

Chapter three

Education and learning

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Winner of the 2014 NSW
Young Woman of the Year.

Photographer: Jamie North



Education and learning

This chapter outlines progress for both women and men in education at all levels, including school completion, subject choice at Higher School Certificate, vocational education and training participation and outcomes, and higher education performance. Post-education indicators of early career earnings and job outcomes are also presented. This data should be read in conjunction with more comprehensive analysis of women and men's workforce experiences in chapter four.

Key findings

NSW women and girls have made substantial progress in educational attainment and achievement in the last few decades. The percentage of women with qualifications at Certificate III and above has increased by 20 percentage points since 2001, to 57.5 percent of all NSW women in 2013. This is a faster rate of growth than among men. Today, NSW women have fewer formal qualifications than men only in the 45 and older age groups.

While the educational outcomes of girls and women are positive overall, the increasing participation of girls in education is not uniform across the disciplines. Participation in trades training remains low by comparison with boys and men and is largely unchanged over 30 years. Women made up just 12 percent of students commencing a technical or trade apprenticeship or traineeship in the 12 months to September 2013.

Thirty-one percent of girls' Higher School Certificate (HSC) course completions are in science, technology, engineering and mathematics (STEM) subjects compared to 45 percent of course completions by boys. Both are low by historical standards, and the same gender divide is found at university level. Women make up the majority of all university enrolments (although men are catching up) but only one-third of all women are enrolled in STEM subjects.

Female vocational education and training (VET) graduates are less likely than their male counterparts to be working in the field in which they are qualified six months after graduating. Following university study, the salary gap for NSW men and women persists at around 9 percent or \$5,000 per year.

The gap between girls' HSC completion rates in the highest and lowest socioeconomic groups has narrowed over the last five years from 12 to 9 percentage points. However, there is a 21 percentage point gap between the likelihood of girls living in metropolitan areas completing their HSC and the chance that girls living in very remote areas will achieve this.

Education and learning topics and indicators

In this chapter, women's experiences in education and learning are reported in six areas of importance for women as they move through their lives and careers. Many align with state, national and international goals and benchmarks and some comparisons are given in the conclusion. The topics covered in this chapter relate to the State Plan Goals 1, 6 and 15.

NSW 2021 A PLAN TO MAKE NSW NUMBER ONE

Goal 1: Improve the performance of the NSW economy

Goal 6: Strengthen the NSW skill base

Goal 15: Improve education and learning outcomes for all students

The NSW Government is committed to ensuring NSW has a highly skilled workforce that meets the current and future needs of the NSW economy. The State Plan also aims to provide for an education and training system that offers all members of the community access to high quality training so they can fully participate in the workforce. Increasing the number of women in non-traditional occupations is part of this vision.

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The indicators used in this year's report are shown below. Note that data for some indicators used in previous years are not available this year. A full list of indicators from all years is in the Introduction. The most recent available data is used throughout.

Education and learning topics and indicators

Topic	Indicators
Topic 1: High school completion	Indicator 1.1: Completion rates, year 12 or equivalent Indicator 1.2: Higher School Certificate student course choice
Topic 2: Vocational education and training	Indicator 2.1: Vocational education and training participation Indicator 2.2: Qualifications at AQF Certificate III and above
Topic 3: Apprenticeships and traineeships	Indicator 3.1: Apprenticeships and traineeships Indicator 3.2: Women's participation in technical and trade training
Topic 4: Higher education	Indicator 4.1: Undergraduate students Indicator 4.2: Postgraduate students Indicator 4.3: Undergraduate field of education
Topic 5: Employment outcomes	Indicator 5.1: VET graduates working in their field of study Indicator 5.2: The graduate salary gap
Topic 6: Lifelong learning	Indicator 6.1: Work-related learning Indicator 6.2: Participation in adult and community education

Topic 1 High school completion

Earnings and employment outcomes are significantly better for people who have finished year 12 or its equivalent. This topic reports on year 12 completion and subject choice in the Higher School Certificate (HSC). The year 12 milestone is the focus of specific attention in *NSW 2021*, the State Plan, and is critical to redressing social disadvantage.

1.1 Completion rates, year 12 or equivalent

The proportion of the potential year 12 student population who achieve a NSW HSC Award

Women's status compared to men	<p>In 2012, 77 percent of girls in NSW completed year 12 compared to 67 percent of boys.</p> <p>Gender gap</p> <ul style="list-style-type: none"> • There is a 10 percentage point gap in favour of girls. • Girls are more likely than boys to complete year 12 across high and low socioeconomic deciles (Figure 3.1).
The direction of change over time	<p>HSC completion rates for both sexes have remained constant since 2007 with an average 11 percentage point gap in favour of girls.</p> <p>Since 2011, completion rates for girls have remained relatively stable decreasing by 1 percentage point (from 78 percent in 2011 to 77 percent in 2012). Completion rates for boys have remained the same for both years (67 percent) (see note).</p>

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<p>How does NSW compare?</p>	<p>The trend seen in NSW for girls to outperform boys in high school completion also exists at the national level. In 2012, there was a smaller gender gap between girls and boys in the ACT, WA and VIC (1, 6 and 7 percent respectively) than in NSW. Overall, 78 percent of Australian girls and 69 percent of Australian boys completed year 12 or equivalent in 2012.</p>
<p>Tracking subgroups of women</p>	<p>Socioeconomic status</p> <p>Girls from low and medium socioeconomic groups tend to have very similar high school completion rates. Girls from high socioeconomic groups outperformed others, but the achievement gap is shrinking. See Figure 3.1.</p> <p>In 2012, 74 percent of girls in both the low and medium socioeconomic groups had completed year 12 or equivalent.</p> <p>In the same year, girls in the highest socioeconomic group had an 83 percent completion rate (9 percentage points higher than those in the lowest group). In the past five years this gap has closed by 3 percentage points, down from 12 percentage points.</p> <p>Geographic disparities</p> <p>In 2012, girls living in metropolitan areas were far more likely to complete their HSC compared to girls living in very remote areas (78 percent compared with 57 percent, representing a 21 percentage point difference).</p> <p>Aboriginal status and cultural diversity</p> <p>Due to a lack of other data, we use 2011 Census of Population and Housing data to compare the school completion rates of women from Aboriginal, non-Aboriginal and diverse cultural backgrounds across the whole adult NSW population.</p> <p>Non-Aboriginal women have completion rates more than double that of Aboriginal women (60 percent of 20 to 64-year-olds compared with 27 percent for Aboriginal women). However, Aboriginal women's rates have been steadily improving, with each five-year age group having a higher rate of year 12 completion than the one before it. See Figure 3.2.</p> <p>Fifty-four percent of 20 to 64-year-old NSW women born in Australia had completed year 12 or equivalent in 2011. This compared to 61 percent of those born in a non-English speaking country and 65 percent of those born in an English speaking country other than Australia. Similarly, 63 percent who speak a language other than English at home completed year 12 or equivalent compared to 54 percent of women who speak English at home.</p>

Completion rates are estimated by calculating the number of students who meet the requirements of a year 12 certificate expressed as a percentage of the potential year 12 population. The potential year 12 population is an estimate of a single year age group which could have attended year 12 that year, calculated as the estimated resident population aged 15 to 19 divided by five.

2011 completion rates shown in *Women in NSW 2013* indicated that boys' completion rates had surpassed those of girls. This was an error in source data reported by the Productivity Commission, which was later revised. The corrected results, by socioeconomic status, are shown in Figure 3.1.

Note that this indicator needs to be considered alongside Indicator 3.1, which shows that more boys than girls enter vocational education and training.

Year collected: 2012 and previous years.

Data source: Productivity Commission (2014) *Report on Government Services 2014*.

More information is available: www.pc.gov.au

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Figure 3.1 Completion rates to year 12 by socioeconomic status, NSW, 2007–12

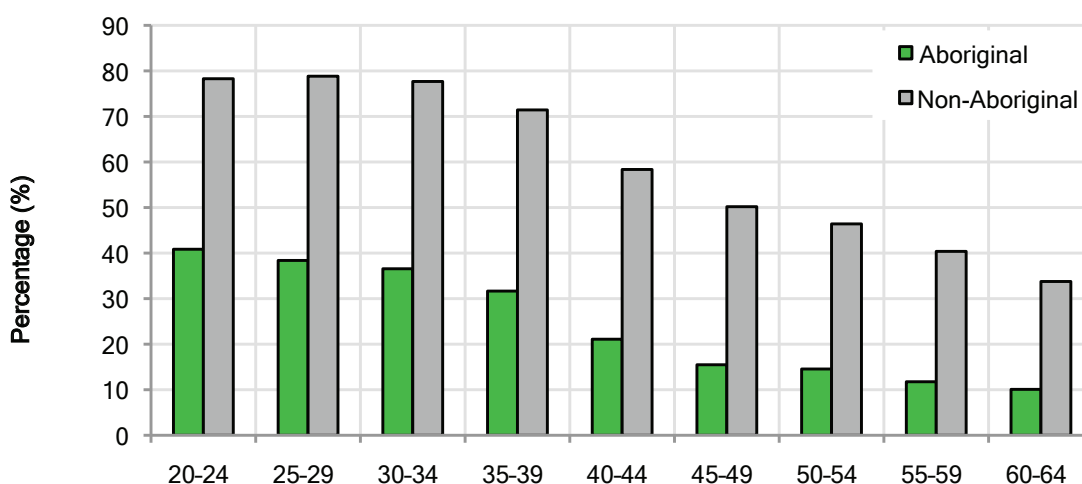


Note: Low socioeconomic status (SES) is defined here as the average of the three lowest deciles, and high socioeconomic status is the average of the three highest deciles. The ABS Postal Area Index of Relative Socioeconomic Disadvantage has been used to calculate SES on the basis of student home addresses.

