Australian Government

Australian Workforce and Productivity Agency

Education and training

…covers pre-school education, primary and secondary school education, tertiary education, adult, community education and other education including driving & flying school operations and education support services.

This suite of Industry Snapshots complements *Future Focus*, the 2013 National Workforce Development Strategy. These snapshots provide additional information and analysis on each industry to assist stakeholders in planning for the future of their industry or sector. It should be noted that the longer term data contained in this publication is based on AWPA's four scenarios for Australia to 2025 and is not intended to be compared to other data sources or projections.

Key points

- Education and training employs approximately 915,400 persons, accounting for around eight per cent of the total Australian workforce.
- Employment in education and training is expected to continue to grow above the national average over the next five years.
- Within the private sector, nearly two-fifths of the industry workforce is employed in medium-sized enterprises (i.e. those that employ between 20 and 199 workers), with 28 per cent in small-sized enterprises (i.e. those that employ less than 20 workers) and 33 per cent in large enterprises (i.e. those that employ 200 workers or more).[1]
- 36 per cent of employment occurs in regional and remote areas, which similar to the all-industry average (37 per cent).[2]
- The education and training industry has the second highest proportion of female workers after health and social assistance, at 69 per cent, and employs a high proportion of part-time workers, at 38 per cent.
- The industry has the highest proportion of workers with a Bachelor degree or higher qualification (64 per cent, compared to 27 per cent for all industries)—and has the lowest proportion of workers without a post-school qualification (15 per cent, compared to an all-industry average of 37 per cent)
- A detailed employment profile for education and training (including information on its workforce, industry and occupational characteristics) can be found at www.skillsinfo.gov.au

Industry outlook

The education and training sector is a large and important industry, providing essential services to the community. In terms of industry value added, the education and training industry contributed around $63.3b (4.6 per cent) to the Australian economy in 2011–12.[3]

[1] Business size data refers only to private enterprises and excludes employment in the public sector.
[2] Regional and remote areas are defined as those outside state capital cities.
[3] 'Industry value added' is the measure of the contribution by industry to gross domestic product (GDP) at basic prices. ABS (2012) *Australian System of National Accounts*, cat. no. 5204.0, Table 11.

Short-term growth

Employment in education and training has grown at almost twice the average for all industries over the past five years, with particularly high growth experienced within the Adult, Community and Other Education subsector.

Table 1 Current and past employment in education and training

Industry	Current employment		Past growth: five years	
	'000	% of total	'000	%
Education and Training	**915.4**	**7.9**	**107.1**	**13.2**
Preschool and School Education	532.7	4.7	22.7	4.5
Tertiary Education	248.3	2.2	21.0	9.2
Adult, Community and Other Education	125.2	1.1	50.5	67.7
All industries	**11,588.7**	**100.0**	**798.1**	**7.4**

Note: Data for industry subsectors may not sum to the industry total because data for each subsector have been separately seasonally adjusted and trended and at the higher levels include 'not further defined' categories.
Source: ABS (2013) *Labour Force Australia*, February, cat. no. 6291.0.55.003 (DEEWR trend).

Long-term growth

Australia needs to position itself in a world where work is changing rapidly. Technological innovation, globalisation, the Asian century and new patterns of work are impacting on the demand for skills and the speed of change is making it hard to predict and plan for the future.

To deal with this uncertainty, AWPA has adopted a scenario planning approach to help us overcome these limitations in making projections about the future. Scenarios are alternative visions of potential futures, and provide a means to make decisions that take account of uncertainty.

AWPA developed four possible, plausible scenarios for Australia to 2025.

- In the **Long Boom** scenario, the high demand for resources traded with China and other countries continues. Industries challenged by the high terms of trade undertake structural adjustment. This results in a scenario of sustained prosperity and a restructured economy.
- In **Smart Recovery**, the challenges facing Europe and the United States affect financial markets. This means low growth for Australia to 2014–15. Growth then improves and Australia benefits from industry and government strategies to implement a knowledge economy.
- In **Terms of Trade Shock**, resource prices fall mainly due to increased supply from other countries, the Australian dollar falls and we move to a broader-based economy.
- **Ring of Fire** is a risky world with multiple economic and environmental shocks resulting in ongoing lower growth.

