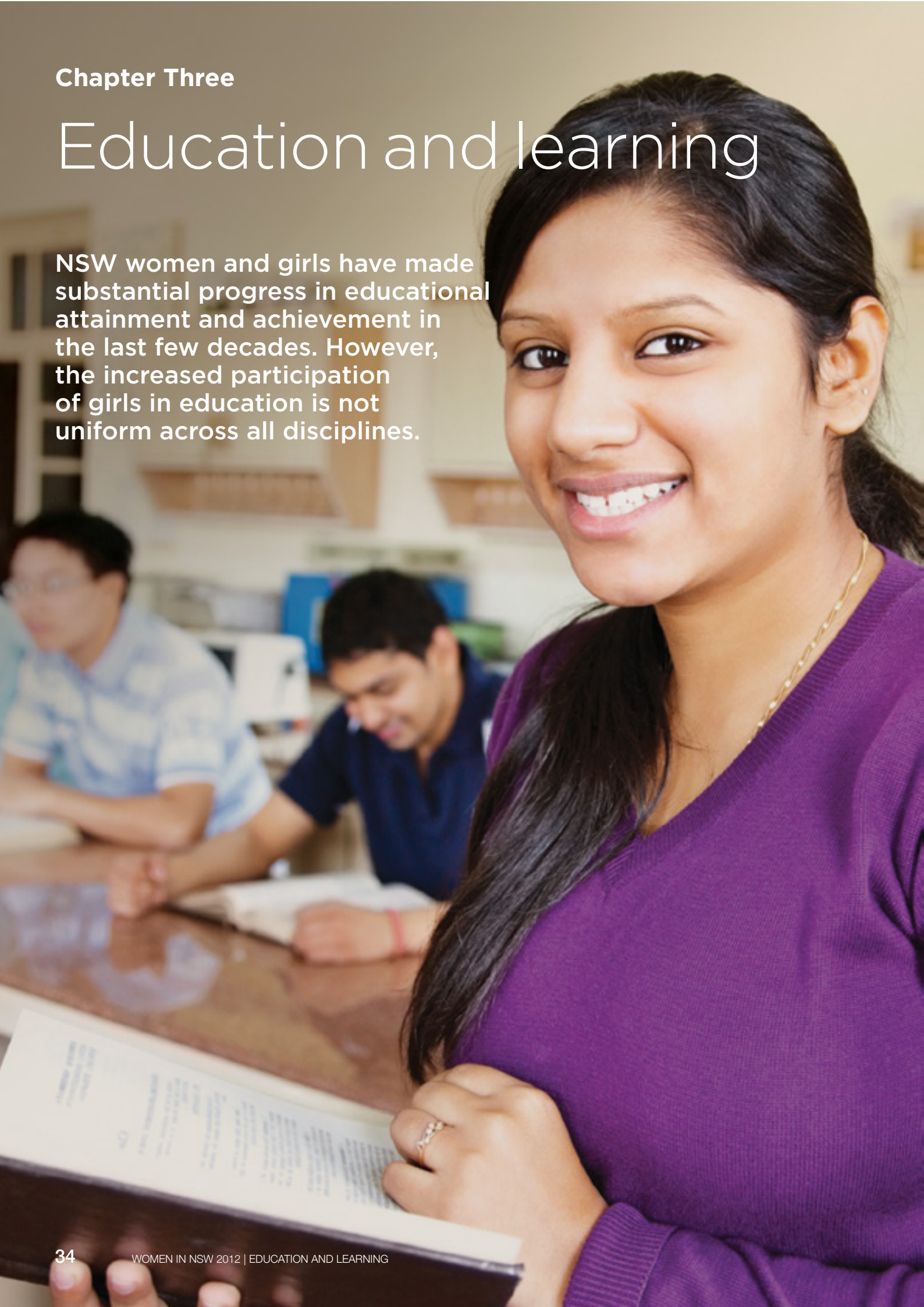


Chapter Three

Education and learning

NSW women and girls have made substantial progress in educational attainment and achievement in the last few decades. However, the increased participation of girls in education is not uniform across all disciplines.



Education and learning

Well-educated communities enjoy a greater range of choices and opportunities. Education is important for social stability and participation in democratic processes. It's also strongly linked to better health and wellbeing for individuals.

This chapter considers women's participation, and attainment of women and men, in school and post-school education and in the subjects that young women and men are choosing to study. The chapter also includes indicators related to the steps that students take after completing an educational qualification, including graduate earnings and job outcomes. These findings set the scene for the more comprehensive analysis of women'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 increased by 17 percentage points since 2001, from 37 to 54 percent in 2011. This is a faster rate of growth than among men, and 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 increased participation of girls in education is not uniform across all disciplines. Participation in trades training remains low by comparison with men and is largely unchanged over 30 years. Women made up 13 percent of trade apprentices and trainees in 2011, and over half of these were hairdressing apprentices.

Just 33 percent of girls' HSC course completions are in science, technology, engineering and mathematics (STEM) subjects compared to 44 percent of course completions by boys. A similar gender difference is evident in women and men's course enrolments at university; engineering and related technologies make up 12 percent of men's undergraduate enrolments, but just 1.4 percent of women's.

Many women lose economically in the course of making transitions between study, work and family. In 2011, a graduate pay gap of \$4,000 per year had emerged between young women and men by the time they obtained their first full-time job after university. Female VET (vocational education and training) graduates are less likely than men to work in a field for which they are qualified.

Gender indicators: Education and learning

In this report, women's experiences are reported in six education topic areas of importance for women as they move through their learning

careers. Some indicators align with state, national and international frameworks and these linkages are shown below.

| Topics Education and learning topics and indicators | | |
|--|--|---|
| Topic | Indicators | Linkages |
| Topic 1: High school completion | 1.1 Completion rates, year 12 or equivalent 1.2 Higher School Certificate student course choice | ABS Gender Indicators Productivity Commission, Report on Government Services State Plan NSW 2021 (Goal 15) United Nations Gender Inequality Index |
| Topic 2: Vocational education and training | 2.1 Vocational Education and Training (VET) participation 2.2 Qualifications at AQF Certificate III and above | ABS Gender Indicators Council of Australian Governments, National Agreement for Skills and Workforce Development State Plan NSW 2021 (Goal 6) Productivity Commission, Report on Government Services |
| Topic 3: Apprenticeships and traineeships | 3.1 Apprenticeships and traineeships 3.2 Women's participation in traditional trade training | ABS Gender Indicators State Plan NSW 2021 (Goals 1 and 6) |
| Topic 4: Higher education | 4.1 Undergraduate students 4.2 Postgraduate students 4.3 Undergraduate field of education | ABS Gender Indicators State Plan NSW 2021 (Goal 6) Organisation for Economic Co-operation and Development (OECD) Gender Equality Indicators World Economic Forum Global Gender Gap Index United Nations Gender Inequality Index |
| Topic 5: Employment outcomes | 5.1 VET graduates working in the field for which they are qualified 5.2 The graduate salary gap | ABS Gender Indicators State Plan NSW 2021 (Goal 6) |
| Topic 6: Lifelong learning | 6.1 Participation in structured work-related learning 6.2 Participation in adult and community education | ABS Gender Indicators State Plan NSW 2021 (Goal 6) |

Current levels and trends

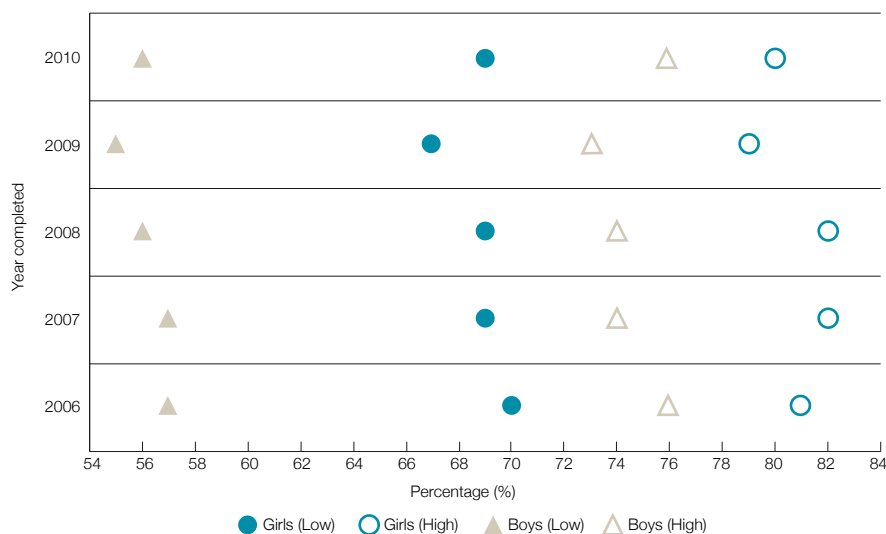
This section outlines women's current status in the topic areas listed above and the direction of change over time, where this information is available. The latest available data is used in each case; the year in which data is collected as well as details about the source is shown for each indicator.

