

Australian vocational education and training statistics

The likelihood of completing a government-funded VET program

2009–13

National Centre for Vocational Education Research



Highlights

This publication uses statistical techniques to estimate completion rates for government-funded vocational education and training (VET) programs (broadly defined as all programs delivered by government providers and government-funded programs delivered by community and other registered providers).

For government-funded programs commencing in 2013:

- The national estimated completion rate for government-funded VET programs at certificate I and above was 34.0%, down from 36.0% for programs commenced in 2012.
- By level, government-funded VET programs at diploma and above (42.2%), certificate IV (40.9%), and certificate III (38.0%) had the highest national estimated completion rates.
- By field of education, government-funded VET programs in education (57.5%), natural and physical sciences (47.5%), and management and commerce (44.1%) had the highest national estimated completion rates.
- For students in full-time study aged 25 years and under with no prior post-school program completion, the national estimated completion rate for government-funded VET programs at certificate I and above was 40.9%, down from 46.8% for programs commenced in 2012.

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Introduction

The Australian vocational education and training (VET) system provides training across a wide range of subject areas and is delivered through a variety of training institutions and enterprises (including to apprentices and trainees). The system provides training for students of all ages and backgrounds. Students may study individual subjects or full programs that lead to formal program completions.

This publication estimates the completion rates of government-funded VET programs in Australia (broadly defined as all programs delivered by government providers and government-funded programs delivered by community and other registered providers), in order to fill a gap in performance measures for the VET sector. Program completion rates are contrasted with subject load pass rates, which express the weighted percentage of successfully completed subjects, in each table of this publication.

Completion rates in this publication are derived using the most recent National VET Provider Collection data available and are an update on the previous release, *Australian vocational education and training statistics: the likelihood of completing a VET qualification 2009–12*.¹ Additional program completions reported to the National Centre for Vocational Education Research (NCVER) since the previous release mean that figures for 2009–12 may vary slightly from those previously published.

More information

For more information on the methodology used to derive completion rates for government-funded VET programs, please see explanatory notes on page 9. For the underlying sample sizes of estimated completion rates, please see the supporting Excel document.

For additional information on completion rates in the wider VET sector, including completion and attrition rates for apprentices and trainees, please refer to <<http://www.ncver.edu.au/publications/2467.html>>.

¹ The change from 'qualification' to 'program' in the title of this publication merely reflects a change in terminology rather than any change in methodology, which remains consistent with previous editions. However, this publication does contain a slight change in scope from previous editions, with fee-for-service activity at community education providers excluded for the first time. Please see explanatory notes on page 9 for more detail on scope.

Tables

Table 1 Estimated completion rates and load pass rates by state and territory for government-funded programs at certificate I and above, commencing 2009–13

State or territory	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
New South Wales	36.7	38.6	38.8	38.0	34.0	79.9	80.2	80.4	79.5	78.8
Victoria	29.4	31.7	34.5	37.3	33.1	77.7	78.0	82.5	83.4	83.3
Queensland	28.1	33.3	35.9	31.9	33.1	87.2	87.7	89.5	88.8	89.2
South Australia	37.8	32.3	35.3	38.4	38.0	87.2	87.2	84.1	86.8	87.3
Western Australia	33.5	35.1	36.2	34.5	36.6	79.6	80.5	81.2	81.2	82.3
Tasmania	25.6	20.1	23.4	25.2	25.7	83.3	80.3	81.6	82.2	80.5
Northern Territory	18.2	22.6	27.3	30.9	34.8	73.6	76.7	75.4	77.7	79.4
Australian Capital Territory	46.5	44.8	40.4	32.0	40.8	81.9	81.8	82.6	81.1	84.7
Australia	32.1	33.8	35.7	36.0	34.0	80.9	81.2	83.0	83.1	83.1

For explanatory notes see page 9.