Economic modelling against each of these four scenarios was undertaken by Deloitte Access Economics (DAE) to determine the skills demand for the economy into the future.[4]

The industry is forecast to grow relatively strongly whatever scenario eventuates. For each future world, employment growth per annum is expected to be higher than the all-industry average in the years to 2018 and 2025. However each subsector within the education and training industry is forecast to grow at different rates. For example, Preschool and School Education will experience relatively low growth, due predominantly to changing demographics and Australia's ageing population. On the other hand, employment growth in adult, Community and Other Education is expected to be very high, increasing at a rate three times the average for all industries.

Table 2 Average annual industry employment growth in four scenarios, 2011–18 and 2011–25 (% per annum)

Industry	Long Boom		Smart Recovery		Terms of Trade Shock		Ring of Fire	
	2018	2025	2018	2025	2018	2025	2018	2025
Education and Training	**2.9**	**3.2**	**2.7**	**3.1**	**3.8**	**3.3**	**2.2**	**2.1**
Preschool and School Education	0.8	0.9	0.6	0.7	1.7	1.0	0.0	-0.2
Tertiary Education	1.4	1.8	1.3	1.6	2.4	1.9	0.7	0.6
Adult, Community and Other Education	11.1	9.9	10.9	9.7	12.1	10.0	10.3	8.7
All industries	**2.1**	**2.0**	**1.5**	**1.5**	**1.7**	**1.6**	**0.8**	**0.7**

Source: Deloitte Access Economics (2012) *Economic modelling of skills demand and supply*, Scenario output—detailed employment results.

Occupation outlook

Key occupations

The largest two occupation groups in the education and training sector are Primary and Secondary School Teachers, which together comprise nearly a third of all employment in the industry. Education Aides account for a further 9.1 per cent of the industry workforce, followed by University Lecturers and Tutors (5.3 per cent), Vocational Education Teachers (3.6 per cent) and Private Tutors and Teachers (3.3 per cent).

[4] A description of the scenarios and the Deloitte Access Economics modeling of employment in each, with state and territory breakdowns, is available at the AWPA website www.awpa.gov.au.

Table 3 Top ten education and training occupations

Occupation		People employed	Industry employment
		'000	% of total
2412	Primary School Teachers	141.5	15.9
2414	Secondary School Teachers	136.5	15.4
4221	Education Aides	80.6	9.1
2421	University Lecturers and Tutors	46.8	5.3
2422	Vocational Education Teachers[(a)]	32.3	3.6
2492	Private Tutors and Teachers	29.2	3.3
5311	General Clerks	28.0	3.2
2410	School Teachers nfd (not further defined)[(b)]	26.9	3.0
1343	School Principals	21.9	2.5
2411	Early Childhood (Pre-primary School) Teachers	18.4	2.1
4523	Sports Coaches, Instructors and Officials	18.0	2.0
Total education and training		**888.3**	**63.3**

Note: (a) This figure only reflects those workers who identify their *primary* occupation as vocational education teachers. It may therefore underestimate the total number of VET teachers who also work in other occupations (e.g. trades).
(b) 2410 School Teachers nfd (not further defined) refer to occupations at the three-digit ANZSCO level which cannot be further defined at the four-digit level. As data is not available for these occupational groups at the required level of detail, they have been omitted from Tables 4-7.
Source: ABS (2013) *Labour Force Australia*, detailed quarterly report, 2012 average of four quarters, cat. no. 6291.0.55.003.

Short-term growth

Table 4 shows current employment and past growth for the occupations that feature prominently within the industry. **Note that the figures refer to the expected number of people in these occupations across all industries, not just in education and training**.

A number of key occupations within the education and training sector expanded their workforce by more than half over the past five years. These include Sports Coaches, Instructors and Officials; Early Childhood (Pre-primary School) Teachers; Education Aides; and General Clerks. However, despite the expansion in adult and tertiary education over the past five years (as illustrated in Table 1), Vocational Education Teachers; Private Tutors and Teachers; and University Lecturers and Tutors all experienced a decline in employment over this period.

