



National Student Outcomes Survey 2021 (apprentice and trainee component): technical notes

National Centre for Vocational
Education Research

This document was produced as an added resource for further information on *Apprentice and trainee outcomes 2021*. The publication is available on the NCVER Portal:
<<http://www.ncver.edu.au>>.

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Introduction

Apprentice and trainee outcomes 2021 provides a summary of the outcomes of apprentices and trainees who completed an apprenticeship or traineeship during 2020, with the data collected in mid-2021. The figures are derived from apprentices' and trainees' responses to the National Student Outcomes Survey (SOS), which is an annual survey of VET students. In 2021, the survey collected information on apprentices' and trainees' reasons for training, their employment outcomes, further study outcomes and satisfaction with the apprenticeship or traineeship.

This document describes the survey data used to derive the *Apprentice and trainee outcomes 2021* publication and related products.

Background

In 2019, NCVET conducted a national Apprentice and Trainee Experience and Destination (ATED) survey that was integrated with the 2019 SOS. The surveys ran concurrently and key¹ SOS questions were included in the ATED questionnaire alongside other questions specific to apprentices and trainees. The scope of the 2019 ATED survey was apprentices and trainees aged 18 years and over, who undertook a contract of training with an employer and a training provider and who:

- completed all the requirements of a contract of training in 2018; or
- cancelled or withdrew from a contract of training in 2018 prior to completing all prescribed requirements of their apprenticeship or traineeship.

In 2021, students sampled for the SOS who were flagged as undertaking their training as part of an apprenticeship or traineeship in the National VET Provider and National VET in Schools collections were asked additional questions about their apprenticeship/traineeship. These additional questions were sourced from the 2019 ATED survey. Further information on the 2019 ATED is available in the *Apprentice and trainee experience and destinations survey 2019: technical notes* at <https://www.ncver.edu.au/research-and-statistics/publications/all-publications/apprentice-and-trainee-experience-and-destinations-2019>.

Survey scope

This section firstly outlines the criteria used to select in-scope individuals for the wider 2021 SOS and describes the subset of students who received the additional apprentice and trainee questions.

The SOS is an annual survey of students who completed nationally recognised vocational education and training (VET) delivered by registered training organisations (RTOs) in Australia. The population is derived from the National VET Provider and National VET in Schools collections, which are managed in accordance with the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS).

¹ The SOS questions included in the ATED questionnaire were those of most relevance to national policy work.

Students were considered in scope of the 2021 survey if they:

- were enrolled and had some contact hours in 2020, and
- completed at least one subject during 2020, and
- were 15 years of age or older at 28 May 2021.

Out of scope of the survey were students:

- who undertook recreational, leisure or personal enrichment courses, or
- were under 15 years of age, or
- were from correctional facilities.

International onshore VET qualification completers were included as an additional component of the 2021 National Student Outcomes Survey and are reported separately in *International onshore VET qualification completer outcomes*.

The SOS is designed to provide information on the following student groups.

- Qualification completers: students who completed a training package qualification or an accredited qualification.
- Qualification part-completers: students who enrolled in but only completed part of a training package qualification or an accredited qualification (and are no longer undertaking that training²).
- Short course completers: students who completed a training package skill set or an accredited course.
- Short course part-completers: students who enrolled in but only completed part of a training package skill set or accredited course (and are no longer undertaking that training²).
- Subject(s) only completers: students who completed one or more subjects not delivered as part of a nationally recognised program and who are no longer undertaking training in the VET sector².

Respondents were considered in-scope for the additional apprentice and trainee questions if they were:

- qualification completers or qualification part-completers; and
- aged 15 years and over; and
- reported as apprentices and trainees in the National VET Provider or National VET in Schools collections.

² At the time of sample selection, insufficient information is available from the collections to identify 'actual' qualification part-completers, short course part-completers and subject(s) only completers. Instead, a sample of 'potential' qualification part-completers, short course part-completers and subject(s) only completers is chosen, which includes continuing students. The final status of respondents is determined through survey responses.

Questionnaire design

The SOS questionnaire suite is designed to ensure students received only questions relevant to them. The questionnaires include:

- pulse questionnaire for continuing students (approximately 2 minutes)
- short questionnaire, referred to as the ‘lite’ questionnaire (approximately 5 minutes)
- full questionnaire (approximately 10 minutes).

In 2021, the questionnaire apprentices and trainees received was dependant on the off-the-job training they undertook. Those who completed a certificate II or above received the full questionnaire. Those initially identified as potential qualification part-completers who indicated through the survey they were continuing in that training received the pulse questionnaire. All other apprentices and trainees received the lite questionnaire. Only the questions in both the full and lite questionnaires are included in the *Apprentice and trainee outcomes 2021* publication suite.