Population: The estimated potential population of NSW students.

Data source: Productivity Commission (2014) *Report on Government Services 2014*.

Figure 3.2 Year 12 completion rates by age, Aboriginal and non-Aboriginal women, NSW, 2011



Population: All women residing in NSW aged 20 to 64.

Data source: ABS (2011) *Census of Population and Housing*.

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1.2 Higher School Certificate student course choice

HSC completions in science, technology, engineering and mathematics subjects

Women's status compared to men	<p>In 2013, 31 percent of course completions by girls at HSC level were in the Key Learning Areas (KLAs) of science, technology, engineering and mathematics (STEM subjects). This compares to 45 percent of course completions by boys.</p> <p>Gender gap</p> <ul style="list-style-type: none">Girls are 14 percentage points less likely than boys to complete STEM courses at HSC level.
The direction of change over time	<p>Since the publication of the first <i>Women in NSW</i> report in 2012, there has been little change in girls' or boys' STEM completion rates.</p> <p>Girls' STEM completions have dropped just under 2 percentage points from 33.3 percent in 2011 to 31.4 percent in 2013. In comparison, boys' STEM completions have increased by 0.8 percentage points from 44.3 in 2011 to 45.1 in 2013.</p> <p>The largest reduction in girls' STEM completions are in the technology and engineering fields. There were 378 fewer completions in Information Processes and Technology in 2013 than in 2011, 169 fewer in Design and Technology, 168 fewer in Textiles and Design and 103 in Information Technology. See Table 3.1.</p> <p>Girls' only significant increase in technology and engineering subjects was in Industrial Technology with 166 additional completions in 2013 compared to 2011.</p> <p>Of the 21 KLAs, girls have seen reductions across 11 areas whereas boys have had reductions across eight.</p>

There were 21 separate HSC courses within the STEM KLAs in NSW in 2012 (see Table 3.1). Note that this year we have included VET subjects and revised last year's figures accordingly. The data captures students who completed courses; enrolment data is not readily available.

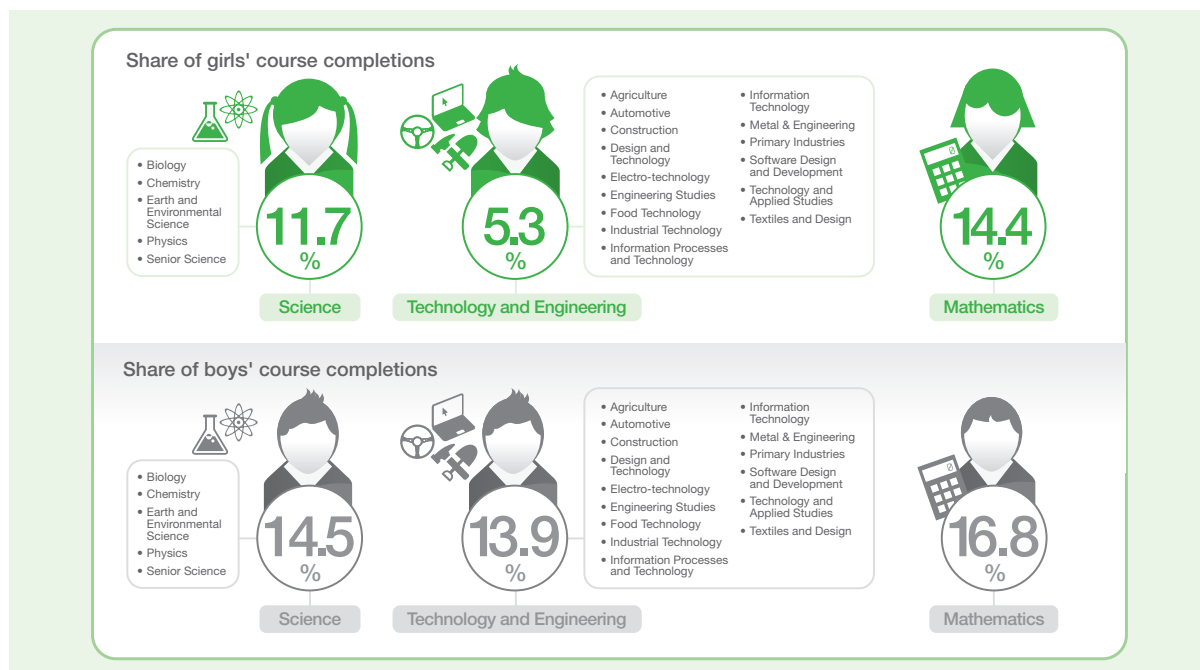
Year collected: 2012.

Data source: NSW Board of Studies, unpublished data.

More information is available: www.boardofstudies.nsw.edu.au/

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Figure 3.3 Science, technology, engineering and mathematics, HSC completions, NSW, 2013



Population: NSW Higher School Certificate students.
Data source: NSW Board of Studies, unpublished data.

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Table 3.1 Science, technology, engineering and mathematics, HSC completions, NSW, 2013

HSC Key Learning Area	Share of girls' course completions %	Share of boys' course completions %
Total STEM courses (130,676)	31.4	45.1
Science (44,769)	11.7	14.5
Biology (16,852)	5.8	4.0
Chemistry (11,032)	2.8	3.6
Earth and Environmental Science (1,399)	0.4	0.4
Physics (9,562)	1.2	4.5
Senior Science (5,924)	1.5	1.9
Technology and Engineering (32,450)	5.3	13.9
Agriculture (1,416)	0.4	0.4
Automotive (864)	0.0	0.5
Construction (3,507)	0.0	2.1
Design and Technology (3,209)	0.8	1.1
Electrotechnology (508)	0.0	0.3
Engineering Studies (2,049)	0.0	1.2
Food Technology (3,802)	1.6	0.6
Industrial Technology (5,480)	0.3	2.9
Information Processes and Technology (3,033)	0.4	1.4
Information Technology (1,657)	0.2	0.8
Metal and Engineering (1,705)	0.0	1.0
Primary Industries (976)	0.2	0.4
Software Design and Development (1,608)	0.1	0.9
Technology and Applied Studies (478)	0.1	0.2
Textiles and Design (2,158)	1.2	0.0
Mathematics (53,457)	14.4	16.8
Other Non-STEM (144,712)	48.7	34.9
English (68538)	19.8	20.0
Total course completions (343,926)	100.0	100.0

Note: The figures are for STEM course completions as a percentage of total course completions for HSC units of study. English is shown separately because it is the largest and only compulsory subject.

Population: NSW Higher School Certificate students.

Data source: NSW Board of Studies, unpublished data.

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Topic 2 Vocational education and training

Vocational education and training (VET) provides accredited employment-related skills across a wide range of vocations. The indicators in this section report on participation in VET courses and attainment of VET qualifications.

2.1 Vocational education and training participation

Participation in a VET course by people aged 15 to 64 years

Women's status compared to men	<p>9.8 percent of women aged 15 to 64 years in NSW participated in government-funded vocational education and training (VET) in 2012 compared to 8.9 percent of men.</p> <p>Gender gap</p> <ul style="list-style-type: none">22,400 more women participated in a government-funded VET course in 2012 than men – a gender gap of nearly 1 percentage point.
The direction of change over time	<p>In NSW, the participation rates for both women and men aged 15 to 64 years have remained relatively steady from 2008 to 2012. Rates have ranged from 9.4 to 9.8 percent for women and 8.7 to 9.0 percent for men.</p>
How does NSW compare?	<p>VET participation rates for NSW women are similar to the national average. In the past five years, the participation rate for NSW men has moved from being above the national average to being below (by 1.2 percentage points in 2012). In 2012, Victoria, South Australia and the Northern Territory all had higher participation rates for both women and men than NSW.</p>
Tracking subgroups of women	<p>There is considerable variation among subgroups of women. Aboriginal women comprised 5.4 percent of female VET students in 2012 compared to 2.5 percent of the NSW female population. Women who were born overseas in a non-English speaking country were under-represented on a population share basis. This group comprised just over 18 percent of VET students compared to 25 percent of the NSW population. See Figure 3.4.</p>

Indicator 2.1 reports on the number and rate of women and men's participation in government-funded VET in NSW, in courses at all Australian Qualifications Framework (AQF) levels. Government-funded VET includes students funded by the Commonwealth and NSW governments and does not include students paying fee-for-service to private registered training organisations (RTOs) or school-based VET students. The rate is based on the number of students as a proportion of the population aged 15 to 64 years, and refers to the highest course undertaken by the student. In 2012, four in every five VET students were undertaking government-funded VET.