Table 4 Current and past employment in key occupations

Occupation		Current employment (all industries)		Past growth: five years	
		'000	% of total	'000	%
2412	Primary School Teachers	163.7	1.5	12.5	8.3
2414	Secondary School Teachers	144.6	1.3	5.1	3.6
4221	Education Aides	87.8	0.8	30.4	52.9
2421	University Lecturers and Tutors	47.9	0.4	-0.3	-0.6
2422	Vocational Education Teachers	39.3	0.3	-2.1	-5.0
2492	Private Tutors and Teachers	24.9	0.2	-0.9	-3.4
5311	General Clerks	204.1	1.8	70.0	52.2
1343	School Principals	22.6	0.2	1.1	5.3
2411	Early Childhood (Pre-primary School) Teachers	23.4	0.2	9.2	64.7
4523	Sports Coaches, Instructors and Officials	41.9	0.4	17.2	69.5
All employed		**11,588.7**	**100.0**	**798.1**	**7.4**

Source: ABS (2013) *Labour Force Australia*, February, cat. no. 6291.0.55.003 (DEEWR trend).

Long-term growth and job openings

Table 5 indicates the long-term net job growth per annum expected in these occupation groups, according to Deloitte Access Economics' economic modelling of the scenarios.

In the longer-term, occupations associated with the education and training sector have average or above-average expected growth compared to other groups, with the exception of University Lecturers and Tutors which are forecast to have decrease in employment to 2018 and below-average growth to 2025.

Table 5 Average annual occupation growth in four scenarios, 2011–18 and 2011–25 (%pa)

Industry		Long Boom		Smart Recovery		Terms of Trade Shock		Ring of Fire	
		2018	2025	2018	2025	2018	2025	2018	2025
2412	Primary School Teachers	0.7	1.1	0.3	0.8	1.2	1.1	-0.3	-0.1
2414	Secondary School Teachers	1.2	1.7	0.8	1.4	1.8	1.6	0.2	0.4
4221	Education Aides	2.1	2.3	1.9	2.1	2.9	2.4	1.4	1.2
2421	University Lecturers and Tutors	-1.6	0.5	-2.0	0.2	-0.9	0.5	-2.8	-0.9
2422	Vocational Education Teachers	4.4	3.9	3.9	3.6	5.0	3.9	3.1	2.6
2492	Private Tutors and Teachers	7.2	7.8	6.7	7.6	7.9	7.9	5.9	6.4
5311	General Clerks	4.0	3.1	3.2	2.6	3.5	2.6	2.3	1.6
1343	School Principals	6.9	4.6	6.6	4.3	7.4	4.5	6.1	3.6
2411	Early Childhood (Pre-primary School) Teachers	7.6	5.5	7.2	5.2	8.1	5.4	6.6	4.3
4523	Sports Coaches, Instructors and Officials	4.7	5.5	4.4	5.3	5.4	5.6	3.9	4.3
All occupations		**2.1**	**2.0**	**1.5**	**1.5**	**1.7**	**1.6**	**0.8**	**0.7**

Source: Deloitte Access Economics (2012) *Economic modelling of skills demand and supply*, Scenario output—detailed employment results.

As noted, the data in Table 5 concerns employment growth in an industry. The number of total **job openings** which includes both employment growth and **the replacement resulting from individuals leaving the occupation net of those re-entering** can also be estimated. This replacement requirement is particularly significant in industries where there are high numbers of people retiring or leaving the occupation.

Table 6 shows the average annual job openings projected in key education and training occupations to 2025. The proportion of job openings per annum is expected to be high across all four scenarios, with the exception of University Lecturers and Tutors and (to a lesser extent) Primary School Teachers, which are both forecast to have below average job opening rates to 2025. Private Tutors and Teachers; School Principals; and Sports Coaches, Instructors and Officials are expected to have the highest proportion of job openings to 2025 regardless of which scenario eventuates.

