



Australian Government



Workplace
Gender Equality
Agency

Factsheet Series

Higher education enrolments and graduate labour market statistics



August 2019

Introduction

This fact sheet provides information about gender imbalances in Australian higher education, including gender segregation in fields of study and pay inequality in industries after graduation and on entering the workplace.

This fact sheet classifies fields of study and industries according to their gender dominance using the number of students/employees:

- Female-dominated (60% or more women)
- Male-dominated (40% or less women)
- Mixed (41% to 59% women).

Key findings

- Women represent 58.4% of students in higher education and out-number men in higher education completion rates
- Seven out of 10 fields of study are highly gender segregated
- 2018 salary data shows that a gender pay gap exists in favour of men across 16 out of 21 fields of study at an undergraduate level, and 16 out of 19 at a postgraduate (coursework) level
- Gender pay gaps persist in the majority of industries and gender pay gaps favouring men are more pronounced at postgraduate level
- In economic terms, lower salaries mean that women receive lower rewards from investing in their tertiary education than men.

Higher education enrolments

Women's participation in higher education is expanding in Australia. In 2007, women represented 57.6% of enrolled domestic students across all universities or other institutions. By 2017, this had risen to 58.4%¹

- Despite the increase in female enrolments, women and men continue to follow different educational paths and the pattern of female and male segregation into different industries remains
- Gender segregation is where women are dominant in traditionally female fields of study and men are dominant in traditionally male fields. For example, women dominate in areas such as Education, Health, Creative Arts and Society and Culture and men dominate in areas such as Information Technology, Architecture and Building and Engineering Related Technologies

Table 1 displays the gender segregation of women and men across fields of study. Overall, little has changed since 2007:

- Women's representation declined in the male-dominated field of Information Technology (-1.8 p.p) but grew in Engineering and Related Technologies (1.5 p.p).
- Women's participation increased significantly in the field of Agriculture Environmental and Related Studies (2.4 p.p).
- Men's representation grew across many disciplines, notably in the Creative Arts, which is a female dominated industry, and in Management and Commerce and Natural and Physical Sciences, which are mixed disciplines.

Table 1

Gender composition of domestic enrolments by field of study, 2007-2017.

		2017		Change between 2007 and 2017
Dominance (2017)	Field of study	Female (%)	Male (%)	Female (p.p)
Female dominated	Education	74.0%	26.0%	-0.4
	Health	73.6%	26.4%	-0.2
	Society & Culture	64.9%	35.1%	0.2
	Creative Arts	61.1%	38.9%	-2.4
Mixed	Agriculture Environmental and Related Studies	53.2%	46.8%	2.4
	Natural and Physical Sciences	50.4%	49.6%	-1.4
	Management and Commerce	46.6%	53.4%	-1.6
Male dominated	Architecture and Building	40.3%	59.7%	0.5
	Information Technology	17.1%	82.9%	-1.8
	Engineering and Related Technologies	16.1%	83.9%	1.5
Total		58.4%	41.6%	0.8

Source: Department of Education and Training (2019), Higher Education Statistics Data Cube (uCube) . Agency calculations. Total includes Fields of Studies not shown: Food Hospitality and Personal Services, Mixed Field Programs, Non-Award course. Gender composition calculations exclude genders other than male and female.

¹ For both undergraduate and postgraduate students, data is unavailable for Tourism, Hospitality, Personal Services, Sport and recreation. Data is also unavailable for Veterinary science at a postgraduate level.

Higher education award course completions

The gender composition of higher education award course completions in 2017 shows that a higher proportion of women graduated than men. Women currently represent 59.5% of all completed undergraduate and postgraduate higher degree courses.