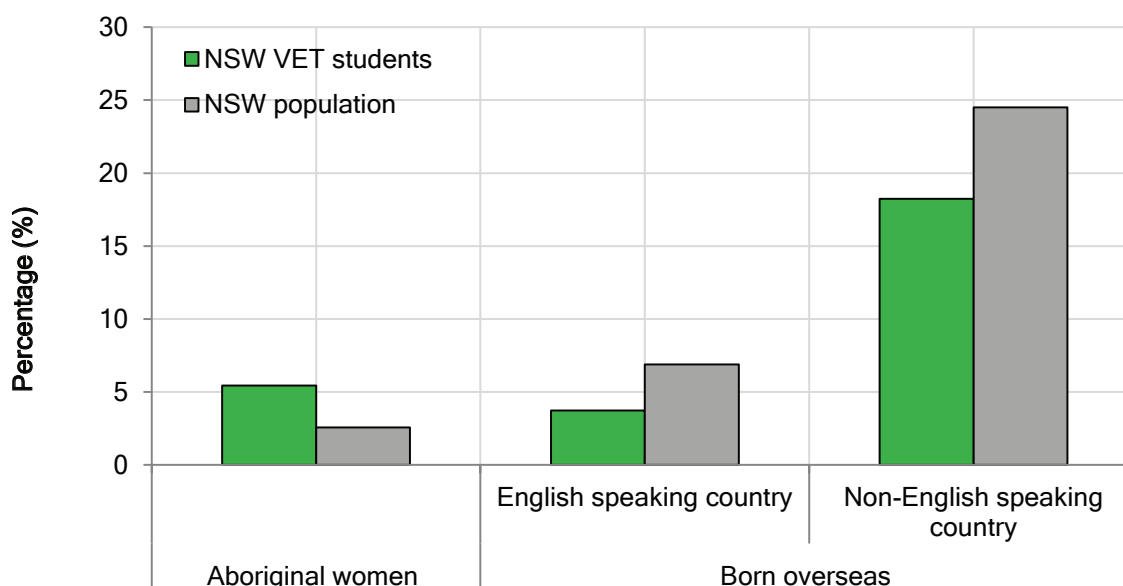
Year collected: 2012.

Data source: Productivity Commission (2014) *Report on Government Services 2014*, Chapter 5.

More information is available: www.pc.gov.au

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Figure 3.4 Women participating in VET courses compared with NSW population, 2012



Note: This graph compares the percentage of students within VET courses that belong to the individual subgroups with the total percentage of that subgroup within NSW. For example, 5.4 percent of female VET students identify as Aboriginal, whereas only 2.5 percent of women in NSW identify as Aboriginal. This shows that women who identify as Aboriginal are over-represented in VET courses.

Population: Students who gave NSW as their usual place of residence.

Data source: NCVET, Students and Courses Collection. Population figures are taken from the ABS (2011) *Census of Population and Housing*.

2.2 Qualifications at Australian Qualifications Framework (AQF) Certificate III and above

Qualifications at AQF Certificate III and above held by 20 to 64-year-old women and men

Women's status compared to men	<p>In 2013, 57.5 percent of women aged 20 to 64 years had attained qualifications at AQF Certificate III and above. This compares to 58.7 percent of men.</p> <p>Gender gap</p> <ul style="list-style-type: none"> Among the prime working-aged population, the gap in women's and men's qualifications at Certificate III and above is 1.2 percentage points in men's favour.
The direction of change over time	<p>Completion rates for both women and men steadily increased from 2001 to 2012 before falling slightly for both sexes during the year to May 2013 (see Figure 3.5).</p> <p>Women's attainment rates decreased less than men's (a 1.2 percentage point decrease in the proportion of women with qualifications at AQF Certificate III and above compared to a 3.6 point decrease for men).</p> <p>As a result the gender gap reduced but men remain slightly more qualified.</p>

Indicator 2.2 describes gender differences in a key long-term national performance measure, the holding of Certificate III, which is regarded as a minimum non-school qualification. This indicator is regarded as a useful stock measure for the skills base of the workforce (noting that skills are also acquired through informal work and life experience).

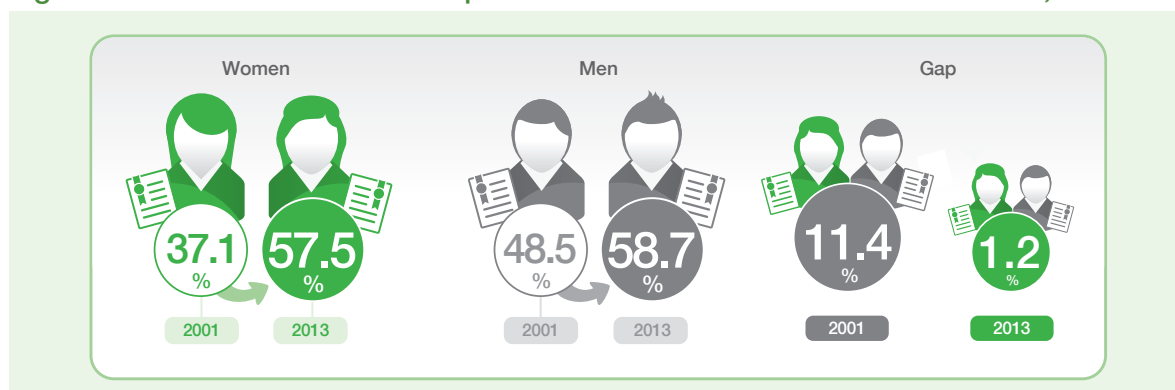
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Year collected: 2013 and previous years.

Data source: ABS *Education and Work, Australia, May 2013* and previous years. Cat no. 6227.0, unpublished data.

More information is available: www.abs.gov.au

Figure 3.5 Women and men with qualifications at AQF Certificate III or above, 2001–13



Population: NSW residents aged 20 to 64.

Data source: ABS (2013 and previous years) *Education and Work, Australia*. Cat no. 6227.0.

Topic 3 Apprenticeships and traineeships

Apprenticeships and traineeships are distinctive among VET courses in that people undertaking them are contracted to an employer for an established period. They typically result in qualifications that are considered to be the minimum requirements for an occupation, and may be specified in legislation or industrial instruments.

The number of apprentices and trainees of both sexes has been increasing in NSW in recent years. This topic looks at the comparative rates of women and men commencing and completing apprenticeships and traineeships, and then in more detail at technical and trade apprenticeships and traineeships.

3.1 Apprenticeships and traineeships

Apprenticeship and traineeship commencements and completions

Women's status compared to men	<p>26,575 women in NSW commenced an apprenticeship or traineeship in the 12 months to June 2013 compared with 37,757 men.</p> <p>29,457 women and 32,086 men completed an apprenticeship or traineeship in NSW in the same period.</p> <p>Women therefore accounted for 41 percent of commencements and 48 percent of completions in an apprenticeship or traineeship in this timeframe. See Figures 3.6 and 3.7.</p> <p>Gender gaps</p> <ul style="list-style-type: none"> 11,182 fewer women than men commenced apprenticeships and traineeships in NSW in the 12 months to June 2013. This is a 17 percentage point gap between women and men. 2,629 fewer women than men completed apprenticeships and traineeships in NSW in the 12 months to June 2013. This is a 4 percentage point gap between women and men.
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<p>The direction of change over time</p>	<p>The gap between women and men's apprenticeship and traineeship commencements and completions has decreased dramatically since 1995. In the year ended June 1995, there were nearly three times as many men as women commencing an apprenticeship or traineeship. In recent years this gap has closed and had nearly disappeared in 2012 with women accounting for 46 percent of commencements. However, in 2013 this gap started to increase again returning to levels not seen since 2007 (41 percent). See Figure 3.6.</p> <p>This trend is not seen in completion rates as NSW women are more likely to complete courses than men. Further, any impact that a reduction in women's share of commencements has on completions may not be immediately seen. Since 1995, the gap between women and men in their share of completions has consistently decreased. In 1995, the gap was similar to commencing students, with men nearly three times more likely than women to complete an apprenticeship or traineeship. In 2013, the gap had closed with women accounting for 48 percent of all apprenticeship and traineeship completions. See Figure 3.7.</p>
<p>How does NSW compare?</p>	<p>In the year ended June 2013, NSW had a slightly higher proportion of women commencing apprenticeships and traineeships than in the nation as a whole (41 percent compared to 40 percent). As can be seen in Figure 3.6, NSW women's performance above the national average started in the mid 2000s. Prior to that, it was below the national average for many years. The slight decrease in women's share between 2012 and 2013 is mirrored at the national level.</p> <p>Similarly, in the year ended June 2013, NSW had a slightly higher proportion of women completing apprenticeships and traineeships compared to Australia as a whole (48 percent compared to 46 percent). NSW women's performance was mostly below the national average until 2009. The slight increase in women's share of completions over the year to June 2013 is similar to the pattern for Australia. See Figure 3.7.</p>
<p>Tracking subgroups of women</p>	<p>Aboriginal women's representation in apprenticeship and traineeship commencements has steadily increased in the past 10 years from 2.7 percent in 2004 to 5.5 percent in 2013. Forty-four percent of Aboriginal people who commenced a traineeship or apprenticeship in 2013 were women, which is more than among the non-Aboriginal population (41 percent).</p> <p>Aboriginal women have a slightly lower share of women's apprenticeship and traineeship completions, only accounting for 3.2 percent in 2013. Nevertheless, within the total Aboriginal population, women accounted for 51 percent of completions in 2013.</p>