Table 6 Average annual job openings per annum, 2011 to 2025, in four scenarios

Occupation		Long Boom		Smart Recovery		Terms of Trade Shock		Ring of Fire	
		('000)	%	('000)	%	('000)	%	('000)	%
2412	Primary School Teachers	7.6	3.6	7.1	3.4	7.7	3.6	5.4	2.4
2414	Secondary School Teachers	7.7	4.4	7.1	4.1	7.8	4.4	5.4	3.1
4221	Education Aides	4.6	4.4	4.4	4.2	4.7	4.5	3.5	3.3
2421	University Lecturers and Tutors	3.1	2.1	2.9	1.8	3.1	2.1	2.3	0.7
2422	Vocational Education Teachers	3.1	6.6	2.8	6.3	3.1	6.6	2.2	5.2
2492	Private Tutors and Teachers	6.4	10.5	6.1	10.3	6.5	10.6	5.1	9.1
5311	General Clerks	10.6	4.7	9.2	4.2	9.4	4.2	6.7	3.2
1343	School Principals	2.3	9.2	2.3	9.0	2.4	9.2	2.0	8.2
2411	Early Childhood (Pre-primary School) Teachers	2.1	7.1	1.9	6.8	2.1	7.1	1.6	5.9
4523	Sports Coaches, Instructors and Officials	5.1	8.3	4.9	8.1	5.2	8.4	4.3	7.1
All occupations		**576.4**	**4.4**	**500.9**	**3.9**	**513.3**	**4.0**	**391.4**	**3.1**

Source: Deloitte Access Economics (2012) *Economic modelling of skills demand and supply*, Scenario output—detailed employment results. Net replacement demand by AWPA (2013).

As Tables 7 shows, the majority of job openings under the Long Boom, Smart Recovery and Terms of Trade Shock scenarios are expected to be driven by new growth rather than by replacement requirements. The exceptions to this trend are School Principals; Primary School Teachers; and Secondary School Teachers, for which the bulk of job openings are anticipated to be created by replacement demand. This may reflect the age profile of these occupations or other workforce dynamics such as the rate of job turnover. Under the lowest growth scenario, Ring of Fire, replacement requirements are also the chief driver of job openings for Vocational Education Teachers and General Clerks.

Table 7 Total job openings (growth and net replacement) in four scenarios, 2011 to 2025

7.1 Long Boom

Occupation		Total growth (persons)		Net replacement estimates (persons)		Total job openings (persons)	
		('000)	%	('000)	%	('000)	%
2412	Primary School Teachers	48.1	42.0	66.4	58.0	114.5	100.0
2414	Secondary School Teachers	49.1	42.6	66.2	57.4	115.4	100.0
4221	Education Aides	41.7	60.0	27.8	40.0	69.5	100.0
2421	University Lecturers and Tutors	34.1	73.4	12.3	26.6	46.4	100.0
2422	Vocational Education Teachers	26.1	57.1	19.6	42.9	45.8	100.0
2492	Private Tutors and Teachers	71.5	74.1	25.0	25.9	96.5	100.0
5311	General Clerks	102.0	64.1	57.1	35.9	159.0	100.0
1343	School Principals	15.6	44.4	19.6	55.6	35.2	100.0
2411	Early Childhood (Pre-primary School) Teachers	22.5	72.6	8.5	27.4	31.0	100.0
4523	Sports Coaches, Instructors and Officials	54.7	71.4	21.9	28.6	76.7	100.0
All occupations		**3,889.7**	**45.0**	**4,755.6**	**55.0**	**8,645.3**	**100.0**

7.2 Smart Recovery

Occupation		Total growth (persons)		Net replacement estimates (persons)		Total job openings (persons)	
		('000)	%	('000)	%	('000)	%
2412	Primary School Teachers	41.1	38.8	64.9	61.2	106.0	100.0
2414	Secondary School Teachers	42.3	39.6	64.6	60.4	107.0	100.0
4221	Education Aides	38.5	58.5	27.4	41.5	65.9	100.0
2421	University Lecturers and Tutors	31.6	72.5	12.0	27.5	43.6	100.0
2422	Vocational Education Teachers	23.5	55.2	19.1	44.8	42.6	100.0
2492	Private Tutors and Teachers	67.7	73.6	24.3	26.4	92.0	100.0
5311	General Clerks	83.0	60.4	54.3	39.6	137.3	100.0
1343	School Principals	14.6	43.2	19.2	56.8	33.8	100.0
2411	Early Childhood (Pre-primary School) Teachers	20.8	71.5	8.3	28.5	29.1	100.0
4523	Sports Coaches, Instructors and Officials	52.5	70.9	21.5	29.1	74.0	100.0
All occupations		**2,953.2**	**39.3**	**4,559.6**	**60.7**	**7,512.9**	**100.0**