The 2021 SOS collected data on apprentices’ and trainees’:

- main reason for undertaking the apprenticeship or traineeship
- employment characteristics before, during and after training
- further study activity
- opinions of, and satisfaction with, the off-the-job training and the training provider
- satisfaction with the skills learnt on-the-job
- impact of the COVID-19 pandemic on training.

The 2021 SOS questionnaires can be viewed from the publication page at <https://www.ncver.edu.au/research-and-statistics/publications/all-publications/apprentice-and-trainee-outcomes-2021>.

Information on apprentices’ and trainees’ personal characteristics and their off-the-job training was obtained from the 2020 National VET Provider and 2020 National VET in Schools collections, from which the survey sample was selected. Information on their apprenticeship or traineeship was also obtained, post-fieldwork, from the National Apprentice and Trainee Collection, (collection number 108, June 2021 estimates).³

Reference period

Apprentices and trainees were asked to provide employment information with respect to two reference periods:

- 28 May 2021 (proxy for after training) and
- Six months before starting training.

They were asked if they had a job at each reference period followed by relevant employment questions.

³ This collection holds details of each commencement, cancellation, withdrawal, completion, or expiration associated with the life of an Apprenticeship/Traineeship Training Contract. The information is sourced from contracts of training that are submitted to NCVER via state training authorities (STAs).

Survey methodology

The apprentice and trainee component of the SOS was not designed as a separate survey. For this reason, the survey methodology explained in this section is that of the overall SOS. Further details are provided in the *Estimation* section of this document regarding how the apprentice and trainee responses were weighted to represent the apprentice and trainee population.

Sampling population

The SOS population includes all students in scope of the survey and is derived from the National VET Provider and National VET in Schools collections.⁴ The collections hold details on students, the training undertaken, and their achievement. The information is sourced from student enrolment records that are submitted to NCVET either directly from training providers or via state training authorities (STAs) or Boards of Studies. The survey population was extracted for the data submitted for the 2020 calendar year as at 13 April 2021.

A de-duplication process was applied to the population to identify and remove duplicate training activity reported for the same training provider in the same year via different data submitters.⁵ Where a student undertook more than one program or subject at an RTO, a further de-duplication process was applied to the population selection to ensure one record for each student was selected at each RTO.

Sampling frame

The sampling frame refers to the de-duplicated records from the population available for surveying and for which contact details could be obtained in order to send survey invitations. This section describes the methodology used to create the sampling frame for the SOS.

Some students completed training across multiple RTOs. In such cases, a hierarchy was applied to retain only one record for surveying in the sampling frame in order of reducing respondent burden. The sampling frame was then restricted to those students who were not deceased, and who were available for surveying as reported in the 'survey contact status' field in the 2020 National VET Provider Collection and 2020 National VET in Schools Collection.⁶

The sampling frame was also restricted to records for which student contact details could be obtained in order of sending survey invitations. This includes students with a unique student identifier (USI) or whose contact details could be sourced from state training authorities (STAs) or from the contact details reported to NCVET. The sample was drawn after these exclusions were made to the frame.

4 For more information regarding the national VET data collections, please refer to Australian vocational education and training statistics explained at <<https://www.ncver.edu.au/research-and-statistics/vet-statistics-explained>>.

5 It is possible for a training provider to submit their data on training activity either directly to NCVET for reporting in the National VET Provider Collection and/or National VET in Schools Collection or via their STA or Board of Studies.

6 For further information on the Survey contact status field, refer to <<https://www.ncver.edu.au/rto-hub/statistical-standard-software/avetmiss-data-element-definitions-edition-2.3>>.

Sampling design

The SOS sample was selected in five parts, with independent samples drawn for each student type. The qualification completers and qualification part-completer student types are relevant to apprentices and trainees. The majority of apprentice and trainee completers come from the SOS qualification completer group, however, it is possible for apprentice and trainee completers to be found in the SOS qualification part-completer group due to lags in the reporting of qualification completers in the national VET data collections. For further information on how apprentice and trainee completers were derived, refer to the *Classification by group* section of this document.

All records in the sampling frame were selected for the sample for qualification completers. For potential qualification part-completers, a stratified random sampling design was used with strata defined by cross-classifying state/territory (eight levels), provider type (five levels at a national level: TAFE institutes, universities, schools, community education providers, or private training providers and two levels by state and territory: TAFE institutes and private providers) and funding source (two levels: government-funded or fee-for-service).