Table 2 Estimated completion rates and load pass rates by state and territory for government-funded programs at certificate I and above, commencing 2009–13, full-time, aged 25 years and under, with no prior post-school program completion

State or territory	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
New South Wales	49.8	49.8	52.0	51.7	47.3	76.6	75.3	75.7	76.2	76.9
Victoria	37.0	40.6	39.7	44.0	35.0	75.8	75.4	79.1	80.6	81.6
Queensland	54.5	53.6	51.0	52.0	52.6	85.8	85.3	87.8	87.3	86.6
South Australia	44.1	44.7	43.5	44.9	44.8	84.2	83.9	84.6	87.4	88.4
Western Australia	45.6	47.5	48.2	49.7	49.0	77.8	79.7	79.4	79.7	79.6
Tasmania*	59.4	49.0	64.6	64.7	64.3	79.3	87.0	84.4	93.3	84.9
Northern Territory*	44.1	55.4	52.2	56.7	64.4	77.7	85.0	81.5	84.3	90.3
Australian Capital Territory*	74.6	72.1	91.4	86.1	79.7	81.0	80.1	87.1	71.1	70.6
Australia	43.8	45.9	44.6	46.8	40.9	77.7	77.4	79.4	80.4	81.1

An asterisk (*) indicates that completion rates for this category are based on small sample sizes and should be interpreted with caution.

For explanatory notes see page 9.

Table 3 Estimated completion rates and load pass rates by program level for government-funded programs at certificate I and above, commencing 2009–13

Program level	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Diploma and above	37.9	42.8	43.8	44.7	42.2	81.5	82.3	83.2	83.0	82.5
Certificate IV	38.9	41.3	41.8	44.4	40.9	79.3	80.2	82.9	82.3	81.8
Certificate III	37.8	39.2	41.2	40.3	38.0	84.3	83.8	85.5	86.1	86.5
Certificate II	22.3	24.6	26.8	25.9	26.1	77.0	77.6	79.3	79.2	80.1
Certificate I	20.9	17.6	18.2	20.1	19.9	66.0	65.1	66.1	68.2	68.4
Total	32.1	33.8	35.7	36.0	34.0	80.9	81.2	83.0	83.1	83.1

For explanatory notes see page 9.

Table 4 Estimated completion rates and load pass rates by program level for government-funded programs at certificate I and above, commencing 2009–13, full-time, aged 25 years and under, with no prior post-school program completion

Program level	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Diploma and above	41.5	44.3	41.9	47.6	41.8	78.7	78.1	78.8	79.7	79.6
Certificate IV	43.8	43.7	45.0	48.8	39.1	76.1	75.2	79.3	78.3	78.1
Certificate III	51.1	55.1	56.6	58.7	50.6	79.9	80.1	82.8	84.9	85.8
Certificate II	38.3	40.5	38.3	41.0	37.1	73.1	73.5	74.5	76.0	77.0
Certificate I	34.9	27.9	21.3	19.0	23.2	68.3	63.1	61.5	54.9	59.6
Total	43.8	45.9	44.6	46.8	40.9	77.7	77.4	79.4	80.4	81.1

For explanatory notes see page 9.

Table 5 Estimated completion rates and load pass rates by field of education for government-funded programs at certificate I and above, commencing 2009–13

Field of education	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Natural and physical sciences	44.1	43.2	44.2	53.0	47.5	78.3	79.7	81.1	84.0	85.3
Information technology	30.2	32.7	31.5	29.5	29.5	71.3	71.7	72.5	71.5	71.1
Engineering and related technologies	30.1	31.4	35.4	32.6	32.7	85.2	84.7	87.0	88.1	89.7
Architecture and building	28.1	23.3	22.7	26.2	28.7	85.9	83.4	84.7	85.3	86.5
Agriculture, environmental and related studies	23.3	24.2	24.4	29.1	27.3	84.0	83.2	86.3	88.6	86.7
Health	32.1	30.4	35.2	36.6	35.9	83.7	82.3	82.6	82.8	81.4
Education	51.9	55.0	59.1	62.6	57.5	84.5	86.2	88.3	88.5	89.6
Management and commerce	36.5	40.4	42.5	46.0	44.1	81.6	82.9	84.7	84.2	84.1
Society and culture	44.6	45.9	48.7	47.2	43.7	82.3	83.0	84.4	83.2	81.9
Creative arts	29.6	31.8	33.9	34.6	37.1	77.3	77.8	78.0	79.0	79.4
Food, hospitality and personal services	21.7	24.8	25.7	27.6	26.9	83.7	83.1	84.2	86.5	87.8
Mixed field programs	22.5	24.0	18.6	19.2	18.8	62.0	61.9	63.2	65.8	67.2
Total	32.1	33.8	35.7	36.0	34.0	80.9	81.2	83.0	83.1	83.1

For explanatory notes see page 9.