7.3 Terms of Trade Shock

Occupation		Total growth (persons)		Net replacement estimates (persons)		Total job openings (persons)	
		('000)	%	('000)	%	('000)	%
2412	Primary School Teachers	47.3	41.1	67.7	58.9	115.0	100.0
2414	Secondary School Teachers	48.7	41.9	67.6	58.1	116.3	100.0
4221	Education Aides	42.4	59.7	28.6	40.3	70.9	100.0
2421	University Lecturers and Tutors	33.9	72.9	12.6	27.1	46.6	100.0
2422	Vocational Education Teachers	25.8	56.3	20.0	43.7	45.8	100.0
2492	Private Tutors and Teachers	71.7	73.7	25.6	26.3	97.2	100.0
5311	General Clerks	85.4	60.7	55.2	39.3	140.7	100.0
1343	School Principals	15.5	43.8	19.9	56.2	35.3	100.0
2411	Early Childhood (Pre-primary School) Teachers	22.3	72.1	8.6	27.9	30.9	100.0
4523	Sports Coaches, Instructors and Officials	55.4	71.1	22.5	28.9	78.0	100.0
All occupations		**3,080.4**	**40.0**	**4,619.3**	**60.0**	**7,699.6**	**100.0**

7.4 Ring of Fire

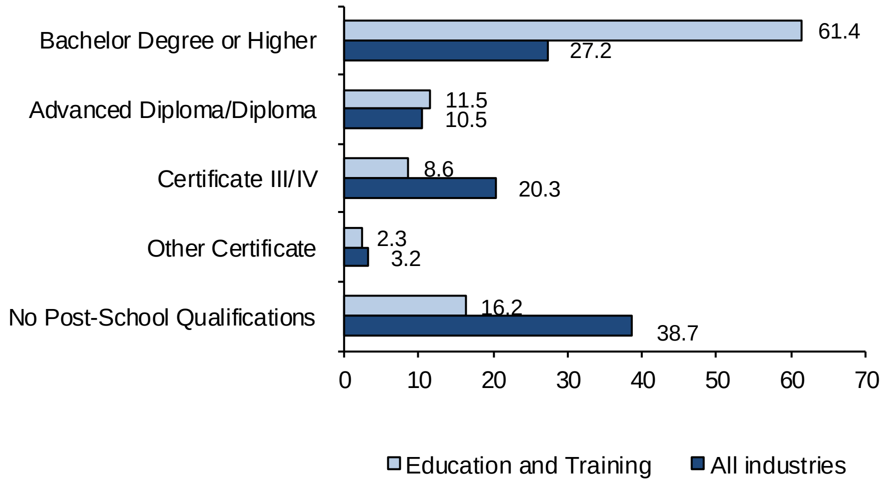
Occupation		Total growth (persons)		Net replacement estimates (persons)		Total job openings (persons)	
		('000)	%	('000)	%	('000)	%
2412	Primary School Teachers	19.0	23.6	61.4	76.4	80.4	100.0
2414	Secondary School Teachers	19.5	24.3	61.0	75.7	80.5	100.0
4221	Education Aides	27.0	50.9	26.0	49.1	53.0	100.0
2421	University Lecturers and Tutors	23.2	67.4	11.2	32.6	34.4	100.0
2422	Vocational Education Teachers	15.4	46.3	17.9	53.7	33.2	100.0
2492	Private Tutors and Teachers	54.1	70.7	22.4	29.3	76.5	100.0
5311	General Clerks	49.3	49.2	50.9	50.8	100.2	100.0
1343	School Principals	11.5	38.4	18.4	61.6	29.9	100.0
2411	Early Childhood (Pre-primary School) Teachers	16.1	67.3	7.8	32.7	23.9	100.0
4523	Sports Coaches, Instructors and Officials	43.6	68.2	20.3	31.8	64.0	100.0
All occupations		**1,532.9**	**26.1**	**4,338.5**	**73.9**	**5,871.4**	**100.0**

Source: Deloitte Access Economics (2012) *Economic modelling of skills demand and supply*, Scenario output—detailed employment results. Net replacement demand by AWPA (2013).

Education and training profile

The education and training sector has the highest proportion of tertiary-educated workers, with 61 per cent having completed a Bachelor degree or higher, and a further 11.5 per cent having attained a Diploma or Advanced Diploma. Only 16.2 per cent of the workforce does not hold post-school qualifications, which represents the lowest proportion of any sector, and accounts for less than half the all-industry average of 38.7 per cent.