In addition, all potential qualification part-completers from an RTO with 550 or more students on the frame were included in a certainty stratum⁷. Within the non-certainty strata, units were selected using systematic probability proportional to size sampling. The size measure was used to increase the chance that units from targeted RTOs were sampled. Before sampling, units were sorted by provider type, funding source, age, gender, broad field of education, and Indigenous status to ensure the sample was representative with respect to these variables.

The census design of the qualification completer group meant that all apprentices and trainees who had completed a qualification in 2020, and whose contact details were available for surveying, were selected. Due to the sample design of the qualification part-completer student group, apprentices and trainees with available contact details in this student type were selected by chance.

Source of contact details

Students' contact details (i.e. name, address, telephone/mobile numbers and email address) for the selected sample were sourced from STAs, the Office of the Student Identifiers Registrar (OSIR) or NCVET (from the *Client Postal Details* file submitted to the National VET data collections).

STAs provided the contact details for the students whose information in the National VET data collections originated from STAs, with the exception of four STAs who requested NCVET provide the contact details. The OSIR and NCVET provided the contact details for all remaining students, with the OSIR only able to provide the contact details for students that had a USI.

Following the provision and cleaning of contact details, survey invitations were sent to 867 562 students, of which 79 353 were apprentices and trainees (table 1).

⁷ All records in the certainty stratum are surveyed.

Table 1 The number of apprentices and trainees in the 2021 survey population, sampling frame and who were sent a survey invitation by student type at sampling

Student type at sampling	Population	Sampling frame ¹	Survey invitations sent
Qualification completers	66 896	61 989	61 398
Potential qualification part-completers	77 424	67 914	17 955
Total	144 320	129 903	79 353

Note: 1. The sampling frame refers to the de-duplicated records from the population available for surveying and for which contact details could be obtained in order to send survey invitations.

Further information on the SOS methodology is available in *VET student outcomes 2021: technical notes*, available at <<https://www.ncver.edu.au/research-and-statistics/collection/student-outcomes/vet-student-outcomes>>.

Fieldwork

Fieldwork commenced on 4 June 2021 and concluded on 15 August 2021. The 2021 survey data were collected by way of a self-enumeration online questionnaire or telephone interview. The details of the fieldwork methodology are provided below.

Financial incentive

A financial incentive, managed by the fieldwork contractor, was offered as a means of increasing the response rate. A rolling prize draw structure was used to maximise early response rates by offering more chances to win the earlier the survey is completed. Ten prize draws were conducted, timed to coincide with reminder activity, with winners selected at random (table 2).

Table 2 Prize draw details, 2021

Prize draw	Close date	Prize draw details	Total prize value
1	16/6/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
2	23/6/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
3	30/6/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
4	7/7/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
5	14/7/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
6	21/7/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
7	28/7/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
8	4/8/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
9	11/8/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000
10	15/8/21	1 x \$1 000, 2 x \$500 and 8 x \$250 EFTPOS gift-cards	\$4 000

Personalised letter

The personalised letters contained a unique login code and a QR code enabling direct access to the online survey. Students with a 'mailing address only' or 'a mailing address and a mobile' were sent a hard-copy letter inviting them to complete the survey. The invitation letters were lodged with Australia Post on 4 June 2021. A second batch of letter invitations were lodged with Australia Post on 16 June for students with a 'mailing address and an email address' where the email invitation had bounced.

A letter, timed to arrive the same time or just after the email invitation to students, was sent to the parents/guardians of all students aged 15 to 17 years who had a mailing address. The letter informed parents about the survey, including how students' personal information is managed and protected, and asked them to encourage their child to participate.

All students with a 'mailing address only' or 'a mailing address and an email address' who had not responded to the survey were sent a hard-copy reminder letter approximately three to four weeks after the initial contact inviting them to complete the survey. The reminder letters were lodged with Australia Post on 12 July 2021.

Students with a 'mailing address only' who had not responded to the survey approximately six weeks after the initial contact were sent a third hard-copy letter, lodged with Australia Post on 4 August 2021.

For further information on the content of the letters, refer to the invitation and parent letter supporting documents at <<https://www.ncver.edu.au/research-and-statistics/publications/all-publications/vet-student-outcomes-2021>>.

Email communications

This email invitation contained a unique login code and an embedded link with direct access to the online survey. An invitation to complete the survey online was sent to all students with a valid email address on 7 June 2021, excluding 15 to 17 years olds with address contact details, whose email invitation was delayed to coincide with the arrival of a letter to their parents/guardians.

