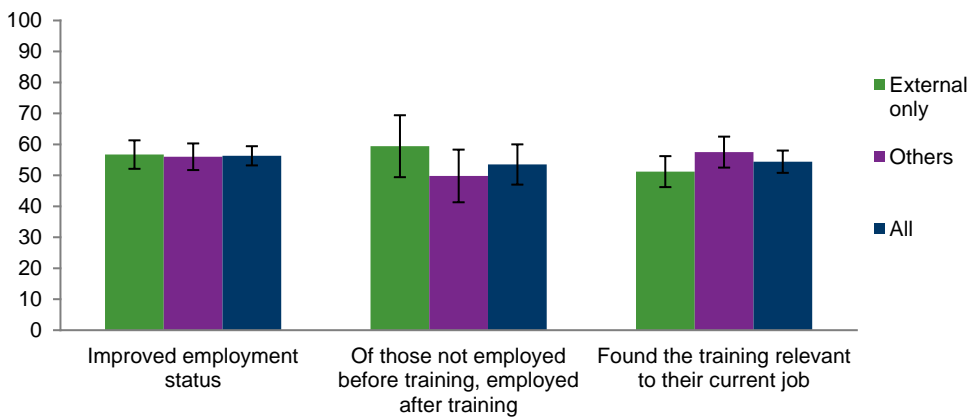
Source: National Student Outcomes Survey 2018.

Figure D10 Employment outcomes by type of training delivery mode for graduates of Certificate III in Information, Digital Media and Technology (%), +/- 95% margin of error, 2018



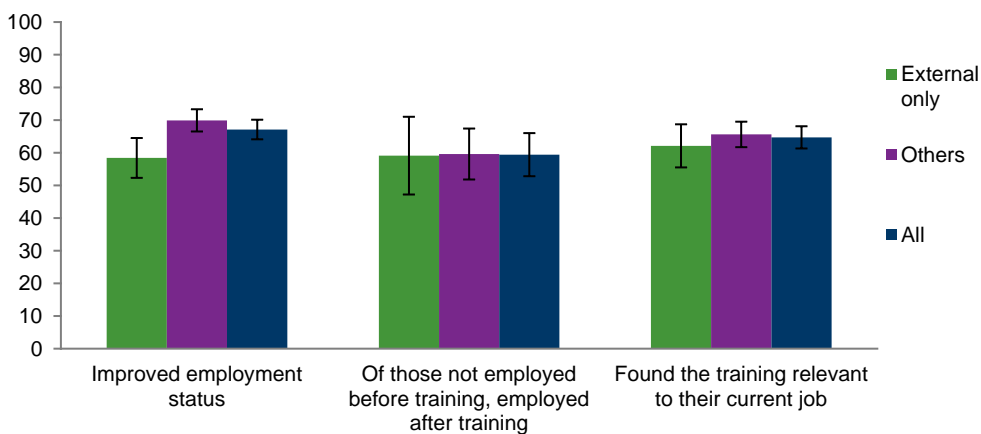
Source: National Student Outcomes Survey 2018.

Figure D11 Employment outcomes by type of training delivery mode for graduates of Certificate III in Fitness (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.

Figure D12 Employment outcomes by type of training delivery mode for graduates of Certificate IV in Fitness (%), +/- 95% margin of error, 2018



Source: National Student Outcomes Survey 2018.



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