Apprenticeships and traineeships differ in that apprenticeships are longer, at three to four years, and are generally found within traditional trade occupations, while traineeships are shorter, at one to two years, and are found across a broader range of occupations.

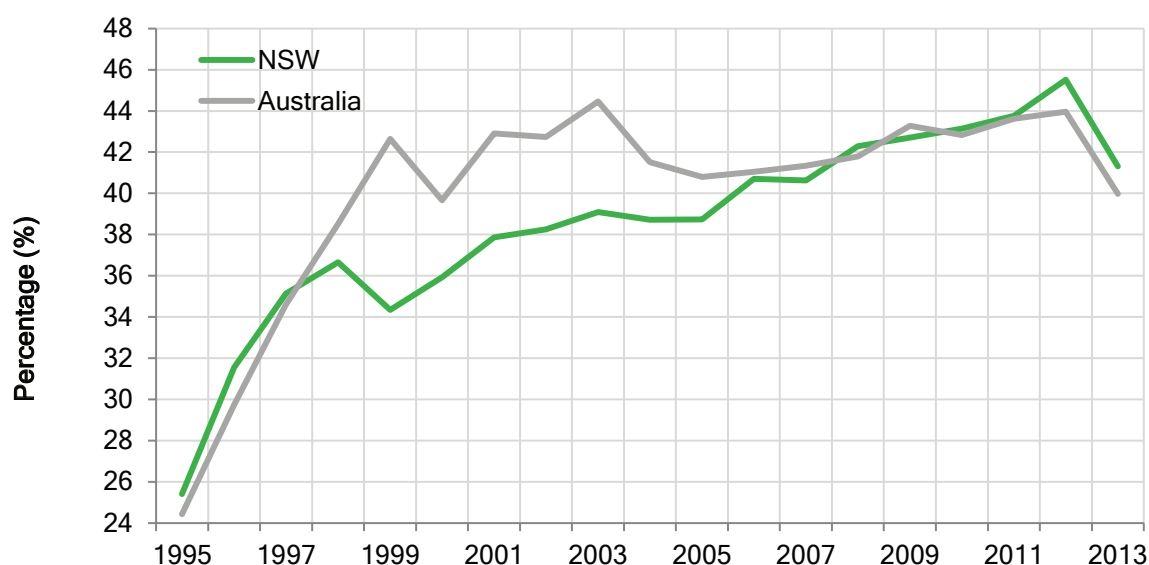
Year collected: 2012–13.

Data source: NCVER, Apprentices and Trainees Collection.

More information is available: www.ncver.edu.au

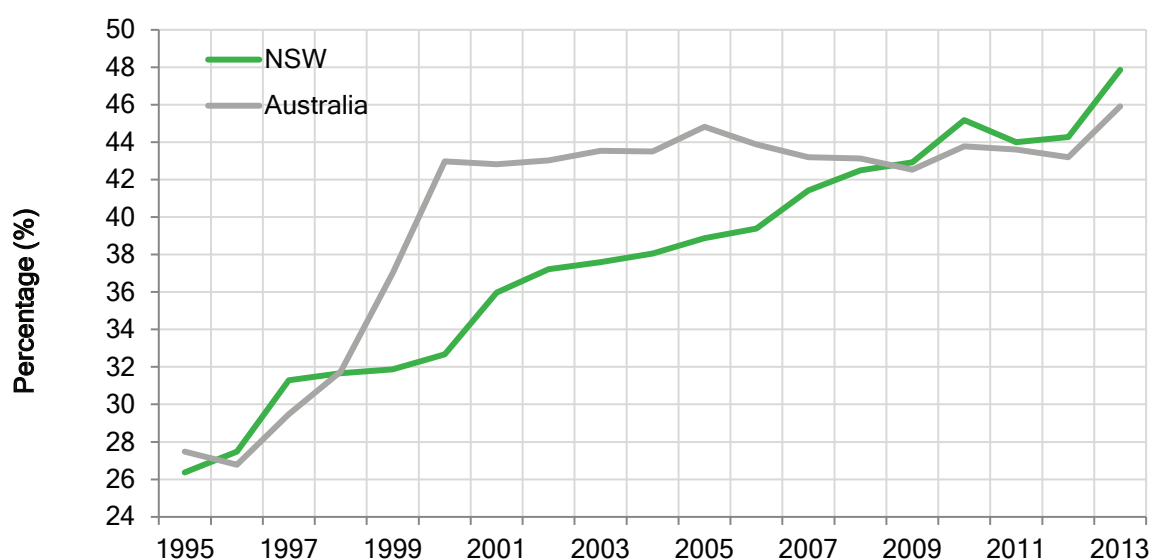
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Figure 3.6 Women's share of apprenticeships and traineeship commencements, NSW and Australia, 1995–2013



Population: NSW residents who commenced an apprenticeship or traineeship between 1995 and 2013
Data source: NCVER, Apprentices and Trainees Collection.

Figure 3.7 Women's share of apprenticeship and traineeship completions, NSW and Australia, 1995–2013



Population: NSW residents who completed an apprenticeship or traineeship between 1995 and 2013.
Data source: NCVER, Apprentices and Trainees Collection.

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3.2 Women in technical and trade training

Participation in apprenticeships and traineeships in technical and trade occupations

Women's status compared to men	<p>In the 12 months to September 2013, 3,106 women commenced an apprenticeship or traineeship in a technical or trade occupation. This represents 12 percent of total technical and trade apprenticeships and traineeship commencements.</p> <p>In the same period there were 2,893 women who completed an apprenticeship or traineeship in a technical or trade occupation. This represents 19 percent of total technical and trade apprenticeship and traineeship completions.</p> <p>Gender gap</p> <ul style="list-style-type: none"> • In 2013, there were nearly 19,000 fewer women than men who commenced an apprenticeship or traineeship in a technical or trade occupation. • Some 9,500 fewer women than men completed an apprenticeship or traineeship in a technical or trade occupation.
The direction of change over time	<p>Women's share of apprenticeship or traineeship commencements in a technical or trade occupation reached an all-time low of 12 percent in the 12 months to September 2013. In recent years their share fluctuated, with a high point of 18 percent in 2009.</p> <p>In contrast, women have fared much better in technical and trade completions with results from 1995 to 2013 showing an upward trend. See Figure 3.8.</p> <p>Women's share of completions has risen from a low of 11 percent in 1995 to a high point of 19 percent in the 12 months to September 2013.</p>
How does NSW compare?	<p>From 2008 to 2012 NSW had a slightly higher level of female representation in technical and trade apprenticeship and traineeship commencements than Australia as a whole (on average 1 percentage point higher).</p> <p>In the 12 months to September 2013, women's representation in NSW dropped 5 percentage points and Australia's dropped 1 point, so that Australia's performance was slightly higher than NSW's (15 percent compared to 12 percent).</p> <p>NSW has higher completion rates for women than Australia as a whole. Australian women's share of completions has been below that of NSW for the past eight years (on average 2 percentage points lower). In 2013 this gap increased with NSW women representing 19 percent of technical and trade apprenticeship and traineeship completions compared to 15 percent Australia-wide.</p>
Tracking subgroups of women	<p>In the 12 months to September 2013, 118 Aboriginal women commenced an apprenticeship or traineeship in a technical or trade occupation. This represents 11 percent of Aboriginal technical and trade apprenticeship and traineeship commencements.</p> <p>In the same period, 64 Aboriginal women completed an apprenticeship or traineeship in a technical or trade occupation. This represents 15 percent of Aboriginal technical and trade apprenticeship and traineeship completions.</p>