Figure 1 Education profile of the education and training workforce (%)



Note: Excludes 'Level of education not stated' from total.
Source: DEEWR (2012) *Australian Jobs 2012* (ABS 2011 Census data).

Figure 2 illustrates how demand for qualifications is expected to change over time. It shows the current education profile for each respective occupation: across all industries and within the education and training industry. It also shows projected levels of educational attainment to 2025 by each occupation group depending on which of the four scenarios eventuates.

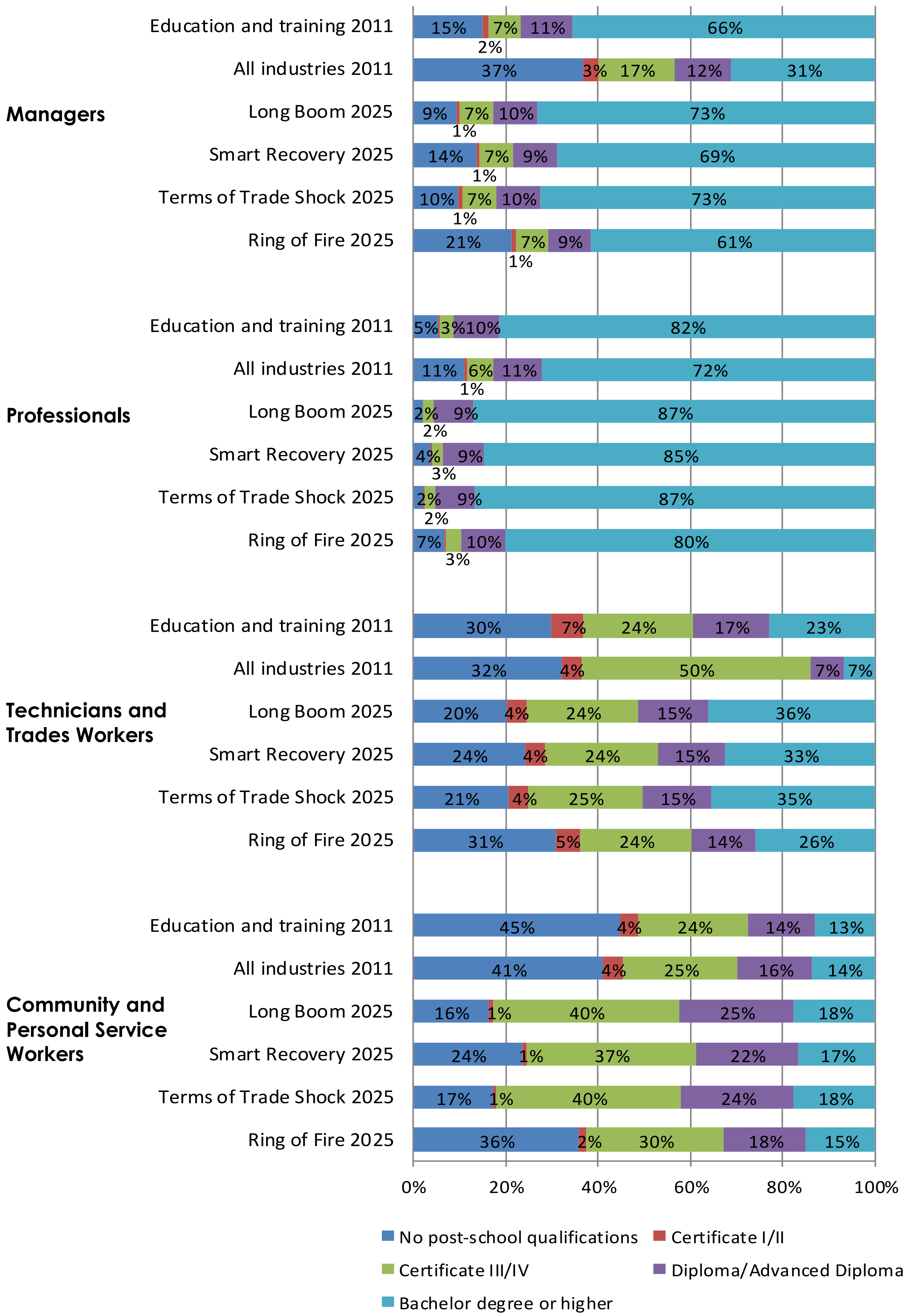
As Figure 2 shows, the managerial and professional occupations overwhelmingly hold a Bachelor degree or higher qualification, and this level of educational attainment is expected to remain the case irrespective of which scenario eventuates.

