2006–09

THE LIKELIHOOD OF COMPLETING A VET QUALIFICATION

Australian vocational education & training statistics

NCVER

Australian Government
Department of Industry, Innovation Science, Research and Tertiary Education

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The likelihood of completing a VET qualification

2006–09

Highlights

This publication uses statistical techniques to estimate completion rates for vocational education and training (VET) qualifications.

For qualifications commencing in 2009

- The national estimated completion rate for VET qualifications at certificate I and above was 31.7%, up from 28.8% for qualifications commenced in 2008.
- For students in full-time study aged 25 years and under with no prior post-school qualification, the national estimated completion rate for VET qualifications was 42.9%, up from 37.9% for qualifications commenced in 2008.
- VET qualifications at certificate IV (38.5%), diploma and above (37.4%) and certificate III (37.3%) had the highest national estimated completion rates.
- For students in full-time study aged 25 years and under with no prior post-school qualification, the national estimated completion rate for VET qualifications at certificate III was 50.1%.
- VET qualifications in education (51.5%), society and culture (44.3%), and natural and physical sciences (43.3%) had the highest national estimated completion rates.

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This document should be attributed as NCVER 2012, *Australian vocational education and training statistics: the likelihood of completing a VET qualification, 2006–09,* NCVER, Adelaide.

This work has been produced by NCVER on behalf of the Australian Government and state and territory governments, with funding provided through the Department of Industry, Innovation, Science, Research and Tertiary Education.

The views and opinions expressed in this document are those of NCVER and do not necessarily reflect the views of the Australian Government or state and territory governments.

ISSN 1839-0870

TD/TNC 109.18

Comments and suggestions regarding this publication are welcomed and should be forwarded to NCVER.

Published by NCVER, ABN 87 007 967 311

Level 11, 33 King William Street, Adelaide SA 5000

PO Box 8288, Station Arcade, Adelaide SA 5000, Australia

P (08) 8230 8400 **F** (08) 8212 3436 **W** <http://www.ncver.edu.au > **E** <vet_req@ncver.edu.au>

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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 courses that lead to formal qualifications.

This publication estimates the qualification completion rates of publicly funded VET qualifications in Australia, in order to fill a gap in performance measures for the VET sector.

Figures in this publication use the most recent VET provider data available and are an update on the earlier release, *Australian vocational education and training statistics: the likelihood of completing a VET qualification 2005–08.* Additional qualification completions reported to the National Centre for Vocational Education Research (NCVER) since the previous release mean that figures for 2006–08 may vary slightly from those previously published.

Data scope

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: students and courses 2011*. Activity includes vocational education and training delivered by:

- technical and further education (TAFE) and other government providers
- multi-sector higher education institutions
- community providers
- private providers.

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

- recreation, leisure and personal enrichment
- fee-for-service VET by private providers
- delivery undertaken at overseas campuses of Australian VET institutions
- credit transfer
- VET delivered in schools, where the delivery has been undertaken by schools.

The National VET Provider Collection collects enrolment and qualification completion details of VET students and the courses in which they enrol. 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 courses they undertake. Obtaining such a longitudinal dataset allows the use of mathematical techniques that rely on conditional probabilities to then calculate completion rates.

Methodology and technical notes

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 course enrolments within three-year windows, each centred on the year of interest. Then, using an absorbing Markov chain model for a VET course enrolment, it estimates the proportion of VET course 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 course enrolments over a long period of time.

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

The analysis is based upon numbers of VET course enrolments. The sample sizes for the various tabulations are presented in supporting documentation available from <http://www.ncver.edu.au/publications/2549.html>.

A longitudinal dataset of VET course enrolments was compiled for each commencing year under consideration, by matching students and the courses 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_id (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 courses in which students enrol through the years are identified using the course record identifier. For each VET course enrolment in the longitudinal dataset, variables are set up to indicate the years in which they are enrolled in the course, the year the course commenced, and the year the course is completed (if it is completed). These indicator variables are used in definitions to determine the state in the Markov chain a course enrolment occupies each year.

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

Definitions and assumptions

It is necessary to define the four states of a VET course enrolment listed above in terms of the enrolment and award data in the longitudinal dataset. The definitions of the states will be for a year *n*. The states are defined by yearly enrolment and award 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 course 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 course enrolment is assigned to this dummy state.

- **Commencing course** in year *n*—a VET course 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 course** in year *n*—a VET course in the longitudinal dataset is said to be a continuing course 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 course 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 course** 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, then it is considered that the student has dropped out of the course.
- **Course completed** in year *n*—the first rule is that any course indicated to be completed in year *n-1* will be regarded as a completed course in year *n*. This reflects the absorbing nature of this state. This rule will also capture the completion of any course that was both enrolled and completed in the previous year.