Topic 1: High school completion

Completing high school creates the platform from which to embark on further education and employment. It is a measure of achievement in itself: earnings and employment outcomes are significantly better for people who have completed Year 12 or its equivalent. Indicator 1.1 reports on year 12 completion while Indicator 1.2 focuses on subject choice in the higher school certificate.

Figure 3.1

Completion rates to year 12 for girls and boys, low and high socioeconomic status, NSW, 2006 to 2010



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: Students who met the requirements of a year 12 certificate or equivalent and the potential year 12 population.

Source: Steering Committee for the Review of Government Service Provision (2012), *Report on Government Services 2012*, Productivity Commission, Appendix 4A, Table 105.

1.1 Completion rates, year 12 or equivalent

Current position

72 percent of girls in NSW completed year 12, compared with 63 percent of boys.

Gender gap:

- Girls have higher school completion rates than boys by 9 percentage points.

The direction of change over time

Completion rates for students of both sexes have remained roughly constant in the five-year period 2006 to 2010.

The gender gap in favour of girls has also remained steady, between 9 and 11 percentage points since 2006, similar to the difference Australia-wide.

Discussion

School completion rates in the last five years have been higher for female than male students in all socioeconomic groups. However, the gap between the sexes is greater among low socioeconomic background students (13 percent in 2010) than among high socioeconomic students (4 percent).

Boys from high socioeconomic backgrounds outperform low socioeconomic status girls (see Figure 3.1).

This indicator reports on the percentage of students who have completed year 12, at school or another educational institution, or have completed an equivalent course such as an Australian Qualification Framework (AQF) Certificate course.

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: 2010 and previous year.

Data source: Steering Committee for the Review of Government Service Provision (2012), *Report on Government Services 2012*, Productivity Commission (Australian Government), Appendix 4A, Table 105.

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

1.2 Higher School Certificate student course choice

Higher School Certificate (HSC) student course completions – science, technology, engineering, mathematics

Current position

In 2011, 33 percent of course completions by girls at HSC level were in the Key Learning Areas (KLAs) of science, technology, engineering and mathematics (STEM). This compares to 44 percent of course completions by boys.

Gender gap:

- Girls are 11 percentage points less likely than boys to complete STEM courses at HSC level.

The direction of change over time

There has been no change in girls' completion of STEM courses since 2006 when the percentage gap between boys and girls was 11 percent.

Discussion

Girls' under-representation in STEM courses contrasts with their strong performance in other subjects (see Table 3.1 and Figure 3.2).

Knowledge-intensive, high value-add industries will continue to fuel the prosperity of developed economies like Australia's.

Women's further study and career options may be constrained by their course choices at high school.

Further research could establish the extent to which girls and boys have different completion rates across STEM subjects, as opposed to different enrolment preferences.

STEM or KLAs are science, technology, engineering and mathematics. There were 20 separate HSC courses within these KLAs in NSW in 2011 (see Table 3.1). STEM courses are assumed knowledge and/or prerequisites for many tertiary level courses that have good job prospects (see Indicator 5.2 The graduate salary gap). The data captures students who completed courses; enrolment data is not readily available.

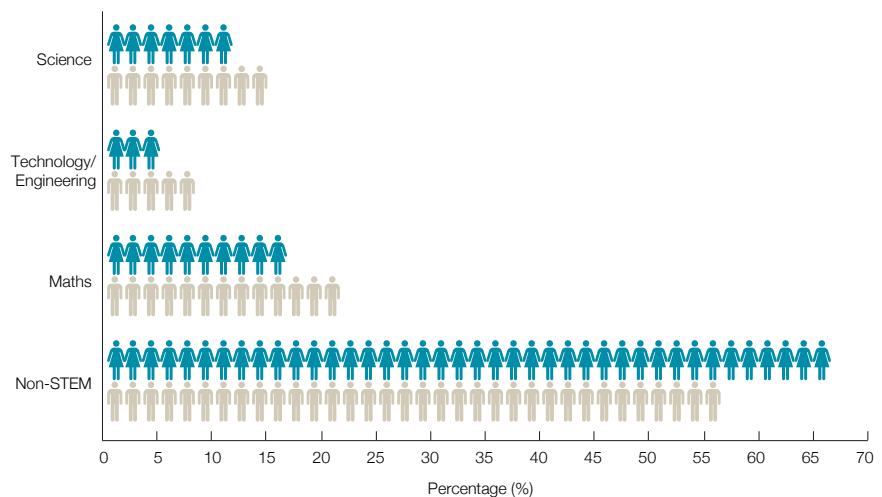
Year collected: 2011.

Data source: NSW Board of Studies, unpublished data.

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

Figure 3.2

Girls' and boys' completion of STEM courses at HSC level, NSW, 2011



Note: STEM courses are as listed in Table 3.1. Non-STEM courses are all other HSC courses, but not including VET courses.

Population: NSW Higher School Certificate students.

Source: NSW Board of Studies, unpublished data.

Table 3.1

| Science, technology, engineering and mathematics completions by Key Learning Area at HSC, NSW, 2011 | | |
|---|---------------------------------------|--------------------------------------|
| HSC Key Learning Area | % of total course completions – girls | % of total course completions – boys |
| Science (44,371) | 11.8 | 15.0 |
| Biology (16,704) | 5.8 | 4.1 |
| Chemistry (10,965) | 2.8 | 3.8 |
| Senior science (5,377) | 1.5 | 1.8 |
| Physics (9,382) | 1.2 | 4.6 |
| Earth and environmental science (1,473) | 0.4 | 0.5 |
| Science life skills (470) | 0.1 | 0.2 |
| Technology and Engineering (23,733) | 5.3 | 9.1 |
| Agriculture (1,299) | 0.4 | 0.4 |
| Food technology (3,832) | 1.6 | 0.6 |
| Textiles and design (2,325) | 1.3 | 0.0 |
| Design and technology (3,401) | 0.9 | 1.2 |
| Industrial technology (4,584) | 0.3 | 2.6 |
| Technology and applied studies life skills (793) | 0.2 | 0.3 |
| Information processes and technology (4,140) | 0.6 | 2.0 |
| Software design and development (1,634) | 0.1 | 1.0 |
| Engineering studies (1,725) | 0.0 | 1.0 |
| Mathematics (61,589) | 16.6 | 20.6 |
| General mathematics (31,633) | 9.1 | 9.9 |
| Mathematics (16,564) | 4.4 | 5.6 |
| Mathematics extension 1 (8,824) | 2.1 | 3.3 |
| Mathematics extension 2 (3,441) | 0.7 | 1.4 |
| Mathematics life skills (1,127) | 0.2 | 0.4 |
| Total STEM courses (129,693) | 33.7 | 44.7 |
| Total Non STEM courses (203,860) | 66.3 | 55.3 |
| Total course completions (333,553) | 100.0 | 100.0 |

Note: The figures are for course completions, HSC units of study, VET subjects excluded. There were some 72,000 students in NSW in 2011 who undertook 333,553 courses.

Population: NSW Higher School Certificate students.

Source: NSW Board of Studies, unpublished data.

Topic 2: Vocational education and training

Vocational education and training (VET) provides employment-related skills across a wide range of vocations. It is the avenue for

people of all ages to develop skills to enter or re-enter the labour force, and to deepen their capabilities for existing jobs. The indicators in this

section report on participation in VET courses (2.1) and attainment of VET qualifications (2.2).