Table 6 Estimated completion rates and load pass rates by field of education for government-funded programs at certificate I and above, commencing 2009–13, full-time, aged 25 years and under, with no prior post-school program completion

Field of education	Estimated program completion rate (%)					Subject load pass rate (%)				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Natural and physical sciences*	40.6	49.8	45.5	57.2	52.0	71.8	76.1	74.6	77.0	80.9
Information technology	32.7	37.3	36.6	38.8	38.7	66.9	66.3	70.2	69.5	68.2
Engineering and related technologies	43.4	44.6	46.0	46.4	44.8	80.0	78.6	81.6	83.6	85.9
Architecture and building	45.6	37.2	35.7	40.6	42.7	81.7	76.7	77.6	81.0	81.1
Agriculture, environmental and related studies	52.0	50.3	46.4	50.9	50.4	82.2	79.6	84.3	86.5	85.0
Health	46.7	45.0	45.8	47.9	42.9	80.9	76.0	79.4	79.1	77.4
Education*	37.9	42.0	59.0	51.6	14.7	74.6	73.6	80.8	80.6	96.1
Management and commerce	43.5	48.7	47.6	60.7	49.1	78.2	79.5	80.8	84.3	84.7
Society and culture	49.2	57.8	64.7	63.8	56.3	79.7	81.3	85.0	80.8	78.0
Creative arts	42.1	41.9	40.3	41.7	42.7	78.2	78.5	77.1	78.3	78.7
Food, hospitality and personal services	43.0	43.5	40.5	56.7	53.7	79.0	78.2	80.1	86.2	88.5
Mixed field programs	39.9	38.2	23.1	19.6	19.5	67.6	66.9	64.3	62.1	63.6
Total	43.8	45.9	44.6	46.8	40.9	77.7	77.4	79.4	80.4	81.1

An asterisk (*) indicates that completion rates for this category are based on small sample sizes and should be interpreted with caution. For explanatory notes see page 9.

Terms

Information included in this publication is, unless stated otherwise, derived from the National VET Provider Collection, which is compiled under the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS). For other terms and definitions, refer to the terms and definitions paper listed under additional information at <http://www.ncver.edu.au/publications/2803.html>.

Australian Qualifications Framework (AQF) is a nationally consistent framework of credentials offered in post-compulsory education and training that covers programs from certificate I through to a doctoral degree. For more details of the AQF, go to <http://www.aqf.edu.au>.

Estimated completion rate is that percentage of programs that are estimated to be completed, according to statistical modelling developed by NCVET. See <http://www.ncver.edu.au/publications/2272.html> for more details.

Field of education is the subject matter of an educational activity. The framework used here is defined in the Australian Standard Classification of Education (ASCED), created by the Australian Bureau of Statistics. See <http://www.abs.gov.au/ausstats/abs@.nsf/DetailsPage/1272.02001> for more details.

Full-time students are those students whose program of study constitutes at least 75% of the normal full-time study load. The Department of Education and Training regards a full-time study load as 720 contact hours in a year. Therefore, any student undertaking 540 hours or more is regarded as a full-time student.

Program enrolment is the registration of a student at a training organisation for the purpose of undertaking a module, unit of competency or subject, which leads to or is part of a recognised program.

Students are individuals who were enrolled in a subject or completed a program during the reporting period.

Subject load pass rate is the ratio of hours, or full-year training equivalents (FYTEs), attributed to students who gain competencies/passed assessment in an assessable module or unit of competency to all students who were assessed and either passed, failed or withdrew. The calculation is based on the annual hours (or FYTEs) for each assessable module or unit of competency and includes competencies achieved/units passed through recognition of prior learning (RPL).

Vocational education and training (VET) is that education (excluding higher education) which gives people work-related knowledge and skills.

Explanatory notes

Data source

1 Information in this publication is derived from the National VET Provider Collection. The activity covered in this publication applies the same scope as used in *Australian vocational education and training statistics: government-funded students and courses 2014*. This includes all VET delivered by:

- technical and further education (TAFE) and other government VET providers
- multi-sector higher education institutions
- the publicly-funded component of VET delivered by community education and other registered providers.