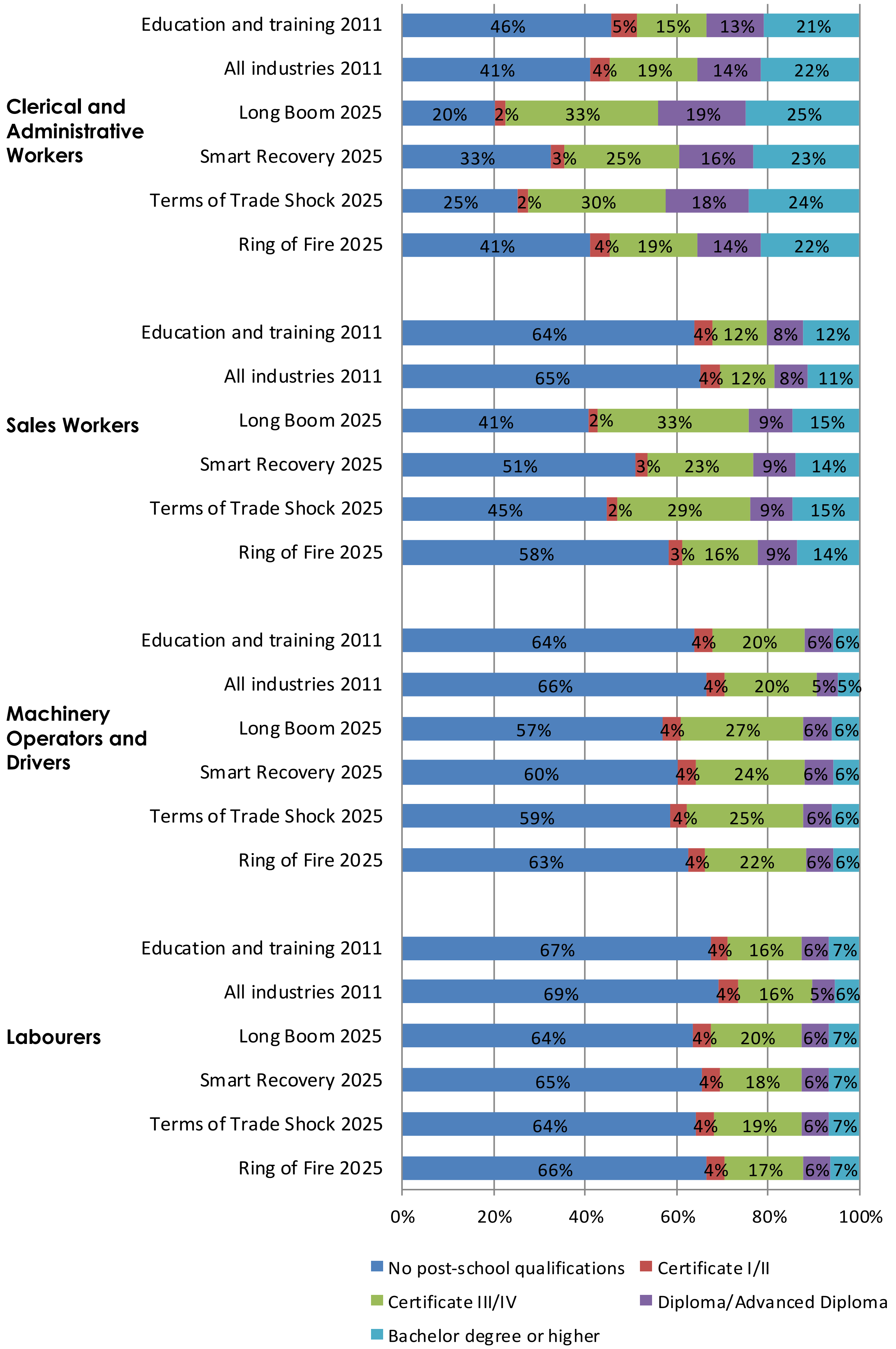
The proportion of clerical and administrative workers with no post-school qualifications is expected to more than halve under the Long Boom scenario, with most gains made at the Certificate III/IV level. Substantial increases in qualification holding are also forecast for the remaining scenarios, albeit on a lower level for Ring of Fire.