2.1 Vocational Education and Training (VET) participation

VET participation by people aged 15 to 64 years

Current position

9.7 percent of women aged 15 to 64 years (235,200 women) in NSW participated in government-funded VET in 2010 compared with 8.9 percent (215,600) of men.

Gender gap:

- There were 19,600 more women who participated in a government-funded VET course in 2010 than men.

The direction of change over time

The participation rate for women aged 15 to 64 years has remained relatively steady from 2006 to 2010, with rates ranging from 9.3 percent to 10.2 percent during that time period.

Women's participation rates have remained consistently higher than the participation rates of men over the same period, which ranged from 8.6 percent to 9.4 percent of 15 to 64 year olds.

Discussion

There is considerable variation among subgroups of women (see Figure 3.3). Some groups were over-represented; for example, in 2010 women from outer regional locations made up 6.4 percent of the NSW population, but comprised 15 percent of VET students.

Women from remote and very remote locations made up 0.5 percent of the NSW population, but 2.3 percent of VET students.

Similarly, Aboriginal women comprised 5.3 percent of VET students in 2010 compared to 2.3 percent of the NSW population. Women who were born overseas in a non-English speaking country were also over-represented on a population share basis; they comprised 31 percent of VET students compared to 24 percent of the NSW population.

However, women with a disability were considerably under-represented. They made up 19 percent of the NSW population, but comprised just 6.5 percent of VET students.

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 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.

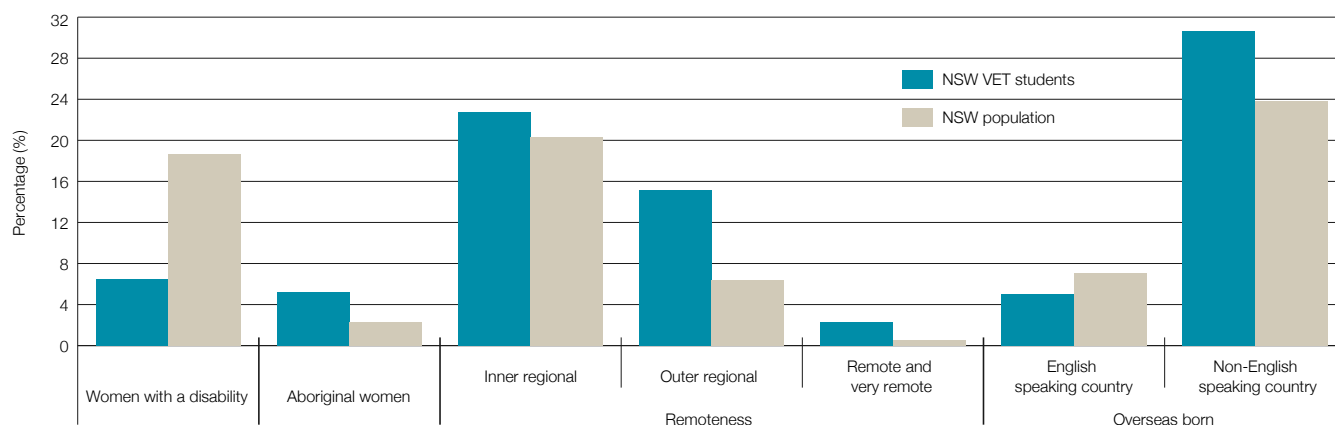
Year collected: 2006 to 2010 and 2002 to 2010.

Data sources: Productivity Commission, *Report on Government Services 2012*, Chapter 5; VOCSTATS, *Students and Courses Collection* and ABS *Census of Population and Housing 2006*.

More information is available at: www.pc.gov.au and www.ncver.edu.au

Figure 3.3

Women participating in VET courses compared with percentage in NSW population, by subgroup, NSW, 2010



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, 6.5 percent of female VET students identify as having a disability whereas some 19 percent of women in NSW identify as having a disability. This shows that some 19 percent of women with a disability are under-represented in VET courses. It is also important to note that some women may fall within multiple categories. The comparative population figures for all subgroups, except women with a disability, are taken from the ABS *Census of Population and Housing 2006*. Figures for women with a disability are taken from the ABS *Disability, Ageing and Carers, Australia: Summary of Findings, 2009*.

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

Source: National Centre for Vocational Educational Research (NCVER) VOCSTATS, Students and Courses Collection.

2.2 Qualifications at AQF Certificate III and above

Qualifications at Australian Qualification Framework (AQF) Certificate III and above held by 20 to 64 year olds

Current position

In 2011, 54 percent of women aged 20 to 64 years had attained qualifications at AQF Certificate III and above. This compares to 60 percent of men.

Gender gap:

- Among the prime working-aged population, the gap between women and men with qualifications at Certificate III and above is 6 percent in men's favour.

The direction of change over time

The percentage of 20 to 64 year olds with qualifications at Certificate III and above has grown rapidly in NSW over the last decade, from 43 percent of the population in 2001 to 57 percent in 2011 (both sexes).

Figure 3.4 shows that women's qualification rate has increased at a faster rate over the last decade compared to that of men, changing by 17 percentage points from 37 to 54 percent (see Figure 3.4).

Discussion

The changing gap between women and men at different age groups is another way of illustrating this trend, as it shows that women are approaching (and at younger ages, overtaking) men in terms of their attainment of Certificate III and above qualifications (Figure 3.5).

Today, women's overall educational qualification rate is significantly below that of men only in the 45 and older age groups. The gap is 13 percentage points in the 45 to 54 age group, and 17 percentage points in the 55 to 64 age group.

Even though many are still in the middle of their studies, women aged 20 to 24 are more likely to have formal qualifications than their mothers' generation (the cohort aged 55 to 64 (see Figure 3.5).

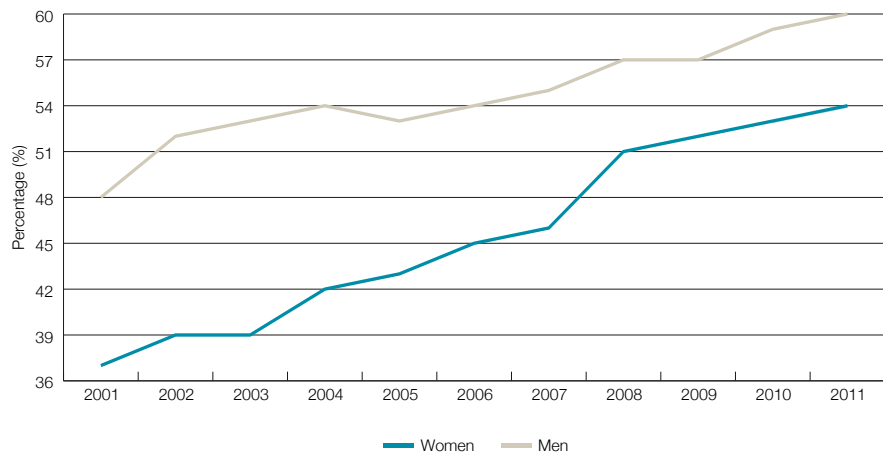
Indicator 2.2 reports on gender differences in a key long-term national performance measure, the holding of Certificate III, which is regarded as a minimum non-school qualification. This indicator is regarded as a useful stock measure for the skills base of the workforce (noting that skills are also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

Year collected: 2011 and previous years.

Data source: ABS (2011 and previous years) *Education and Work, Australia*, May 2011 Cat no. 6227.0, unpublished data.