This publication does not cover the following types of training activity:

- recreation, leisure and personal enrichment activity ('non-vocational' programs)
- fee-for-service VET delivery by community education and private providers
- delivery undertaken at overseas campuses of Australian VET institutions
- credit transfer
- VET delivered in schools, where the activity is undertaken as part of a senior secondary school certificate
- any activity where revenue was earned from another registered training organisation in terms of subcontracted, auspicing, partnership arrangements or similar arrangements.

The National VET Provider Collection collects enrolment and completion details of VET students and their programs. While the database is essentially cross-sectional by year, there is enough information to match data over a number of years for individual VET students and the programs they undertake. Obtaining such a longitudinal dataset allows the use of mathematical techniques that rely on conditional probabilities to then calculate completion rates.

Methodology

2 The methodology used in this publication is identical to that given in Mark and Karmel (2010, <<http://www.ncver.edu.au/publications/2272.html>>). In summary, the methodology tracks all VET program enrolments within three-year windows, each centred on the year of interest. Then, using an absorbing Markov chain model for a VET program enrolment, it estimates the proportion of VET program enrolments commencing in the year of interest that will eventually be completed. This approach allows an estimate of the completion rate without having to longitudinally track program enrolments over a long period of time.

Estimates are restricted to VET program enrolments in Australian Qualification Framework (AQF) programs – certificate I level and above. Enrolments in non-AQF programs (secondary school-level programs, non-award programs and programs not identifiable by level) are excluded from the analysis, as the concept of completion is problematic.

A longitudinal dataset of VET program enrolments was compiled for each commencing year under consideration, by matching students and the programs they enrolled in over three years (from one year before the commencing year under consideration to one year after). For the purposes of this project, a unique student identifier was created using the combination of a student's date of birth, sex and encrypted identifier (a set of characters derived from the student's name via an encryption algorithm). This unique student identifier enables a student to be tracked over the yearly datasets.

After identifying students, all unique programs in which these students enrol through the years are identified using the program record identifier. For each VET program enrolment in the longitudinal dataset, variables are set up to indicate the years in which they are enrolled in the program, the year the program commenced and the year the program is completed (if it is completed). These indicator variables are used to determine the state in the Markov chain a program enrolment occupies each year.

The Markov chain is used to estimate the proportion of commencing VET program enrolments that will eventually be completed. From the National VET Provider Collection, longitudinal data of the pathways that program enrolments take from the commencing year to the following year are created, and are then used to observe the one-step transitional probabilities of the state of program enrolments from one year to the next (with the states at the second period being: continuing study, completed the program enrolled in and dropped-out). Using these probabilities, the techniques of absorbing Markov chain theory are applied to calculate the completion rate of commencing program enrolments in each year.

Definitions and assumptions

- 3 It is necessary to define the four states of a VET program enrolment in terms of the enrolment and completion data in the longitudinal dataset. The definitions of the states will be for a year n . The states are defined by yearly enrolment and completion information for each student over a two-year period, which is the year of consideration (year n) and the year before (year $n-1$).

As a technical addition due to the nature of the dataset, there is a state called 'Not in VET system', which is used to exclude observations in the dataset that will not play a role in the analysis for the year n of consideration. For example, a program in the dataset that is not enrolled or completed in year $n-1$ or n is not of interest in year n , and hence this program enrolment is assigned to this dummy state.

Commencing program in year n – a VET program in the longitudinal dataset is said to have commenced in year n by being enrolled in year n and the commencing flag variable states that this is a commencing year.

Continuing program in year n – a VET program in the longitudinal dataset is said to be a continuing program enrolment in year n by being enrolled in both year $n-1$ and year n , and is not indicated as being completed in year $n-1$. It is also a continuing program if it is not enrolled or indicated as completed in year $n-1$, enrolled in year n , and not indicated as a commencing year in year n .

Dropped out of program in year n – if, in year n , a VET student was enrolled in the previous year $n-1$, but not enrolled in this year n , and is never indicated as having completed during this two-year window, it is considered that the student has dropped out of the program.