Table 2
Award course completion for domestic undergraduate and postgraduate students by gender, 2007-2017

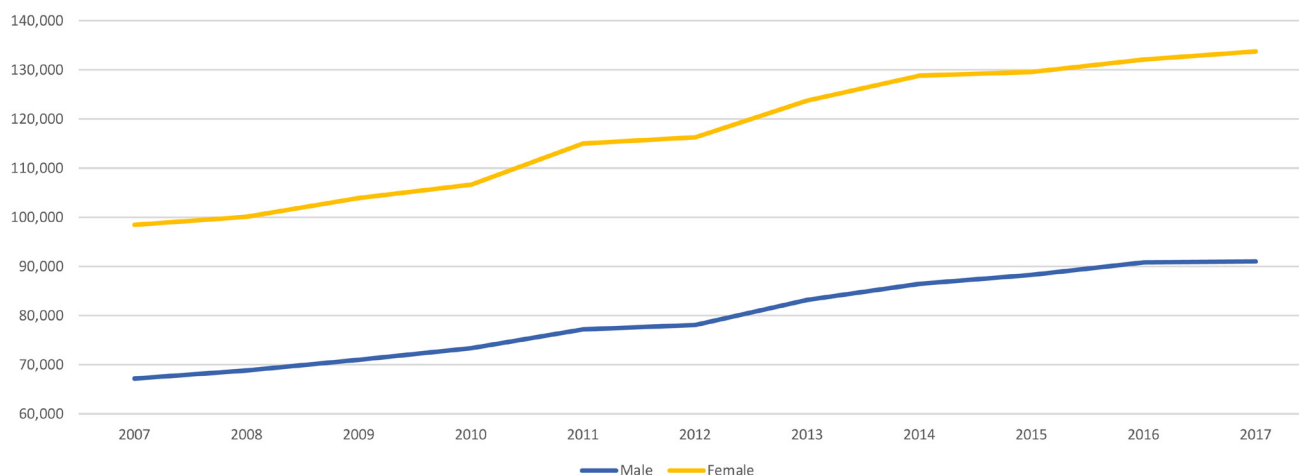
Award course completion by gender	Female	Male
2007	59.4%	40.6%
2017	59.5%	40.5%

Source: Department of Education and Training (2019), 2007-2017 Full-Year Domestic Award Course Completions. Agency graph.

Figure 1 (below) shows the number of students completing award courses by gender:

- Between 2007 and 2017, women's completion rates increased by 0.1 percentage point, from 59.4% to 59.5% in favour of women.

Figure 1
Award course completion for all domestic students by gender, 2007-2017



Source: Department of Education and Training (2019), Full-Year Award Course Completions. Agency graph.

Undergraduate and postgraduate employment

The percentage of graduates entering the labour market within four months of leaving university is relatively high (90%). Table 3 shows a fairly gender-balanced proportion of graduates entering the labour market and that:

- Full-time employment is higher after postgraduate study (coursework and research) than undergraduate study
- Slightly more women than men entered full-time employment after undergraduate study
- Slightly more men than women entered full-time employment after postgraduate study (coursework and research).

Table 3
Undergraduate and postgraduate employment outcomes (within a year of graduating), 2018

	Undergraduate (3 year degree)		Postgraduate (Coursework)		Postgraduate (Research)	
	Female	Male	Female	Male	Female	Male
Full-time employment	73.3%	72.2%	86.3%	87.8%	81.4%	83.4%
Overall employment	88.2%	84.8%	93.4%	92.1%	91.7%	91.8%

Source: Quality Indicators for Learning and Teaching (QILT) (2018), Graduate Outcome Survey National Report. Agency graph.

Undergraduate gender pay gaps by field of study

This section explores median¹ undergraduate starting salaries and gender pay gaps based on fields of study.

Gender pay gaps are the difference between the median or average earnings of women and men in the workforce. They are not the difference between two people being paid differently for the same job.

Gender pay gaps are a measure of women's overall economic position in the workforce in comparison to men and are the result of the social and economic factors that combine to reduce women's earning capacity over their lifetime.