  Secondly, any course not enrolled in year *n*, and awarded in year *n*, will also be a completed course in year *n*. This will cover courses that are enrolled in year *n-1* but are not given their award until the following year *n*.
- **Not in VET system**: when classifying states of courses in year *n*, those in the dataset who have not been enrolled or given an award in either of year *n-1* or year *n* are not of interest. To exclude such course 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 course enrolment record in the longitudinal dataset for a given year is assigned a state in (i) the year itself and (ii) the next year (e.g. each course enrolment record for 2006 is assigned a state in 2006 and 2007). Once the states are assigned, the transitional probabilities of courses 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 course enrolments to the other states. Using these transitional probabilities, completion rates for qualifications commencing in a given year can be calculated (see Mark & Karmel [2010], appendix C, <http://www.ncver.edu.au/publications/2272.html>).

Tables

Table 1 Estimated completion rates and load pass rates by state and territory for qualifications at certificate I and above, commencing 2006–09

State	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
New South Wales	33.5	34.7	36.3	36.5	79.4	79.5	79.9	79.9
Victoria	23.7	24.8	24.6	28.8	77.0	76.5	77.3	77.7
Queensland	22.6	24.9	25.5	27.9	82.9	84.9	86.7	87.2
South Australia	28.7	30.7	36.5	37.5	88.8	88.5	87.3	87.2
Western Australia	25.4	26.0	26.7	32.5	75.9	76.6	77.5	79.6
Tasmania	23.2	19.5	19.4	25.5	80.4	79.0	80.9	83.3
Northern Territory	11.9	16.4	16.5	18.1	70.8	73.9	72.4	73.6
Australian Capital Territory	35.8	37.9	40.0	45.2	78.6	79.7	81.5	81.9
Australia	**26.7**	**27.9**	**28.8**	**31.7**	**79.4**	**79.6**	**80.4**	**80.9**

For notes on tables, see page 9.

Table 2 Estimated completion rates and load pass rates by state and territory for qualifications at certificate I and above, commencing 2006–09, full-time, aged 25 years and under, with no prior post-school qualification

State	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
New South Wales	47.6	48.2	50.1	49.5	76.7	76.9	77.4	76.6
Victoria	32.3	31.7	29.3	35.9	76.2	74.4	75.5	75.7
Queensland	29.6	34.6	42.9	54.2	77.9	80.7	83.4	85.8
South Australia[1]	40.8	32.0	43.0	43.8	85.7	87.9	85.4	84.2
Western Australia	39.0	39.3	39.8	43.6	77.0	76.7	76.7	77.8
Tasmania[2,3]	48.0	43.3	34.8	59.4	81.2	81.1	81.1	79.3
Northern Territory[2,3]	20.0	34.2	35.3	44.1	71.0	81.8	77.8	77.7
Australian Capital Territory[2,3]	43.6	54.0	61.0	74.0	67.8	77.8	77.7	81.0
Australia	**36.1**	**36.7**	**37.9**	**42.9**	**77.0**	**76.9**	**77.5**	**77.6**

For notes on tables, see page 9.

Table 3 Estimated completion rates and load pass rates by qualification level for qualifications at certificate I and above, commencing 2006–09

AQF qualifications	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
Diploma and above	32.6	33.4	33.5	37.4	79.5	79.7	80.9	81.5
Certificate IV	30.3	32.0	35.0	38.5	76.8	77.3	78.5	79.4
Certificate III	32.4	33.6	34.0	37.3	83.6	83.7	84.3	84.3
Certificate II	20.9	21.5	21.3	21.9	76.4	76.6	76.2	76.9
Certificate I	16.3	17.5	18.8	21.0	66.6	66.1	64.5	66.0
Total	**26.7**	**27.9**	**28.8**	**31.7**	**79.4**	**79.6**	**80.4**	**80.9**

For notes on tables, see page 9.

Table 4 Estimated completion rates and load pass rates by qualification level for qualifications at certificate I and above, commencing 2006–09, full-time, aged 25 years and under, with no prior post-school qualification

AQF qualifications	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
Diploma and above	37.3	37.5	35.4	40.8	78.3	78.2	79.4	78.8
Certificate IV	32.6	33.6	35.1	42.5	74.7	73.8	75.0	76.1
Certificate III	42.9	43.2	46.6	50.1	80.0	79.1	79.6	79.9
Certificate II	29.5	30.7	32.8	37.5	70.9	72.5	71.3	72.8
Certificate I	31.5	31.0	30.8	34.5	73.1	71.8	69.0	68.1
Total	**36.1**	**36.7**	**37.9**	**42.9**	**77.0**	**76.9**	**77.5**	**77.6**

For notes on tables, see page 9.