Trades' apprentices and trainees are people whose apprenticeship or traineeship was in a Major Group 3 (Technicians and Trades Workers) occupation in the Australia and New Zealand Standard Classification

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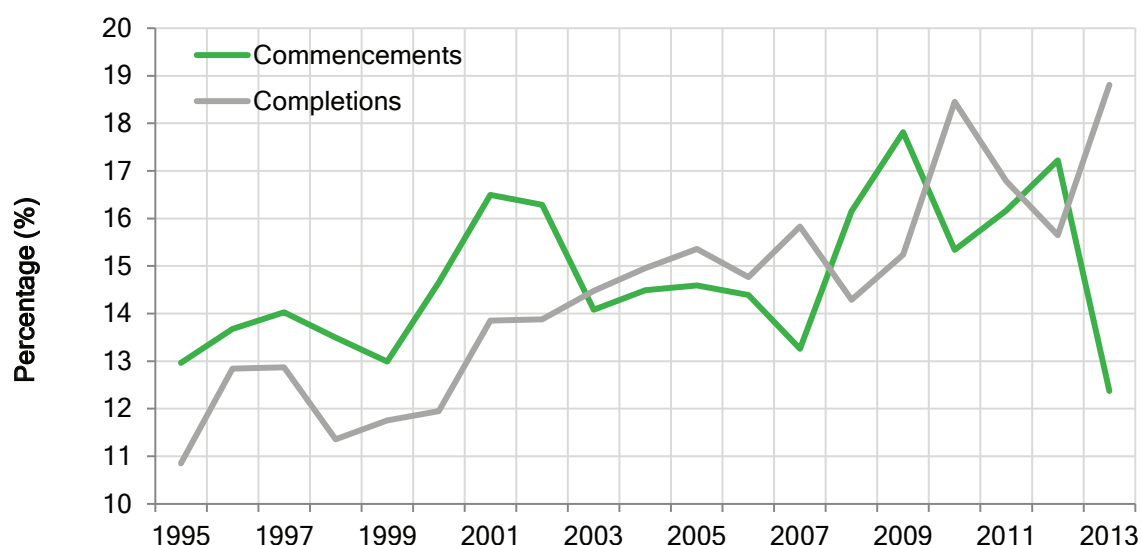
of Occupations 2006. This group includes: engineering, ICT and science technicians, automotive and engineering trades workers, construction trades workers, electrotechnology and telecommunications trades workers, food trades workers, skilled animal and horticultural workers and other technicians and trades workers.

Year collected: 12 months to September quarter 2013 and previous years.

Data source: NCVER, Apprentices and Trainees Collection.

More information is available: www.ncver.edu.au

Figure 3.8 Women's share of apprenticeship and traineeship commencements and completions in technical and trade occupations, NSW, 1995–2013



Population: NSW residents who commenced or completed an apprenticeship or traineeship in a technical or trade occupation between 1995 and 2013.

Data source: NCVER, Apprentices and Trainees Collection.

Topic 4 Higher education

In Australia, the term 'higher education' generally refers to education at degree level and above. Formally, higher education courses are those leading to the award of undergraduate qualifications and postgraduate qualifications (defined below). Almost all higher education in Australia is offered by universities. This topic looks at the number of female and male students at undergraduate and postgraduate levels and at undergraduate student subject choice. Indicators 4.1 and 4.2 provide figures on people commencing first year courses in 2012 as well as the total number of enrolments in all undergraduate years in 2012.

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4.1 Undergraduate students

Students participating in higher education at the undergraduate level

Women's status compared to men	<p>In 2012, 47,099 women commenced an undergraduate course compared to 35,077 men. For the same period, a total of 129,089 women enrolled in undergraduate courses compared to 98,271 men.</p> <p>Gender gap</p> <ul style="list-style-type: none"> Women made up 57 percent of total undergraduate course commencements in 2012 compared to 43 percent of men, representing a 14 percentage point difference. The gender gap in total enrolments was also 14 percent. In 2012, women were 1.3 times more likely than men to commence and enrol in all undergraduate courses.
The direction of change over time	<p>The number of undergraduate students of both sexes in NSW has grown significantly over the last decade, more quickly for men than for women. The number of women commencing an undergraduate course increased by 46 percent since 2001 compared to an increase of 54 percent in the number of men.</p> <p>Nevertheless, more women than men overall commenced undergraduate courses throughout the 2000s. The gap has been closing gradually since 2001 when women made up 59 percent of people commencing an undergraduate course. See Figure 3.9.</p>
How does NSW compare?	<p>Nationally, as in NSW, more women commenced an undergraduate course than men. At 12 percentage points, the gap between women and men is slightly less nationally than in NSW.</p> <p>Out of all Australian states and territories, NSW has the third smallest percentage point gap (14.6) between women and men, with the ACT and Victoria being the only two states or territories with a smaller gender gap (11.8 and 14.4 percentage points).</p>
Tracking subgroups of women	<p>Aboriginal women account for 1.8 percent of all women's undergraduate enrolments. As they make up 2.5 percent of the NSW population, they are slightly under-represented.</p> <p>Comparatively, Aboriginal men account for 1.2 percent of all men's enrolments.</p>

This indicator reports on all domestic students commencing in or enrolled in undergraduate courses in Australia who in 2012 gave NSW as their state of permanent residence. (Undergraduate qualifications are associate and bachelor's degrees and some advanced diplomas and diplomas.)

Year collected: 2012 and proceeding years.

Data source: Department of Industry, Higher Education Statistics Collection (Student Collection), unpublished data. More information is available: www.innovation.gov.au/highereducation

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Table 3.2 Women's share of undergraduate and postgraduate course commencements, NSW, 2012

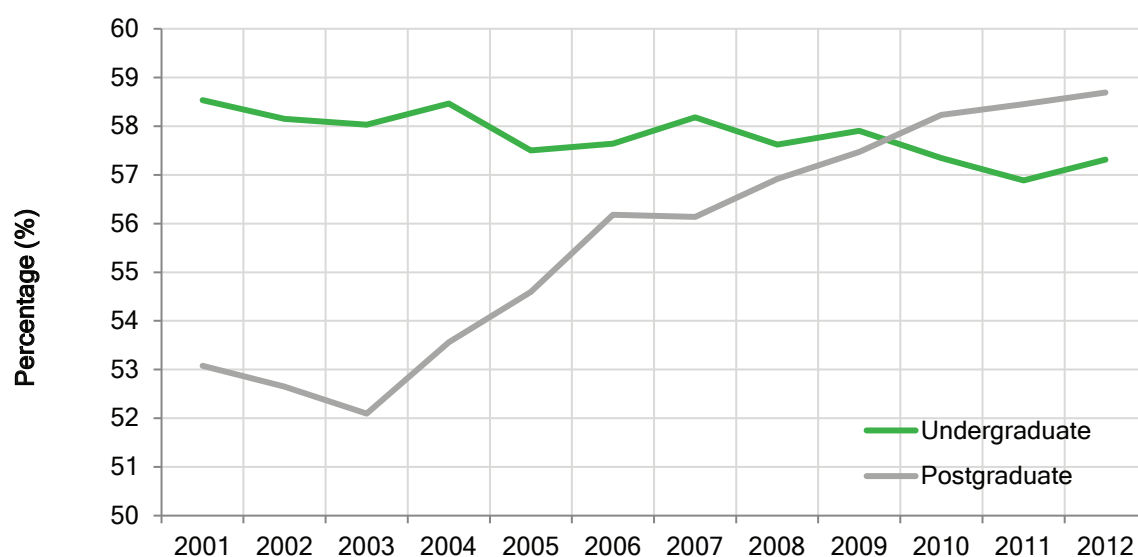
	NSW %	Australia %
Total undergraduate	57	56
Bachelor's Graduate Entry	59	59
Bachelor's Honours	62	62
Bachelor's Pass	58	57
Associate Degree	39	39
Advanced Diploma (AQF)	48	48
Diploma (AQF)	45	47
Other undergraduate award courses	83	50
Total postgraduate	59	56
Doctorate by Research	55	51
Doctorate by Coursework	56	53
Master's by Research	52	52
Master's by Coursework	59	55
Postgrad. Qual/Prelim.	39	51
Grad.(Post) Dip. – new area	61	61
Grad.(Post) Dip. – ext area	60	65
Graduate Certificate	59	59

Population: NSW residents who enrolled in a higher education course in 2012.

Data source: Department of Industry, Higher Education Statistics Collection, (Student Collection), unpublished data.

Explanation of the listed qualifications can be found at www.aqf.edu.au

Figure 3.9 Women's share of higher education course commencements, NSW, 2001–12



Population: NSW residents who enrolled in a higher education course between 2001 and 2012.