More information is available at: www.coagreformcouncil.gov.au

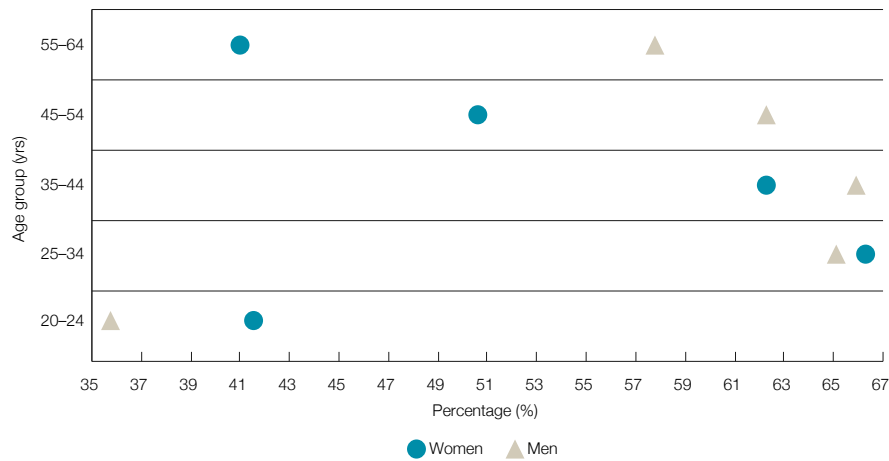
Figure 3.4
 Women and men with qualifications at AQF Certificate III or above,
 NSW, 2001 to 2011



Population: NSW residents aged 20 to 64 years.

Source: ABS (2011 and previous years) *Education and Work, Australia*, Cat no. 6227.0.

Figure 3.5
 Women and men with qualifications at AQF Certificate III or above,
 by age group, NSW, 2011



Population: NSW residents aged 20 to 64 years.

Source: ABS (2011) *Education and Work, Australia, May 2011* 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 often 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. The indicators below look at the comparative rate

of women and men commencing and completing apprenticeships and traineeships (Indicator 3.1), and then in more detail at traditional trade apprenticeships (Indicator 3.2).

3.1 Apprenticeships and traineeships

Apprenticeship and traineeship commencements and completions

Current position

41,600 women in NSW commenced an apprenticeship or traineeship in the 12 months to September 2011, compared with 51,000 men.

Roughly 23,500 women and 29,800 men completed an apprenticeship or traineeship in NSW in the same period.

Gender gaps:

- Almost 9,400 fewer women than men commenced apprenticeships and traineeships in NSW in 2011. This is equal to a 10 percentage point gap between men and women or a ratio of 4 women to every 5 men.
- Almost 6,400 fewer women than men completed an apprenticeship or traineeship in NSW in the year to September 2011. This is equal to a 12 percentage point gap between men and women or a ratio of 7 women to every 9 men.

The direction of change over time

The ratio of women to men undertaking apprenticeships and traineeships has been closing gradually since 1995 (see Figure 3.6). The ratio of women commencing an apprenticeship or traineeship has increased from 27 percent in 1995 to 45 percent in 2011.

Note that the numerical gap, as shown in Figure 3.7, has remained relatively constant at around 6,500 more men than women.

Discussion

Significantly more women than men undertake non-trade apprenticeships or traineeships. In 2011, 90 percent of women and 59 percent of men who commenced an apprenticeship or traineeship did so in a non-trade occupation (see also Indicator 3.2).

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 both in trade and non-trade vocational areas.

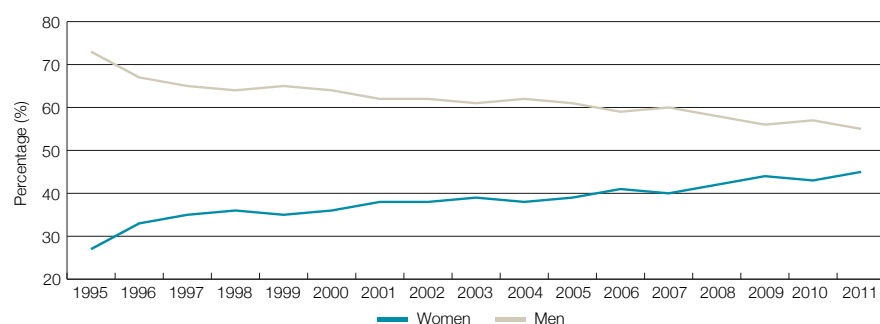
Year collected: 2011.

Data source: September quarter 2011, NCVET, *Apprentices and Trainees Collection*.

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

Figure 3.6

Women and men commencing an apprenticeship or traineeship, all ages, NSW, 1995 to 2011

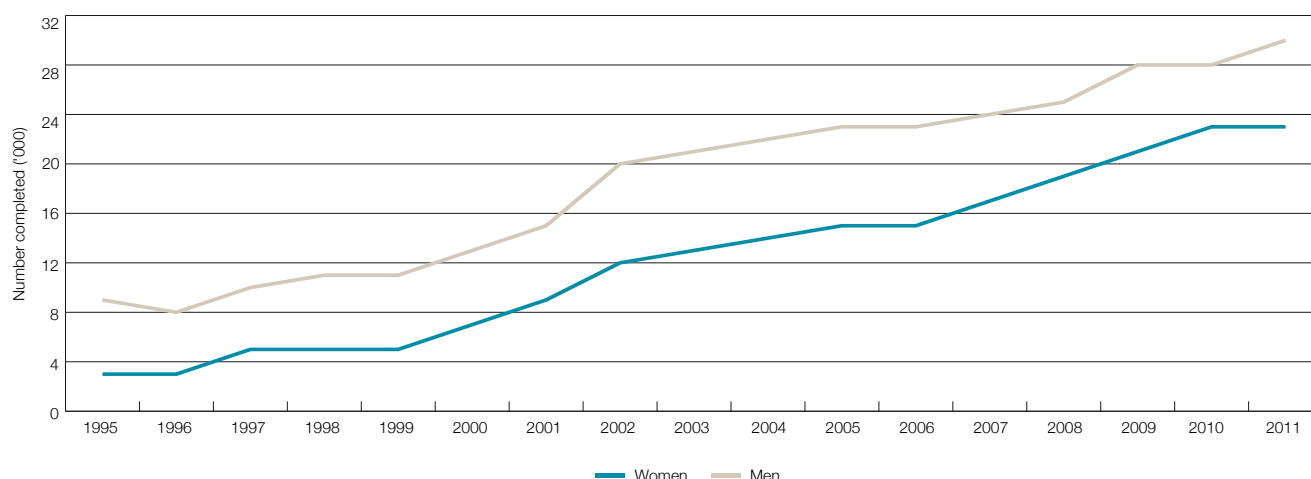


Population: NSW residents who commenced an apprenticeship or traineeship between 1995 and 2011.

Source: VOCSTATS, *Apprentices and Trainees collection*.

Figure 3.7

Women and men who completed an apprenticeship or traineeship, NSW, 1995 to 2011



Population: NSW residents (all ages) who completed an apprenticeship or traineeship between 1995 and 2011.

Source: VOCSTATS, *Apprentices and Trainees Collection*.

3.2 Women's participation in traditional trade training

Women's participation in traditional trade apprenticeships and traineeships

Current position

Traditional trades make up 22 percent of all apprenticeship and traineeship commencements in NSW. The majority of traditional trades are male-dominated according to the NSW Government definition (see next page).

In the 12 months to September 2011, 2,629 women commenced an apprenticeship or traineeship in a traditional trade, representing 13 percent of total female apprenticeships and traineeships.

Gender gap:

- In 2011, there were nearly 15,500 fewer women than men who commenced an apprenticeship or traineeship in a traditional trade.

The direction of change over time

There has been some change in male-dominated apprenticeships in the last decade. Women have experienced a 6 percent increase on average in the number of commencements, with an average of 10 percent more women completing courses each year. In contrast, male commencements increased by 5.5 percent a year and completions by 7 percent.

Discussion

There are two traditional trade groups that are not male-dominated: food trades workers and other trades (Table 3.2). Within these groups are cooks, 33 percent of which are women, and hairdressers, of which 90 percent are women. Of the total number of women who commenced a traditional trade in 2011, 24 percent were cooks and 53 percent were hairdressers. In contrast, 7 percent of males were cooks and 1 percent were hairdressers, with the vast majority of males undertaking construction, automotive and engineering trades.

From 2001 to 2011, there has been a slight increase in the ratio of women commencing a construction or automotive and engineering trade.

3.2 Women's participation in traditional trade training continued

Women's participation in traditional trade apprenticeships and traineeships

Trades' apprentices and trainees are people whose apprenticeship or traineeship was in one of the occupations in the ANZSCO (Australia and New Zealand Standard Classification of Occupations) 2006, Major Group 3, Technicians and Trade Workers. This group includes: engineering, Information and Communication Technology (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.