Ten reminder emails with the embedded link to the online survey were sent to students who had not completed the survey. These emails were timed to coincide with a weekly prize draw.

The content of invitation and reminder emails varied slightly, with different themes used to encourage survey participation, ranging from the importance of the survey to the chance to win a prize.

SMS communications

Students who had a valid mobile number but no email were sent an SMS invitation to complete the survey from 7 June 2021. This SMS invitation was delayed by one week for some students to ensure its arrival coincided with letter communications.

Following these initial SMS communications, up to six SMS reminders were sent to students with a valid mobile number who had not completed the survey. Some of the SMS reminders were targeted to specific students.

Telephone follow-up

Telephone interviewing commenced approximately five weeks after the initial survey invitations was sent. The aim of the telephone interviewing is to boost responses in low responding groups (for example young males), selected RTOs and in other key reporting groups where more responses were required to meet the precision requirements of the survey design. Approximately 11 000⁸ students overall completed the survey over the telephone. Of these, 1 870 interviews were completed with apprentices and trainees.

8 Includes approximately 1 700 telephone interviews funded by an STA.

Privacy

All students were sent a link to the privacy collection notice. The privacy notice complied with the Australian Privacy Principles and provided further information on how personal information would be managed and protected. The privacy collection notice can be viewed from <<https://www.ncver.edu.au/research-and-statistics/publications/all-publications/vet-student-outcomes-2021>>.

Students' names, addresses, telephone numbers and email addresses were used by the fieldwork contractor during the fieldwork stage. The fieldwork contractor worked with external service providers for printing and collation services and email distribution services. The fieldwork contractor provided the students' contact details to the external providers for the purposes of administering the survey. Contact details of students held by the fieldwork contractor or the external providers for the purpose of this survey are destroyed upon conclusion of the project.

Survey response

22 000 apprentices and trainees responded to the survey, including those who were later identified as not meeting the definition of an apprentice and trainee completer. National response rates for apprentices and trainees were 27.6% for qualification completers and 28.0% for potential qualification part-completers (table 3).

Table 3 Survey response summary for apprentices and trainees by student type at sampling, 2021

	Qualification completers		Potential qualification part-completers ²		Total	
	No.	%	No.	%	No.	%
Survey invitations	61 398	100.0	17 955	100.0	79 353	100.0
Completed	16 975	27.6	5 025	28.0	22 000	27.7
Sample loss ¹	7 394	12.0	2 282	12.7	9 676	12.2
Refused	8 080	13.2	1 836	10.2	9 916	12.5
No response	28 949	47.1	8 812	49.1	37 761	47.6

Note

1. Sample loss includes students whose hardcopy mail was returned to sender and/or whose electronic communication bounced.
2. At the time of sample selection, insufficient information is available from the collections to identify 'actual' qualification part-completers. Instead, a sample of 'potential' qualification part-completers is chosen, which includes continuing students.

Estimation

Classification of apprentice and trainee completers

Of the 22 000 apprentices and trainees who responded to the SOS, 3 202 reported in the survey that they were still continuing in their off-the-job training. These apprentices and trainees did not receive the additional apprentice and trainee questions and were considered out of scope of reporting. All others were asked the apprentice and trainee questions (table 4).

Table 4 Number of respondents by whether they received the apprentice and trainee questions, by SOS student type at sampling, 2021

	SOS student type at sampling		Total
	Qualification completer	Potential qualification part-completer	
Received the apprentice and trainee questions	16 975	1 823	18 798
Did not receive the apprentice and trainee questions (as were continuing in off-the job training)	na	3 202	3 202
Total	16 975	5 025	22 000

The 18 798 respondents who received the apprentice and trainee questions were then matched to the National Apprentice and Trainee Collection (collection number 108, June 2021 estimates) where possible, to obtain additional information on their contract status and year of transaction to enable classification of the ‘completer’ group for reporting.

There were two possible ways to be defined as a ‘completer’. Firstly, apprentices and trainees were defined as a ‘completer’ if they were reported as completing their apprenticeship or traineeship during the 2020 calendar year in the National Apprentice and Trainee Collection. For other respondents, if they stated they had completed all the requirements of their apprenticeship or traineeship in the survey they were considered a ‘completer’, regardless of their contract status in the National Apprentice and Trainee Collection. This methodology is consistent with how completers were defined in the 2019 ATED survey and resulted in 15 769 apprentice and trainee respondents being classified as a ‘completer’ in the 2021 SOS (table 5).