Data source: Department of Industry, Higher Education Statistics Collection, (Student Collection), unpublished data.

Education and learning

4.2 Postgraduate students

Students participating in higher education at the postgraduate level

Women's status compared to men	<p>In 2012, there were 18,878 women who commenced a postgraduate course compared to 13,286 men. In the same year, a total of 40,937 women were enrolled in postgraduate courses compared to 30,401 men.</p> <p>Gender gap</p> <ul style="list-style-type: none"> 59 percent of women commenced a postgraduate course compared to 41 percent of men, representing an 18 percentage point gap in favour of women. More women than men were enrolled in a postgraduate course (57 percent of women compared to 43 percent of men), representing a 14 percentage point gap in favour of women. In 2012, women were 1.4 times more likely than men to commence a postgraduate course and 1.3 times more likely than men to be enrolled in a postgraduate course.
The direction of change over time	<p>The postgraduate gender gap has been widening as a result of substantial increases in the number of women participating in postgraduate studies. The number of women commencing a postgraduate course has increased by 70 percent since 2001 compared to an increase of 35 percent in the number of men.</p> <p>The gap between women and men commencing postgraduate courses has increased by 12 percentage points since 2001. Women are particularly likely to be enrolled in Graduate Diplomas and Master by Coursework degrees. See Table 3.2.</p>
How does NSW compare?	<p>Similar to undergraduate studies, women make up the majority of postgraduate commencements nationally. Again, the gap between women and men is greater in NSW. In 2012, there were 34 percent more women than men throughout Australia who commenced a postgraduate course (13 percentage points lower than in NSW).</p> <p>Of all Australian states and territories, NSW has the third smallest percentage point gap in the number of commencements (14.6) between women and men. The ACT and Victoria are the only two states or territories with a smaller gender gap (11.8 and 14.4 percentage points respectively).</p>
Tracking subgroups of women	<p>Aboriginal women account for 1.1 percent of NSW women's postgraduate enrolments, below their representation in the population (2.5 percent). Comparatively, Aboriginal men account for 0.8 percent of all men's enrolments.</p>

This indicator reports on all domestic students commencing in or enrolled in postgraduate courses in Australia who in 2012 gave NSW as their state of permanent residence. Postgraduate qualifications include Graduate Certificate, Graduate Diploma, master and doctoral degrees by research and coursework.

Year collected: 2012 and proceeding years.

Data source: Department of Industry, Higher Education Statistics Collection (Student Collection), unpublished data.

More information is available: www.innovation.gov.au/highereducation

Education and learning

4.3 Undergraduate field of education

Undergraduate enrolments in science, technology, engineering and mathematics (STEM) subjects

Women's status compared to men	<p>In 2012, 32 percent of women enrolled in an undergraduate course enrolled in a STEM field. This compares to 43 percent of men.</p> <p>Gender gap</p> <ul style="list-style-type: none"> Women are 11 percentage points less likely than men to enrol in undergraduate STEM courses at university.
The direction of change over time	<p>While the percentage of women enrolling in STEM courses has remained fairly constant (between 31 and 33 percent) between 2003 and 2012, the actual number of STEM enrolments for women increased by 29,631 over the period.</p> <p>By comparison, STEM enrolments for men increased by only 23,982, so that the percentage of men studying STEM courses fell from 46 to 43 percent (see Figure 3.10).</p> <p>While a higher proportion of men study STEM courses, women make up nearly half of total STEM enrolments, an increase of nearly 2 percentage points since 2002. This is because numerically more women than men are undergraduate students (see Indicator 4.1).</p>
How does NSW compare?	<p>NSW women are 3 percentage points below the all-Australia average (of 35 percent) in terms of women's enrolment in undergraduate STEM courses.</p> <p>NSW men are also below Australian men (43 percent compared to 45 percent). The Australiawide gender gap is also smaller: 9 percentage points compared to 11 in NSW.</p>
Tracking subgroups of women	<p>In 2012, 31 percent of Aboriginal women enrolled in an undergraduate course in a STEM field. This compares to 38 percent of Aboriginal men.</p> <p>Aboriginal women's STEM enrolments are only 1 percentage point below all women's, whereas Aboriginal men's STEM enrolments are 5 percentage points below all men's enrolments.</p> <p>21 percent of Aboriginal women were enrolled in health-related fields of higher education in 2012, of which Nursing was the largest.</p>

STEM enrolments for this indicator include enrolments by domestic students in several fields of education which are listed in Table 3.3. Behavioural science is considered a STEM subject despite falling within the Society and Culture study area. Where students undertake double degrees, these are counted as two enrolments.

While women are less likely to choose STEM courses than men, the student body of all STEM fields combined is nearly 50 percent women due to there being more women than men studying at the undergraduate level.

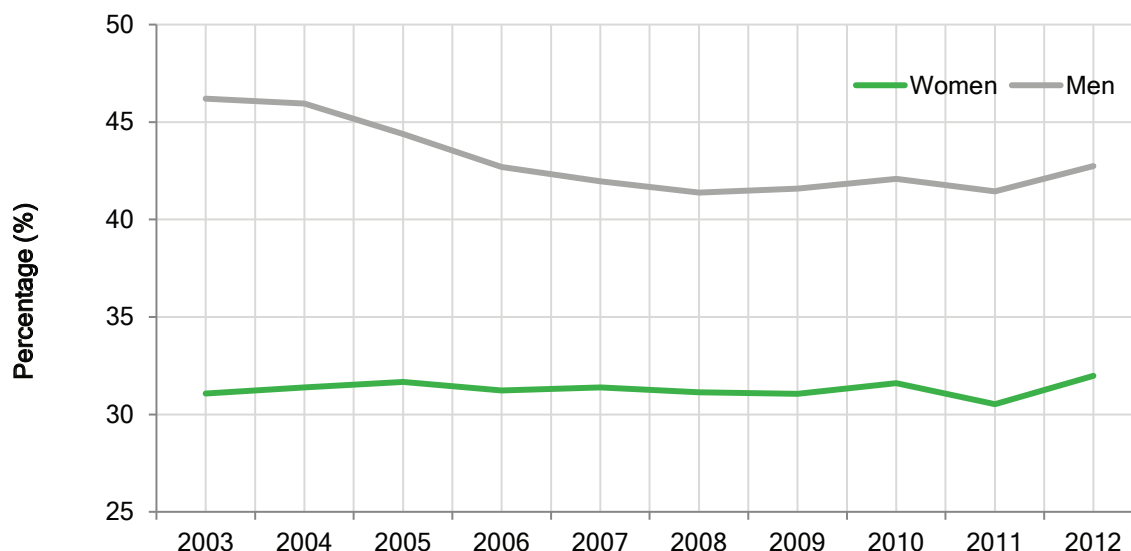
Year collected: 2012.

Data source: Department of Industry, Higher Education Statistics Collection (Student Collection), unpublished data.

More information is available: www.innovation.gov.au/highereducation

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Figure 3.10 Undergraduate STEM enrolments by sex, NSW, 2003–12



Note: STEM fields include science, technology, engineering and mathematics subjects.
 Population: Domestic NSW residents who enrolled in an undergraduate course in 2011 and previous years.
 Data source: Department of Industry, Higher Education Statistics Collection (Student Collection), unpublished data.

Table 3.3 Undergraduate STEM enrolments, NSW, 2012

	Share of women's enrolments	Share of men's enrolments
Natural and physical sciences	7.3	9.6
Natural and physical sciences	2.1	3.0
Mathematical sciences	0.2	0.6
Physics and astronomy	0.0	0.1
Chemical sciences	0.1	0.1
Earth sciences	0.1	0.2
Biological sciences	1.6	1.7
Other natural and physical sciences	3.3	3.9
Information Technology	0.7	5.2
Information technology	0.1	0.5
Computer science	0.2	1.4
Information systems	0.2	1.9
Other Information technology	0.2	1.4
Engineering and related technologies	1.5	12.1
Engineering and related technologies	0.3	3.5
Manufacturing engineering and technology	0.0	0.0
Process and resources engineering	0.2	1.0
Automotive engineering and technology	0.0	0.0
Mechanical and industrial engineering and technology	0.2	1.4
Civil engineering	0.3	2.0

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	Share of women's enrolments	Share of men's enrolments
Geomatic engineering	0.0	0.1
Electrical and electronic engineering and technology	0.1	1.4
Aerospace engineering and technology	0.0	0.4
Maritime engineering and technology	0.0	0.1
Other engineering and related technologies	0.3	2.3
Architecture and building	1.4	3.4
Architecture and urban environment	1.2	1.5
Building	0.1	1.9
Agriculture, environmental and related studies	1.1	1.4
Agriculture, environmental and related studies	0.0	0.0
Agriculture	0.4	0.4
Horticulture and viticulture	0.0	0.0
Forestry studies	0.0	0.0
Environmental studies	0.6	0.9
Other agriculture, environmental and related studies	0.0	0.1
Health	15.9	9.0
Health	0.4	0.2
Medical studies	1.7	2.0
Nursing	6.8	1.5
Pharmacy	0.6	0.4
Dental studies	0.3	0.3
Optical science	0.1	0.1
Veterinary studies	0.5	0.2
Public health	0.2	0.1
Radiography	0.4	0.3
Rehabilitation therapies	2.0	1.0
Complementary therapies	0.3	0.1
Other health	2.5	2.6
Society and culture	4.2	2.0
Behavioural science	4.2	2.0
Total STEM subjects	32.0	42.7
Total non-STEM subjects	68.0	57.3
Total course enrolments	100	100

Note: STEM enrolments are enrolments by domestic students in science, technology, engineering and mathematics fields of education. Behavioural science is considered a STEM subject despite falling within the Society and Culture study area.