The NSW Government defines occupations or training as 'male dominated' where 25 percent or less of participants are women.

Year collected: 2011.

Data source: September quarter 2011, NCVER, *Apprentices and Trainees Collection*.

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

Table 3.2

Apprenticeship and traineeship commencements, traditional trades, 12 months ended September 2011

| Occupation (ANZSCO – National Training Information Service (NTIS)) group | % Men | % Women | Total number |
|--|-----------|-----------|--------------|
| 31 Engineering, ICT and science technicians | 91 | 9 | 34 |
| 313 ICT and telecommunications technicians | 91 | 9 | 34 |
| 32 Automotive and engineering trades workers | 98 | 2 | 5,376 |
| 321 Automotive electricians and mechanics | 98 | 2 | 2,637 |
| 322 Fabrication engineering trades workers | 99 | 1 | 1,115 |
| 323 Mechanical engineering trades workers | 97 | 3 | 1,027 |
| 324 Panelbeaters, and vehicle body builders, trimmers and painters | 97 | 3 | 596 |
| 33 Construction trades workers | 99 | 1 | 5,190 |
| 330 Construction trades workers – NFD* | 100 | 0 | 6 |
| 331 Bricklayers, and carpenters and joiners | 99 | 1 | 2,997 |
| 332 Floor finishers and painting trades workers | 97 | 3 | 333 |
| 333 Glaziers, plasterers and tilers | 99 | 1 | 480 |
| 334 Plumbers | 100 | 0 | 1,373 |
| 34 Electrotechnology and telecommunications trades workers | 99 | 1 | 3,509 |
| 341 Electricians | 99 | 1 | 2,460 |
| 342 Electronics and telecommunications trades workers | 99 | 1 | 1,048 |
| 35 Food Trades Workers** | 72 | 28 | 2,925 |
| 3511 Bakers and pastry cooks | 71 | 29 | 431 |
| 3512 Butchers and smallgoods makers | 90 | 10 | 588 |
| 3514 Cooks | 67 | 33 | 1,905 |

Note: * Not Further Defined (NFD). **The three-digit subgroups for food trades workers are 350 Food Trades Workers NFD and 351 Food Trades Workers, the former having no data.

Table 3.2 continued

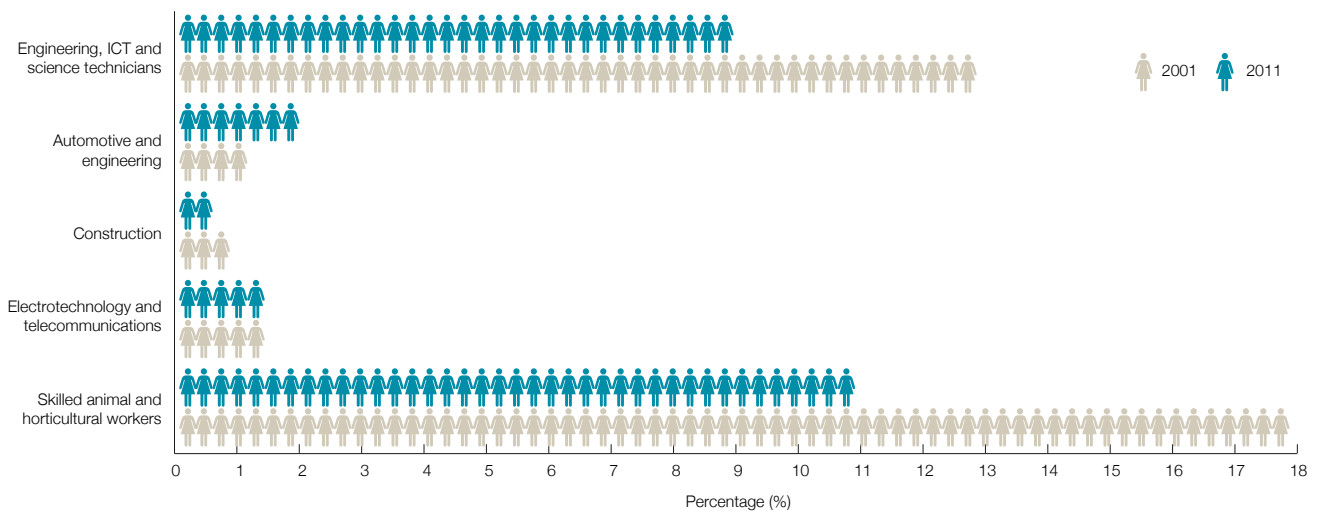
| Apprenticeship and traineeship commencements, traditional trades, 12 months ended September 2011 | | | |
|--|-----------|-----------|---------------|
| Occupation (ANZSCO - NTIS) group | % Men | % Women | Total number |
| 36 Skilled animal and horticultural workers | 89 | 11 | 1,320 |
| 361 Animal attendants and trainers, and shearers | 87 | 13 | 136 |
| 362 Horticultural trades workers | 90 | 10 | 1,184 |
| 39 Other technicians and trades workers | 35 | 65 | 2,236 |
| 391 Hairdressers | 8 | 92 | 5,354 |
| 392 Printing trades workers | 84 | 16 | 156 |
| 393 Textile, clothing and footwear trades workers | 75 | 25 | 32 |
| 394 Wood trades workers | 97 | 3 | 390 |
| 399 Miscellaneous technicians and trades workers | 79 | 21 | 129 |
| Total | 87 | 13 | 20,590 |

Year collected: Year to September 2011.

Source: VOCSTATS, *Apprentices and Trainees Collection*.

Figure 3.8

Women's participation in male-dominated apprenticeships and traineeships, course completions 2001 and 2011



Population: NSW residents who completed a technician and/or trade worker apprenticeship or traineeship, 2002 and 2011.

Source: VOCSTATS, *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 (see below). Almost all higher education in Australia is offered by universities. The indicators below look at the number of female and male students at

undergraduate (Indicator 4.1) and post graduate (Indicator 4.2) levels and at undergraduate student's subject choice (Indicator 4.3).

4.1 Undergraduate students

Undergraduate students in higher education

Current position

In 2010, women made up 57 percent of NSW undergraduate students (117,382 in total). Men made up 43 percent (88,954) of undergraduate students. See Table 3.3.

Gender gap:

- Some 28,400 more NSW women than men commenced an undergraduate higher education course in 2010, a 14 percentage point gap in women's favour.

The direction of change over time

In recent years, enrolment numbers of NSW students in Bachelor degrees have been steadily increasing for both women and men.

There has been a 19 percent increase in the number of women studying undergraduate courses from 2006 to 2010 (see Figure 3.9) and in data not shown, a 21 percent increase in the number of men, so the gap between women and men has closed slightly in this period.

Discussion

Figure 3.10 indicates that women in regional areas of NSW are considerably under-represented compared to their population share. This should be considered in relation to Indicator 2.1, VET participation, where women from regional NSW are over-represented.

This indicator reports on all domestic students enrolled in undergraduate courses in Australia who in 2010 gave NSW as their state of permanent home location.

Undergraduate qualifications are associate and Bachelor degrees and some advanced diplomas and diplomas.

Postgraduate qualifications are graduate certificate, graduate diploma, Masters and doctoral degrees by research or coursework.

Year collected: 2010 and preceding years.

Data source: Department of Education, Employment and Workplace Relations (DEEWR) Higher Education Statistics Collection (Student Collection), unpublished data.

More information is available at: www.deewr.gov.au/highereducation

Table 3.3

Undergraduate and postgraduate course commencements, NSW, 2010

| Course level | % Men | % Women | Total |
|-----------------------------------|-----------|-----------|----------------|
| Undergraduate total | 43 | 57 | 206,336 |
| Bachelor Graduate Entry | 41 | 59 | 5,537 |
| Bachelor Honours | 39 | 61 | 3,009 |
| Bachelor Pass | 43 | 57 | 189,844 |
| Associate Degree | 65 | 35 | 3,773 |
| Advanced Diploma (AQF) | 52 | 48 | 1,459 |
| Diploma (AQF) | 52 | 48 | 2,638 |
| Other undergraduate award courses | 34 | 66 | 76 |
| Postgraduate total | 44 | 56 | 66,566 |
| Doctorate by Research | 47 | 53 | 9,481 |
| Doctorate by Coursework | 42 | 58 | 229 |
| Masters by Research | 48 | 52 | 2,154 |
| Masters by Coursework | 44 | 56 | 34,721 |
| Post grad. Qual/Prelim. | 50 | 50 | 92 |
| Grad. (Post) Dip. - new area | 38 | 62 | 7,531 |
| Grad. (Post) Dip. - ext area | 41 | 59 | 4,275 |
| Graduate Certificate | 44 | 56 | 8,083 |
| Total | 43 | 57 | 272,902 |

Population: NSW residents who enrolled into a higher education course in 2010.