Table 5 Estimated completion rates and load pass rates by field of education for qualifications at certificate I and above, commencing 2006–09

Field of education	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
Natural and physical sciences	30.6	34.7	36.3	43.3	75.2	75.0	78.2	78.3
Information technology	18.7	24.3	26.8	29.7	69.6	71.3	71.5	71.3
Engineering and related technologies	24.0	26.3	26.6	29.7	85.4	84.5	84.2	85.2
Architecture and building	26.5	29.0	32.1	27.5	85.2	85.1	86.0	85.9
Agriculture, environmental and related studies	18.0	20.0	21.4	23.1	83.9	82.2	83.4	84.0
Health	46.0	42.4	37.5	31.9	82.2	81.5	83.2	83.7
Education	41.8	46.1	52.6	51.5	79.3	82.9	83.8	84.5
Management and commerce	29.5	29.3	30.9	36.1	79.5	79.8	81.3	81.6
Society and culture	36.4	37.3	37.7	44.3	80.4	80.6	81.6	82.3
Creative arts	27.4	26.3	25.3	28.5	77.0	76.5	76.5	77.3
Food, hospitality and personal services	22.2	22.9	21.5	21.2	82.7	83.9	84.3	83.7
Mixed field programs	16.2	17.4	17.8	22.0	57.4	61.5	59.9	61.9
Total	**26.7**	**27.9**	**28.8**	**31.7**	**79.4**	**79.6**	**80.4**	**80.9**

For notes on tables, see page 9.

Table 6 Estimated completion rates and load pass rates by field of education for qualifications at certificate I and above, commencing 2006–09, full-time, aged 25 years and under, with no prior post-school qualification

Field of education	Estimated qualification completion rate (%)				Subject load pass rate (%)			
	2006	2007	2008	2009	2006	2007	2008	2009
Natural and physical sciences[2]	34.9	35.3	39.9	39.9	75.6	73.0	74.5	71.8
Information technology	24.7	27.3	27.3	31.8	69.6	69.3	68.3	66.9
Engineering and related technologies	36.6	37.3	37.9	42.4	78.2	77.6	77.0	80.0
Architecture and building	40.8	41.5	42.1	44.3	83.1	81.8	82.6	81.7
Agriculture, environmental and related studies	42.4	44.6	48.6	51.6	82.6	79.6	81.7	82.2
Health	49.9	51.2	44.0	46.5	79.0	80.6	83.2	80.9
Education[2]	49.2	36.9	42.5	37.0	67.1	70.3	78.1	74.6
Management and commerce	34.1	36.1	36.3	42.6	77.8	77.5	79.7	78.3
Society and culture	44.3	43.5	46.7	48.4	79.9	78.9	79.9	79.7
Creative arts	38.6	35.4	33.2	40.8	79.9	78.9	78.6	78.1
Food, hospitality and personal services	35.5	38.5	40.1	42.0	80.1	82.0	81.4	79.0
Mixed field programs	29.5	27.5	30.1	39.1	61.9	66.7	64.4	67.2
Total	**36.1**	**36.7**	**37.9**	**42.9**	**77.0**	**76.9**	**77.5**	**77.6**

For notes on tables, 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 supporting documents at <http://www.ncver.edu.au/publications/2509.html>.

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

Enrolment (module/subject) is the registration of a student at a training delivery location for the purpose of undertaking a module, unit of competency or subject.

Estimated completion rate is that percentage of qualifications that are estimated to be completed, according to statistical modelling developed by NCVER. 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 Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) regard 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.

Students are individuals who were enrolled in a subject or completed a qualification 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.

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

Notes on tables

1. The 2007 completion rate figure for South Australia should be interpreted with caution. There was a large jump in commencements in 2007 in South Australia by full-time students aged 25 years and under with no prior post-school qualification. It is also suspected that data-quality issues may have compounded any problems associated with the relatively low sample numbers used in this modelling exercise.
2. These estimated completion rates are based on sample sizes of less than 1000 and should be interpreted with caution. The load pass rates are not affected.
3. The high variability between years is due to generally small sample sizes, the percentage change of which between years is relatively large.

National Centre for Vocational Education Research Ltd
Level 11, 33 King William Street, Adelaide, South Australia
PO Box 8288, Station Arcade, SA 5000 Australia
Telephone +61 8 8230 8400 Facsimile +61 8 8212 3436
Website www.ncver.edu.au Email ncver@ncver.edu.au