Population: Domestic NSW students who gave NSW as their permanent home location and who enrolled in an undergraduate course in 2012.

Data source: Department of Industry, Higher Education Statistics Collection (Student Collection), unpublished data.

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Topic 5 Employment outcomes

The completion of formal education may signify the beginning of a woman or man's career, a change in career path or simply a formalisation of a set of skills. For those who have completed a formal education the aim is usually employment in a job or at a level commensurate with their studies. This topic focuses on employment outcomes after completion of study. Indicator 5.1 refers to VET graduates and whether or not they are working in the same occupation as their training. Indicator 5.2 focuses on the graduate salary gap between women and men who have finished a bachelor degree.

5.1 VET graduates working in their field of study

Vocational education and training (VET) graduates working in the field for which they are qualified

Women's status compared to men	<p>In 2013, 28 percent of NSW women aged 20 to 64, who hold VET qualifications, were working in the same occupation as their training. This compares with 37 percent of men in the same age group.</p> <p>Gender gap</p> <ul style="list-style-type: none">Amongst VET graduates aged 20 to 64 years, women are 9 percentage points less likely than men to work in a field for which their training was intended.
The direction of change over time	<p>There has been little change for women since 2009, with figures ranging between 27 and 28 percent. Among men, results have fluctuated between 37 and 43 percent.</p>
How does NSW compare?	<p>Both women and men in Australia have a better match between training and their occupation six months after graduating than those in NSW and there is a smaller gender gap (9 percentage points in NSW compared to 6 percentage points Australiawide).</p> <p>In 2013, 33 percent of Australian women aged 20 to 64, who hold VET qualifications, worked in the same occupation as their training. This compared with 39 percent of men in the same age group.</p> <p>Of all the states and territories, NSW has the lowest percentage of women aged 20 to 64 with VET qualifications working in the same occupation as their training. All other states and territories have values of 30 percent and above, with the highest being TAS, WA and QLD (37, 36 and 34 percent respectively).</p> <p>Women slightly outperform men in SA, WA and ACT and are 6 percentage points higher than men in NT.</p>
Tracking subgroups of women	<p>Young men have a better match between training and their occupation than women and men of other age demographics. See Figure 3.11.</p> <p>In 2013, 24 percent of NSW Aboriginal women aged 20 to 64 who held VET qualifications, worked in the same occupation as their training. This compares with 22 percent of men in the same age group; in other words, Aboriginal women had a better match between training and their occupation six months after graduating than Aboriginal men, which was not true for the non-Aboriginal population.</p>

NCVER defines the 'same occupation' by matching the student's reported occupation six months after training has completed with the intended occupation for the training course in question (as described in Training Packages). Whilst the *Student Outcomes Survey* goes back to 2005, data on occupation after

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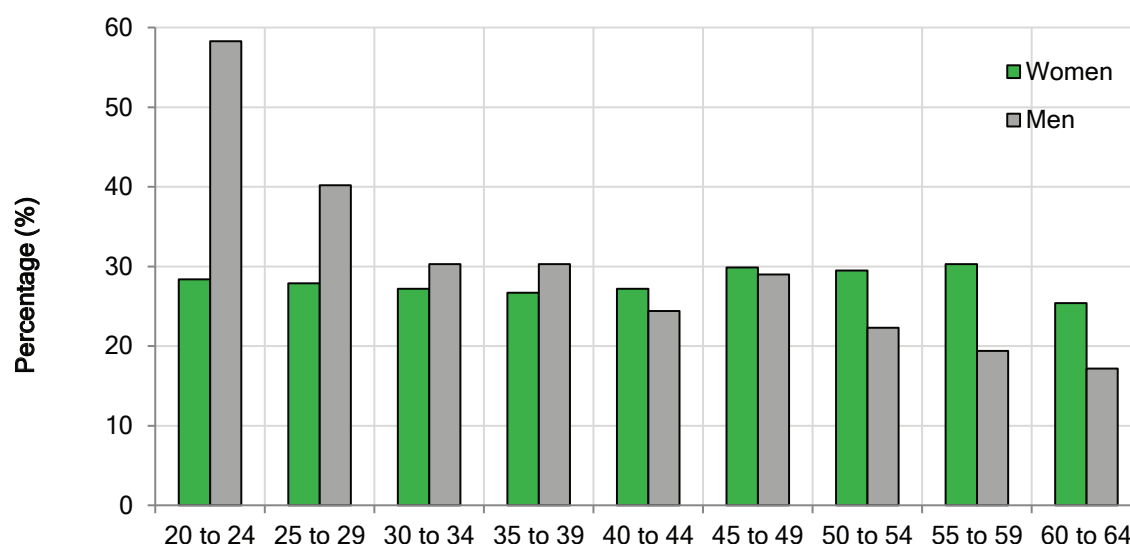
training are available from 2009. The data reported here is for the age group 20 to 64 years. In previous *Women in NSW* reports, both modular completers and graduates were included in the data. The data in this years' report exclude modular completers, looking at graduates only.

Year collected: 2013.

Data source: NCVER, *Student Outcomes Survey 2013*, unpublished data.

More information is available: www.ncver.edu.au

Figure 3.11 People working in their field of study by age, NSW, 2013



Note: The figure shows the percentage of female and male VET graduates working in the same occupation as the intended occupation for the training course they undertook, six months after completing the course.

Population: VET graduates aged 20 to 64.

Data source: NCVER *Student Outcomes Survey 2013*, unpublished data.

5.2 The graduate salary gap

Median starting salaries for young graduates

Women's status compared to men	<p>In 2013, the median starting salary for NSW women aged less than 25 with a bachelor degree in their first full-time job was \$50,000 per year. The median earnings of their male counterparts was \$55,000.</p> <p>Gender gap</p> <ul style="list-style-type: none"> The graduate salary gap between NSW men and women is around 9 percent or \$5,000 per year.
The direction of change over time	<p>Both women's and men's starting salaries in 2013 were the same as they were in 2012.</p> <p>The average starting salaries of women grew consistently from 2002 to 2011 whereas the starting salaries of men fluctuated. From 2011 to 2013, women's starting salaries have remained at \$50,000 while men's increased from \$54,000 in 2011 to \$55,000 in 2012. See Figure 3.12.</p>

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How does NSW compare?

In 2013, the median starting salary for Australian women aged less than 25 with a bachelor's degree in their first full-time job was \$51,600 per year. The median earnings of their male counterparts was \$55,000. Nationally women fair better than they do in NSW while men perform at the same level resulting in a smaller gender gap (\$3,400 compared to \$5,000).

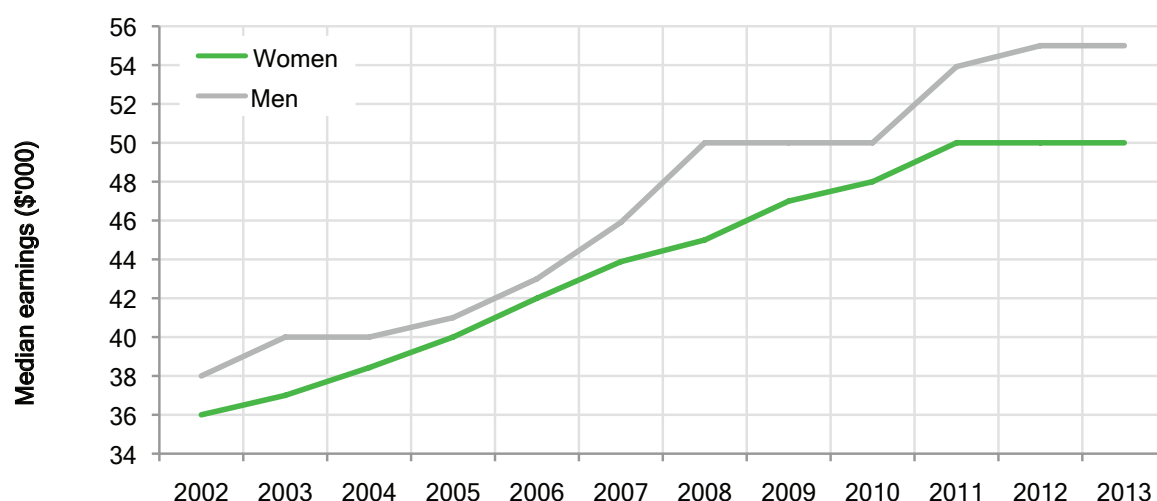
The *Australian Graduate Survey*, undertaken annually since 1972, surveys new graduates from all Australian universities, and a number of higher education institutes and colleges, approximately four months after they complete the requirements for their awards. Data shown in this indicator is an average across all disciplines and does not necessarily mean that women are paid less than men in each field.