Source: DEEWR Higher Education Statistics Collection (Student Collection) unpublished data.

4.2 Postgraduate students

Postgraduate students in higher education

Current position

In 2010, women made up 56 percent of NSW postgraduate students (37,456). Men made up 44 percent (29,110) of postgraduate students.

Gender gap:

- 8,346 more NSW women than men commenced a postgraduate higher education course in 2010, a 13 percentage point gap in women's favour.

The direction of change over time

The number of women studying postgraduate degrees has increased by 25 percent since 2006 (data not shown). In contrast, the number of men studying postgraduate degrees has increased by 14 percent since 2006.

During this time, the ratio of women to men commencing postgraduate degrees has increased slightly from 1.17:1 to 1.29:1.

Discussion

The growth in female postgraduate enrolments occurred most rapidly among women enrolling in Masters degrees (see Figure 3.9).

Figure 3.10 indicates that women in regional areas of NSW are under-represented among postgraduate enrolments compared to their population share. Given there are a greater number of higher education institutions in major cities, it is possible that upon commencing university a proportion of regional students in effect relocate, depressing the number of regional enrolments.

This indicator reports on all domestic students enrolled in postgraduate courses in Australia who in 2010 gave NSW as their state of permanent home location.

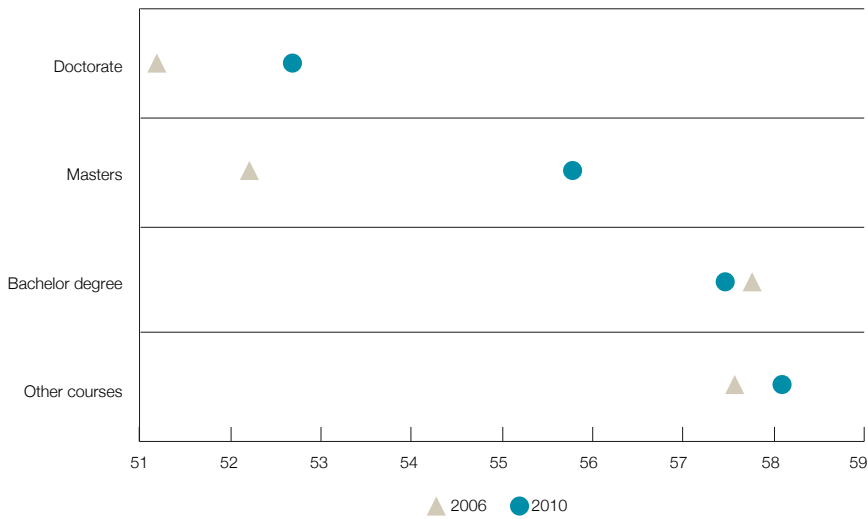
Year collected: 2010.

Data source: DEEWR Higher Education Statistics Collection (Student Collection), unpublished data.

More information is available at: www.deewr.gov.au/highereducation

Figure 3.9

Female enrolments by higher education course level, NSW domestic students, 2006 and 2010



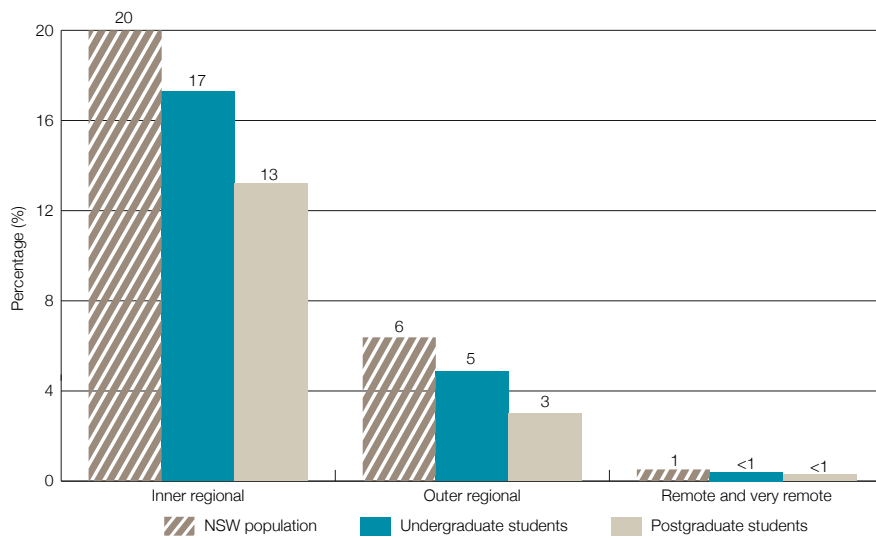
Note: Masters level enrolments in Figure 3.9 includes: graduate certificate, graduate diploma and Masters degrees by research or coursework. Bachelor degree enrolments includes: Bachelor graduate entry, Bachelor honours and Bachelor pass.

Population: NSW residents who enrolled into a higher education course in 2006 and 2010.

Source: DEEWR Higher Education Statistics Collection (Student Collection) unpublished data.

Figure 3.10

Women undertaking undergraduate and postgraduate courses by remoteness, NSW domestic students compared to population, 2010



8,346 more NSW women than men commenced a postgraduate higher education course in 2010, a 13 percentage point gap in women's favour.

Note: This graph shows the comparative percentages between students and the NSW population. For example, 20 percent of NSW women are from inner regional NSW. In contrast, 17 percent of NSW undergraduate students are from inner regional NSW, indicating that they are under-represented by 3 percentage points.

The remoteness classification is taken from the ABS remoteness structure. The six categories in this classification are: major cities, inner regional, outer regional, remote, very remote and migratory.

Population: NSW residents who enrolled into a higher education course in 2010 and total NSW population.

Source: DEEWR Higher Education Statistics Collection (Student Collection) unpublished data, and ABS Census of Population and Housing 2006 (used as basis for population figures).

4.3 Undergraduate field of education

Undergraduate course choice – science, technology, engineering and mathematics

Current position

In 2010, 33 percent of women who enrolled in an undergraduate course enrolled in a science, technology, engineering or mathematics (STEM) field. In contrast, 43 percent of men enrolled in an undergraduate STEM field.

Gender gap:

- Women are 10 percentage points less likely than men to enrol in undergraduate STEM courses at university.

The direction of change over time

While the percentage of women enrolling in STEM courses has remained fairly constant (between 31 and 33 percent) between 2001 and 2010, the actual number of STEM enrolments for women increased by 10,267. By comparison, STEM enrolments for men increased by only 5,787, so that the percentage of men studying STEM courses fell from 47 to 43 percent over the period (see Figure 3.11).

The largest number increases of STEM enrolments for women were nursing at 3,211 (55 percent growth) and behavioural science at 2,240 (77 percent). Percentage increases were greatest in health at 238 percent (to 399 students) and dental studies at 287 percent (to 515 students).

An instance where increased STEM enrolments for men were not matched by an equivalent increase in women was civil engineering (an increase of 1,060 men and 209 women between 2001 and 2010), although the percentage change for women was greater off a low base.

Information technology has become less popular with both men and women since 2001. Women's enrolments fell 62 percent to just 963 enrolments in 2010 and the number of men fell 38 percent to just under 5,000 enrolments.