Program completed in year n – the first rule is that any program indicated to be completed in year $n-1$ will be regarded as a completed program in year n . This reflects the absorbing nature of this state. This rule will also capture the completion of any program that was both enrolled and completed in the previous year.

Secondly, any program not enrolled in year n , and awarded in year n , will also be a completed program in year n . This will cover programs that are enrolled in year $n-1$ but are not given their completion until the following year n .

Not in VET system: when classifying states of programs in year n , those in the dataset who have not been enrolled or given a completion in either year $n-1$ or year n are not of interest. To exclude such program enrolments from the analysis in year n , they are assigned a dummy state of 'Not in VET system' for year n .

Using the definitions created, each program enrolment record in the longitudinal dataset for a given year is assigned a state in (i) the year itself and (ii) the next year (for example, each program enrolment record for 2009 is assigned a state in 2009 and 2010). Once the states are assigned, the transitional probabilities of programs moving from one state in a given year to another in the following year are examined. Of interest are the transitional probabilities of commencing and continuing program enrolments to the other states. Using these transitional probabilities, completion rates for programs commencing in a given year can be calculated (see Mark & Karmel [2010], appendix C).

Reporting of program completions and completion rates

- The numbers of program completions in a particular year are revised annually as additional completions are reported in the National VET Provider Collection for each year (see table 7).

Table 7 Number of program completions at certificate I and above reported by year program completed and year completion reported, 2007–13

Collection year	Year program completed													
	2007		2008		2009		2010		2011		2012		2013	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
2007	265 865	81.0												
2008	50 994	15.5	277 356	77.9										
2009	8 524	2.6	71 961	20.2	333 761	84.0								
2010	1 782	0.5	3 966	1.1	57 569	14.5	379 473	85.1						
2011	624	0.2	1 342	0.4	4 316	1.1	61 270	13.7	442 131	84.8				
2012	330	0.1	1 037	0.3	1 394	0.4	4 647	1.0	76 884	14.7	537 992	91.9		
2013	146	0.0	117	0.0	260	0.1	485	0.1	2 104	0.4	44 514	7.6	495 418	88.1
2014	11	0.0	38	0.0	64	0.0	227	0.1	380	0.1	2 647	0.5	66 794	11.9
Total	328 276	100.0	355 817	100.0	397 364	100.0	446 102	100.0	521 499	100.0	585 153	100.0	562 212	100.0

Source: NCVER, National VET Provider Collections, 2007–14.

Completion rates previously published for a particular year are revised each year due to the reporting of additional program completions in the National VET Provider Collection. However, the reporting of these additional program completions has minimal impact on the completion rate estimates at a national level. For example, the national estimated completion rate for VET programs at certificate I and above commenced in 2012 only increased from 35.8% when derived from the 2013 Collection to 36.0% when derived from the 2014 Collection (table 8).

Table 8 Estimated completion rates for programs at certificate I and above, commencing 2007–13 (%)

Collection year	Year program commenced						
	2007	2008	2009	2010	2011	2012	2013
2010	27.8	28.4					
2011	27.9	28.8	31.7				
2012		28.9	32.1	33.7	35.5		
2013			32.1	33.7	35.6	35.8	
2014			32.1	33.8	35.7	36.0	34.0

Source: NCVER, *Australian vocational education and training statistics: the likelihood of completing a government-funded VET program 2009–13*; and NCVER, *Australian vocational education and training statistics: the likelihood of completing a VET qualification* (various years).

Low sample sizes and variability of completion rates

- 5 Completion rates marked with an asterisk (*) are based on sample sizes of less than 1000 and should be interpreted with caution. (The load pass rates are not affected.) The relatively high variability of these rates across years is due to the small sample sizes. The supporting Excel document, available from <http://www.ncver.edu.au/publications/2794.html>, provides sample sizes for all the different tabulations in this publication.

State and territory notes

- 6 The decrease in completion rates in New South Wales for programs commenced in 2013 may be partly explained by TAFE NSW not being able to report additional program completions for historical years in the 2014 National VET Provider Collection following changes in data collection.
- 7 The increase in completion rates in the Australian Capital Territory for programs commenced in 2013 appears to be a correction from the decline in completion rates for 2012 commencements, which was primarily due to data quality issues with the name encryption of some students, leading to a mismatch between program completions and enrolments.



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