Year collected: 2013 and previous years.

Data source: Graduate Careers Australia, *Australian Graduate Survey, 2013*, unpublished data.

More information is available: www.graduatemcareers.com.au

Figure 3.12 Median starting salaries after graduation, under 25, NSW, 2002–13



Population: Bachelor degree graduates under 25 working in their first full-time job.

Data source: Graduate Careers Australia, *Australian Graduate Survey, 2013*.

Topic 6 Lifelong learning

Much of vocational and higher education takes place in the years following school and immediate post-school study. This topic focuses on the further education and training people undertake throughout their lifetime. Indicator 6.1 refers to work-related training and education that people already employed are doing to improve their skills in their current job, move into new positions and/or meet professional or occupational standards. Indicator 6.2 considers people's participation in government-funded adult education.

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6.1 Work-related learning

Participation in structured work-related learning in the last 12 months by employed people

Women's status compared to men	<p>NSW working women aged 15 to 64 years undertake work-related training slightly more frequently than men: 35 percent of them did so in 2012 compared with 29 percent of men.</p> <p>Gender gap</p> <ul style="list-style-type: none"> Women's participation in work-related training is 6 percentage points higher than men's.
The direction of change over time	<p>From 2007 to 2012, the participation levels have varied. From 2007 to 2009, men's participation rates were higher than women's but since then women have been undertaking more work-related learning than men. See Figure 3.13.</p>
How does NSW compare?	<p>Women perform just as well on a national level as they do in NSW, however, the gap between men and women is 1 percentage point smaller due to men performing better nationally than they do in NSW (30 percent compared to 29 percent).</p>

Structured work-related learning in the HILDA survey is defined as courses that are planned in advance and have explicit attendance and assessment criteria.

Year collected: 2012 and previous years (measure available annually from 2002 onward).

Data source: HILDA survey, Release 12.0 and earlier years, weighted data.

More information is available at www.melbourneinstitute.com/HILDA

Figure 3.13 Participation in work-related learning by sex, NSW, 2007–12



Note: Structured work-related learning is defined as courses that are planned in advance and have explicit attendance and assessment criteria.

Population: People aged 15 to 64 years who are currently employed, or have been employed during the last 12 months.

Data source: HILDA survey, Release 12.0, data weighted on a household basis.

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6.2 Participation in adult and community education

Participation in adult and community education (government-funded providers)

Women's status compared to men	<p>Women in NSW make up the majority of enrolments in government-funded adult and community education (ACE) courses in NSW. In 2012, they accounted for 67 percent of total enrolments, or 156,870 out of 233,506.</p> <p>Gender gap</p> <ul style="list-style-type: none"> There were just over twice as many women than men enrolled in government-funded adult and community education.
The direction of change over time	<p>Women have made up a consistent percentage of ACE enrolments in recent years, namely two-thirds of total enrolments each year between 2007 and 2012.</p>
Tracking subgroups of women	<p>Compared to the NSW population, Aboriginal women are slightly overrepresented in ACE. Nearly 4 percent of ACE enrolments are Aboriginal women compared to 2.5 percent of the total population.</p> <p>Women who speak a language other than English at home and women with a disability are represented in government-funded ACE at levels slightly below their population share.</p>

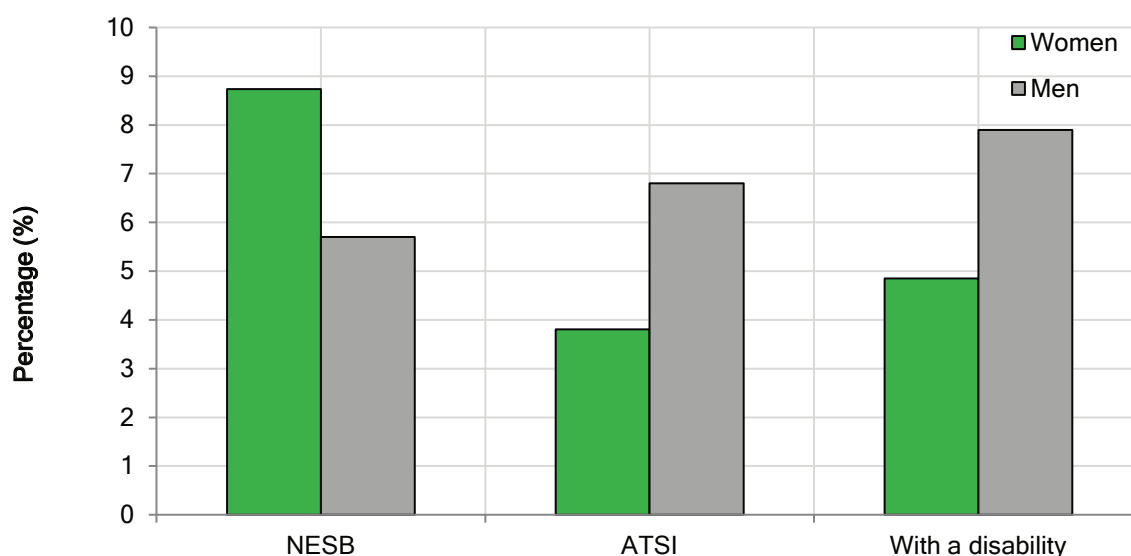
NSW's community colleges provide a primary network for the delivery of community education, specialising in adult learning courses that may, but do not always, lead to a formal educational qualification. The statistics reported on are for total enrolments in ACE providers that attract government funding. In 2012, there were 46 reporting ACE providers.

Year collected: 2012.

Data source: Adult and Community Education Statistics, unpublished data.

More information is available: www.ace.nsw.gov.au

Figure 3.14 Participation in adult and community education by subgroup, NSW, 2012



Note: Non English speaking background (NESB) and Aboriginal and Torres Strait Islander (ATSI).

Population: People aged 15 to 64 years who are undertaking adult and community education.

Data source: Adult and Community Education Statistics, unpublished data.

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Conclusion

NSW women's performance in education closely mirrors women's results at a national level. Results are often within a few percentage points of each other, with trends typically tracking in the same direction. This means that when we compare Australia's performance with that of other countries, we are also shedding light on how NSW performs compared to international norms.

In terms of year 12 completion for women, Australia is ranked 23rd out of the 34 OECD countries, just below the OECD average. Seventy-three percent of Australian women aged 25 to 64 had attained an upper secondary education (completion of year 12 or equivalent) in 2011 compared to 74 percent of OECD women as a whole. For women aged 25 to 34, Australia's results were slightly above the OECD average (86 compared to 84 percent), ranking Australia 19th among the OECD countries.¹

Despite this mid-ranked performance in year 12 completion, Australia has above-average outcomes for women in higher education. In 2011, 42 percent of Australian women had completed a tertiary education which is 9 percentage points higher than the OECD average (33 percent). A tertiary education is defined as post-secondary education following completion of a secondary education. Of all OECD countries, Australia ranks 10th being only marginally lower than those who placed 4th to 9th (Japan 46 percent, Finland 46 percent, Estonia 45 percent, United States 45 percent, New Zealand 44 percent and Norway 42 percent). Fifty-one percent of women aged 25 to 34 had completed a tertiary education in 2011, placing Australia in 9th place.

As in Australia, the number of women (and men) choosing science, technology, engineering and mathematics courses is an issue of concern for the OECD, and is tracked by it. As we have seen, NSW women's participation in STEM courses is low at school and continues to lag behind men's at university, with only 32 percent taking a STEM course in 2012.

Internationally, Australian women's performance in higher education STEM is slightly below the OECD average. In 2011, women accounted for 25 percent of engineering, manufacturing and construction, 37 percent of science and 39 percent of mathematics and statistics completions. For the same period the OECD average shares were 26, 41 and 43 percent respectively.

¹ OECD, Gender Data Portal, *Indicators of Gender Equality in Education* available at <http://www.oecd.org/gender/data/indicatorsofgenderequalityineducation.htm> accessed 17 July 2014.