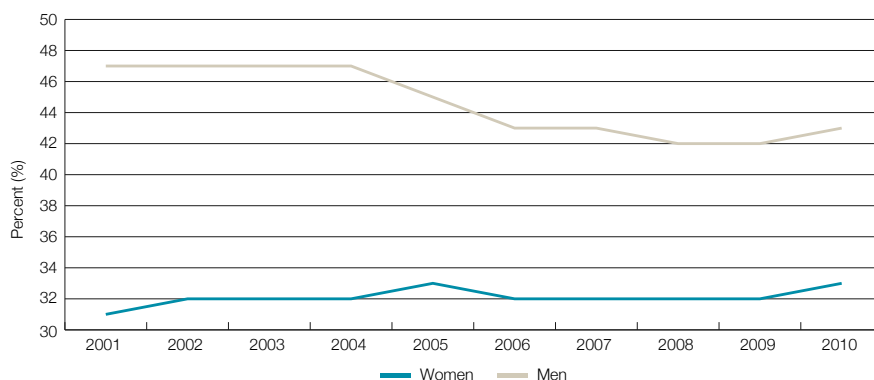
Discussion

Information technology, engineering and related technologies, and building stand out as the courses where the difference between women and men is greatest.

On average, less than 16 percent of participants in these courses were women. 92 percent of building students and 87 percent of engineering students (across all fields of engineering) were men. In 2010, 12 percent of men were enrolled in engineering, which is also one of the highest paid graduate careers (see Indicator 5.2).

Figure 3.11

Women and men enrolling in undergraduate STEM courses as a percentage of total undergraduate enrolments, NSW, 2001 to 2010



Note: Courses have been grouped into STEM fields: Science, Technology, Engineering and Mathematics.

Population: Domestic NSW residents who enrolled in an undergraduate course in 2010.

Source: DEEWR Higher Education Statistics Collection (Student Collection), unpublished data.

Table 3.4

| Undergraduate STEM enrolments, NSW, 2010 | | |
|--|------------------------|----------------------|
| Undergraduate fields of education | % of female enrolments | % of male enrolments |
| Natural and physical sciences (19,208) | 7.6 | 9.6 |
| Natural and physical sciences (8,436) | 3.2 | 4.4 |
| Mathematical sciences (737) | 0.2 | 0.5 |
| Physics and astronomy (181) | 0.0 | 0.1 |
| Chemical sciences (238) | 0.1 | 0.2 |
| Earth sciences (185) | 0.0 | 0.1 |
| Biological sciences (3,584) | 1.6 | 1.6 |
| Other natural and physical sciences (5,847) | 2.5 | 2.7 |
| Information technology (5,931) | 0.8 | 5.0 |
| Information technology (761) | 0.1 | 0.7 |
| Computer science (1,590) | 0.2 | 1.4 |
| Information systems (2,147) | 0.3 | 1.8 |
| Other information technology (1,433) | 0.2 | 1.2 |
| Engineering and related technologies (13,977) | 1.4 | 12.3 |
| Engineering and related technologies (4,681) | 0.4 | 4.2 |
| Manufacturing engineering and technology (8) | 0.0 | 0.0 |
| Process and resources engineering (1,268) | 0.2 | 1.0 |
| Automotive engineering and technology (4) | 0.0 | 0.0 |
| Mechanical and industrial engineering and technology (1,824) | 0.2 | 1.6 |
| Civil engineering (2,420) | 0.2 | 2.1 |
| Geomatic engineering (144) | 0.0 | 0.1 |
| Electrical and electronic engineering and technology (1,591) | 0.1 | 1.5 |
| Aerospace engineering and technology (466) | 0.1 | 0.4 |
| Maritime engineering and technology (64) | 0.0 | 0.1 |
| Other engineering and related technologies (1,507) | 0.2 | 1.3 |
| Architecture and building (5,408) | 1.4 | 3.6 |
| Architecture and urban environment (3,372) | 1.3 | 1.7 |
| Building (2,036) | 0.1 | 1.9 |

Undergraduate STEM enrolments, NSW, 2010 continued

| Undergraduate fields of education | % of female enrolments | % of male enrolments |
|---|------------------------|----------------------|
| Agriculture, environmental and related studies (3,193) | 1.2 | 1.7 |
| Agriculture, environmental and related studies (78) | 0.0 | 0.0 |
| Agriculture (974) | 0.4 | 0.4 |
| Horticulture and viticulture (127) | 0.0 | 0.1 |
| Forestry studies (27) | 0.0 | 0.0 |
| Fisheries studies (4) | 0.0 | 0.0 |
| Environmental studies (1,907) | 0.7 | 1.1 |
| Other agriculture, environmental and related studies (76) | 0.0 | 0.1 |
| Health (29,751) | 16.5 | 8.8 |
| Health (589) | 0.3 | 0.2 |
| Medical studies (4,264) | 1.8 | 2.0 |
| Nursing (10,602) | 7.0 | 1.6 |
| Pharmacy (1,354) | 0.7 | 0.5 |
| Dental studies (820) | 0.4 | 0.3 |
| Optical science (256) | 0.1 | 0.1 |
| Veterinary studies (939) | 0.5 | 0.2 |
| Public health (734) | 0.4 | 0.3 |
| Radiography (1,090) | 0.6 | 0.4 |
| Rehabilitation therapies (3,452) | 2.0 | 0.9 |
| Complementary therapies (727) | 0.5 | 0.1 |
| Other health (4,924) | 2.3 | 2.1 |
| Society and culture (6,914) | 4.0 | 1.8 |
| Behavioural science (6,914) | 4.0 | 1.8 |
| Total STEM subjects (84,382) | 32.9 | 42.8 |
| Total non-STEM subjects (142,467) | 67.1 | 57.2 |
| Total course enrolments (226,849) | 100.0 | 100.0 |

Note: Behavioural science is considered a STEM subject despite falling within the predominately non-STEM Society and Culture study area. Where students undertake double degrees, these are counted as two enrolments.

Population: Domestic NSW students who gave NSW as their permanent home location and who enrolled in an undergraduate course in 2010.

Source: DEEWR Higher Education Statistics Collection (Student Collection), unpublished data.

Topic 5: Employment outcomes

The completion of formal education may signify the beginning of a person's career, a change in career path or simply a formalisation of a set of skills. For those who have completed a formal education, their next step is usually employment.

The indicators in this section focus 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 aged less than 25 with a Bachelor degree.

5.1 VET graduates working in the field for which they are qualified

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

Current position

25 percent of NSW women aged 20 to 64 who hold a VET qualification are working in the same occupation as their training. This compares with 32 percent of men in the same age group.

Gender gap:

- Amongst VET graduates aged 20 to 64 years, women are 7 percentage points less likely than men to work in a field for which their training was intended.

The direction of change over time

There has been minimal change for either women or men between 2009 and 2011.

Discussion

The differences are greatest among women and men aged under 35 years (see Figure 3.12). For women aged 20 to 34, the gender gap is 14.1 percentage points, whereas for women aged 35 to 64 the gender gap is 1.3 percentage points. The gender gap ranges from 19 percentage points for women aged 20 to 24, to 7.8 percentage points for women aged 25 to 29 and 8.6 percentage points for women aged 30 to 34.

Further analysis is required to determine why there is such a large gap between men and women under the age of 35. Reasons for this may include the stronger vocational orientation of male-dominated courses and different further study choices of men.

Same occupation in this data is determined by NCVET at the ANZSCO four-digit or unit group level, and is derived from 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 training is available from 2009. Note that data has been reported here for the age group 20 to 64 years.

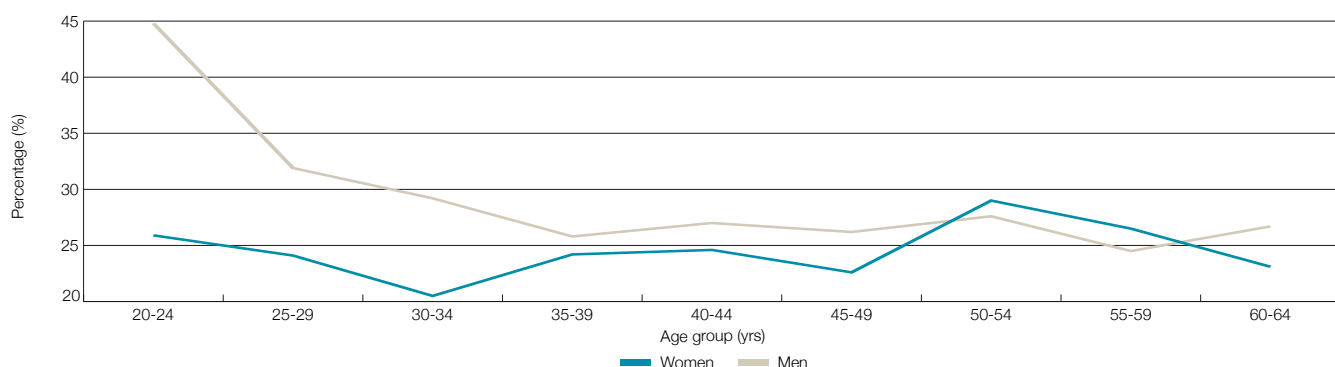
Year collected: 2011.