Table 5 Reporting status for respondents who received the apprentice and trainee questions, 2021

Reporting status	No.
Completer	15 769
Defined as ‘completer in Apprentice and trainee collection	14 637
Not defined as a ‘completer’ in Apprentice and trainee collection but self-reported as a completer in the survey	1 132
Other apprentice and trainee - out of reporting scope	3 029
Total	18 798

To align with the scope of the 2019 ATED survey, 973 respondents aged 15-17 years were removed from the publication. The total number of 2021 survey respondents included in the publication is 14 796. The responses of all apprentices and trainees to the 2021 survey, including those aged 15-17 years, are available in the DataBuilder.

Weighting

The sample of respondents may not accurately represent the population of apprentices and trainees due to known sources of bias such as unequal probability of selection, as well as other sources of bias such as non-response. The weighting procedure attempts to minimise bias so that the weighted sample represents the population and can be used to produce accurate estimates.

Using the SOS to gather information from apprentices and trainees means that the survey responses exclude apprentices and trainees who did not undertake off-the-job training in 2020. To reduce this bias, the apprentice and trainee respondents in the SOS were weighted to population benchmarks of completions and cancellations and withdrawals in the 2020 calendar year in the National Apprentice and Trainee Collection (collection number 108, June 2021 estimates).

The weighting procedure consisted of three main steps:

- 1 A base weight was calculated for each sampled unit as the inverse of the probability that unit was selected in the sample.
- 2 In the second step, the weights were adjusted for non-response. Variables chosen for adjustment were those that were important predictors of non-response and key reporting variables for SOS:
 - provider type (4 categories: TAFE, university, community education provider and private training provider)
 - state/territory of residence (8 categories: New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, Northern Territory and the Australian Capital Territory)
 - Gender (3 categories: male, female, other or not stated)
 - Age group (4 ranges: 18 to 24 years, 25 to 34 years, 35 to 49 years and 50 years and over).
- 3 The responses were then further adjusted to represent the population of apprentices and trainees and to ensure weighted marginal distributions matched the apprentice and trainee's population marginal distributions as provided in the National Apprentice and Trainee Collection. While the survey was undertaken as a sample of apprentices and trainees who undertook off-the-job training in 2020, responses have been weighted to population benchmarks of apprentices and trainees who left their training between January and December 2020, the target population for the apprentice and trainee survey component.

There are lags in reporting contract information to the National Apprentice and Trainee Collection. Therefore, numbers for the same period (in this case January to December 2020) change between collection quarters. The sample was drawn from the 2020 National VET Provider Collection and 2020 National VET in Schools Collection and population counts weighted back to this same time period through the 2020 calendar year in the National Apprentice and Trainee Collection (collection number 108, June estimates).

Variables chosen for raking the weights at this stage were:

- Contract (2 categories: Completion, Cancellation/withdrawal)
- Provider type (2 categories: TAFE, private training provider)
- State/territory of residence (8 categories: New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, Northern Territory and the Australian Capital Territory)
- Employer size (9 categories: 1-4, 5-9, 10-19, 20-49, 50-99, 100-199, 200-499, 500-999, >=1000)

- Gender (3 categories: male, female, other or not stated)
- Age group (4 ranges: 18 to 24 years, 25 to 34 years, 35 to 49 years and 50 years and over)
- Indigenous status (2 categories: Indigenous, non-Indigenous).

4 Large weights were trimmed to reduce variance.

All published percentages were derived based on stated responses.

Reliability of estimates

Two types of error are possible in an estimate based on a survey: sampling error and non-sampling error. *Non-sampling error* may occur for reasons such as non-response bias, incorrect responses, interviewer errors, attrition and processing errors. *Sampling error* occurs because estimates are calculated from a random sample of the population. The estimates may differ from the true population value (that is, the value if the whole population had been sampled and responded to the survey) as well from estimates that would be produced if a different sample had by chance been selected.

By convention, a 95% confidence level is used to judge the amount of sampling error in an estimate. The confidence interval for an estimate is calculated using the formula:

$$\text{estimate} \pm 1.96 \times \text{SE}$$

where SE is the standard error of the estimate returned by SAS software (the standard error is an estimate of how much variation there is expected to be in a published estimate from one sample to another, based on the randomness of sample selection), taking into account the sampling design and population size. The chance that a 95% confidence interval contains the true population value is 19 in 20.

The half-width of the confidence interval, $1.96 \times \text{SE}$, is often referred to as the *margin of error*.

The margin of error is provided for key estimates in the DataBuilder <<https://www.ncver.edu.au/research-and-statistics/publications/all-publications/apprentice-and-trainee-outcomes-2021>> and can be used to calculate the 95% confidence interval.