The qualification profile for occupations with lower skill levels, such as labourers, is expected to relatively stable over in the long-term with a modest increase in qualification holding forecast across all four scenarios.

It should be noted that the number of machinery operators and drivers and sales workers in the education and training industry is very small, with each occupational group accounting for less than three thousand workers. Projections for qualification holding within these occupation/industry breakdowns should therefore be treated with caution.

Figure 2 Educational attainment in the education and training industry by occupation, 2011 and projections to 2025 (%)





Source: ABS (2012) *Survey of Education and Work 2012*, cat. no. 6227.0; and DAE (2012) Unpublished data.

Specialised occupations

In *Future Focus*, the 2013 National Workforce Development Strategy, AWPA has proposed that national planning for skills and industry workforce development should focus on **specialised occupations**. Specialised occupations are defined as those 'where specialised skills, learned in formal education and training, are needed at entry level and where the impact of market failure is potentially significant for the economy and/or the community.'

Specialised occupations demonstrate these characteristics:

- long lead time—skills are highly specialised and require extended learning and preparation time over several years;
- high use—skills are deployed for the uses intended (i.e. good occupational 'fit');
- high risk—the disruption caused by the skills being in short supply is great, resulting either in bottlenecks in supply chains or imposing significant economic or community costs because an organisation cannot operate; and
- high information—the quality of information about the occupation is adequate to the task of assessing future demand and evaluating the first three criteria.

Monitoring skills supply, especially for specialised occupations, will remain a critical element in meeting our workforce needs.

Specialised occupations associated with the education and training sector include:

Health and Welfare Service Managers
School Principals
Other Education Managers
Teachers of English to Speakers of Other Languages
Early Childhood (Pre-Primary School) Teachers
Primary School Teachers
Middle School Teachers
Secondary School Teachers
Special Education Teachers
University Lecturers and Tutors

More detailed information about specialised occupations is available in *Future Focus, 2013 National Workforce Development Strategy* at http://www.awpa.gov.au.

Example workforce development initiatives

Investment in workforce development has been shown to maximise people's capabilities, lift productivity and increase workforce participation. Employee satisfaction levels and engagement also increase when enterprises make better use of their employees' skills.[5] Current workforce development initiatives in education and training include the following examples:

- **Principal Fellowships and Scholarships** provide ACT Government principals support to undertake further education, training and/or research, or to attend and contribute to conferences of international standing linked to further studies that will lead to an improvement in student learning outcomes across the ACT public education system. For further information, see www.det.act.gov.au.

- The **Inclusion and Professional Support Program Initiative** has been funded by the Australian Government to provide professional support and educational opportunities to people working in children's services in New South Wales. The program is managed by Children's Services Central - a consortium of key organisations that resource and support the children's service sector. The program aims to: promote and maintain high quality care and inclusion for all children in eligible child care services by increasing the skill level of carers and service staff in line with nationally consistent principles; and provide all children's services in New South Wales, with access to quality professional support that is relevant, appropriate and timely. For further information, see http://www.cscentral.org.au/about/index.html.

- The **Restart Teaching** is designed to support teachers who are contemplating returning to the teaching force. The program will help returning teachers understand the current curriculum frameworks, teaching and learning practices, and legislative and legal responsibilities that are central to their work with students in contemporary school settings. For further information, see http://education.qld.gov.au/staff/development/employee/teachers/restart-teaching.html

- The Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education **Language, Literature and Numeracy scholarship program** aims to develop more skilled LLN practitioners in the VET sector. It provides an incentive for individuals to enter the adult LLN field by supporting them to undertake approved study towards an adult LLN practitioner qualification. For further information, see www.innovation.gov.au.

- **Teach for Australia** is a national initiative (non-profit with public and private sector partners) aimed at on providing quality education in disadvantaged areas. It also operates as a workforce development program by emphasising opportunities for skill building and change for the participating teachers and graduates. For further information, see http://teachforaustralia.org/

[5] Skills Australia (2012) *Better use of skills, better outcomes: A research report on skills utilisation in Australia.*