Data source: NCVET VOCSTATS, *Student Outcomes Survey 2011*.

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

Figure 3.12

Women and men working in the same occupation as they are qualified, by age, NSW, 2011



Population: VET graduates aged 20 to 64.

Source: NCVET VOCSTATS, *Student Outcomes Survey 2011*.

5.2 The graduate salary gap

Median starting salaries for young graduates

Current position

In 2011, the median starting salary for 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 \$54,000.

Gender gap:

- The graduate salary gap between NSW men and women is around 7.3 percent or \$4,000 per year.

The direction of change over time

Whilst the average starting salary for graduate women has grown consistently over the past 10 years, the salary received by graduate men has fluctuated (see Figure 3.13). As a result, the size of the graduate salary gap has varied.

The average gap for 2002 to 2010 was 5.3 percent, which was also the figure in 2002 at the beginning of the period. The gap was widest at 10.0 percent in 2008, before falling to 4.0 percent in 2010.

Discussion

The mining boom has created significant growth in the male-dominated disciplines of engineering and earth sciences. Engineering and earth sciences were the highest paying jobs for graduates in 2011. In the past decade, they have experienced significant growth in salary.

Although NSW women's median starting salary is the same as that of Australian women more widely, the NSW graduate salary gap is wider (\$4,000 compared to \$2,000 per year) because NSW graduate men's earnings were higher.

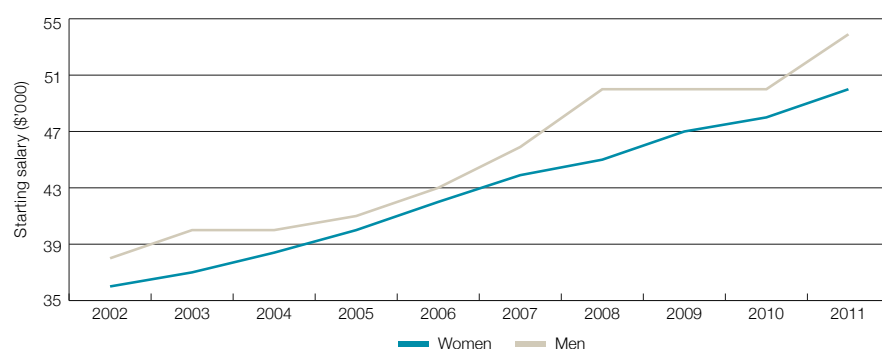
Year collected: 2011 and previous years.

Data source: Graduate Careers Australia, *Australian Graduate Survey*, 2011 unpublished data.

More information is available at: www.graduatecareers.com.au and www.abs.gov.au

Figure 3.13

Median starting salaries after graduation, under age 25, NSW, 2002 to 2011



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

Source: Graduate Careers Australia, *Australian Graduate Survey*, 2011.

Topic 6: Lifelong learning

Much of VET and higher education participation takes place in the years following compulsory schooling. The indicators in this section focus instead on the further education and training people undertake throughout their lifetime.

Indicator 6.1 refers to work-related training and education that people undertake to improve their skills in their current job and/or meet professional or occupational standards. Indicator 6.2 reports on government-funded adult and

community education (for example, community college) students.

6.1 Participation in structured work-related learning

Current position

NSW working women aged 15 to 64 years undertake work-related training slightly more frequently than men – 33 percent in the past 12 months in 2010, compared with 28 percent of men (see Figure 3.14).

Gender gap:

- Women's participation in work-related training is five percentage points higher than men's.

The direction of change over time

There was little difference between men and women in 2007 to 2009, but a gap appeared in 2010 as men experienced a drop in their work-related training participation rates.

Discussion

More research over a longer time period is needed to establish whether the decline in men's participation in work-related learning in 2010 is part of a trend.

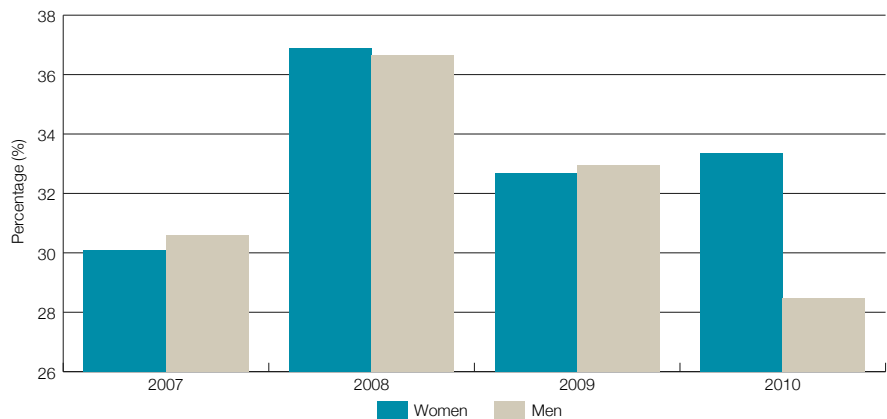
Structured work-related learning in the HILDA survey¹⁶ are courses that are planned in advance and have explicit attendance and assessment criteria.

Year collected: 2007 to 2010.

Data source: *Household, Income and Labour Dynamics in Australia (HILDA) survey*, Waves 7-10, 2007 to 2010.

More information is available at: www.melbourneinstitute.com/hilda/ and www.fahcsia.gov.au

Figure 3.14
Participation in work-related learning by sex, 2007 to 2010



For population aged 15 to 64 years.

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

Source: *Household, Income and Labour Dynamics in Australia (HILDA) survey*, Waves 7-10, 2007-2010.

¹⁶ This report uses unit record data from the *Household, Income and Labour Dynamics in Australia (HILDA) Survey*. The HILDA Project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either FaHCSIA or the Melbourne Institute.

6.2 Participation in adult and community education

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

Current position

Women in NSW make up the majority of enrolments in government-funded adult and community education (ACE) courses in NSW. In 2011, they accounted for 67 percent of total enrolments, or 164,284 out of 245,781 enrolments.

Gender gap:

- Women make up two-thirds of adult and community education course enrolments in NSW.

The direction of change over time

Women have made up a consistent percentage of ACE enrolments in recent years, namely two-thirds of total enrolments each year between 2007 and 2011.

Discussion

Rural and regional women are especially well-represented in government-funded ACE, making up over half of total female enrolments (85,947 enrolments or 52.3 percent of the total).

Aboriginal women make up 4 percent of female enrolments, over three times their population share.

Women from non-English speaking backgrounds, and women with a disability, are represented in government-funded ACE at levels slightly below their population share.

While women make up two-thirds of all ACE students, their share is greater still among non-vocational, recreational courses, where they accounted for nearly three-quarters of total enrolments in 2011.

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 2011, there were 46 reporting ACE providers.

Year collected: 2011.

Data source: Adult and Community Education statistics (unpublished data).

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

How does NSW compare?

The ABS publishes the government-funded *Gender Indicators Australia* series every six months. It sets out a range of indicators against which it is possible to examine how women in NSW are faring compared with all women in Australia. Detailed information is contained in the Appendix.

Based on indicators used in the *Gender Indicators, Australia* January 2012 edition, the education outcomes of NSW women are similar to those of other women in Australia. The most noticeable gaps, where women in NSW have better outcomes than other women in Australia, relate to education

participation rate (a 2.6 percentage point gap) and participation in work-related learning in the past 12 months (a 3.1 percentage point gap). Other indicators show a gap of 1 percentage point or less between women in NSW and women in Australia.