Data from 2017 shows that graduate gender pay gaps in favour of men exist in most fields of study:

- Men's undergraduate median starting salaries were greater than women's in 16 out of 20 fields of education
- Dentistry had the largest gender pay gap, with men earning 23.5% more than women.
- Architecture and Building Environment (12.2%), Agriculture and Environmental Studies (12.1%), Pharmacy (10.3%) and Law and Paralegal Studies (7.7%) also had large differences in starting salaries
- The smallest differences in starting salaries in favour of men were in Medicine (1.5%), Nursing (1.8%), Teacher Education (2.7%), Communications (3.3%) and Health Services and Support (4.5%)
- In study areas of Engineering and Computing and Information systems, there is no gender pay gap
- The areas of Veterinarian Studies and Rehabilitation had small gender pay gaps in favour of women (-0.2% and -0.3 respectively).

¹ Note that the QILT Graduate Outcome Survey reports on median salary data. All salary data and gender pay gaps in this paper reflect medians rather than averages (mean).

Table 4

Undergraduate median full-time salaries and gender pay gaps by study area, 2018 (sorted largest to smallest gender pay gaps)

Study Area	Female (\$)	Male (\$)	Difference (\$)	GPG (%)
Dentistry	78,000	102,000	24,000	23.5%
Architecture and Built Environment	54,700	62,300	7,600	12.2%
Agriculture and Environmental Studies	55,000	62,600	7,600	12.1%
Pharmacy	46,000	51,300	5,300	10.3%
Law and Paralegal Studies	60,000	65,000	5,000	7.7%
Business and Management	55,500	60,000	4,500	7.5%
Psychology	58,600	63,200	4,600	7.3%
Science and Mathematics	60,000	63,000	3,000	4.8%
Health Services and Support	62,000	64,900	2,900	4.5%
Humanities, Culture and Social Sciences	57,400	60,000	2,600	4.3%
Creative Arts	50,000	52,200	2,200	4.2%
Social Work	65,400	68,000	2,600	3.8%
Communications	52,200	54,000	1,800	3.3%
Teacher education	65,200	67,000	1,800	2.7%
Nursing	61,500	62,600	1,100	1.8%
Medicine	72,000	73,100	1,100	1.5%
Computing and Information Systems	60,000	60,000	0	0.0%
Engineering	65,000	65,000	0	0.0%
Veterinary Science	55,000	54,900	-100	-0.2%
Rehabilitation	62,600	62,400	-200	-0.3%
Tourism, Hospitality, Personal Services, Sports and Recreation	52,200	N/A	-	-
All study areas	60,000	63,000	3,000	4.8%

Source: Quality Indicators for Learning and Teaching (QILT) (2018), Graduate Outcome Survey National Report, Agency calculations.

Postgraduate gender pay gap by study area

This section explores median postgraduate salaries and gender pay gaps based on fields of study.

Postgraduate study is associated with improved employment outcomes. The postgraduate employment rate is higher than the undergraduate rate (see Table 3), and median wages for postgraduates are substantially higher than undergraduate salaries.

Table 5
Postgraduate (coursework) median full-time salaries and gender pay gaps by study area, 2018 (sorted largest to smallest gender pay gaps)

Study Area	Female (\$)	Male (\$)	Difference (\$)	GPG (%)
Computing and Information Systems	76,000	96,000	20,000	20.8%
Dentistry	108,000	136,300	28,300	20.8%
Health Services and Support	81,100	100,000	18,900	18.9%
Architecture and Built Environment	57,400	70,000	12,600	18.0%
Business and Management	99,100	115,000	15,900	13.8%
Engineering	79,100	90,000	10,900	12.1%
Law and Paralegal Studies	70,000	77,500	7,500	8.7%
Humanities, Culture and Social Sciences	77,100	85,000	7,900	9.7%
Agriculture and Environmental Studies	69,000	75,600	6,600	8.7%
Psychology	78,300	85,800	7,500	8.7%
Nursing	83,500	89,700	6,200	6.9%
Social Work	70,600	74,700	4,100	5.5%
Science and Mathematics	75,000	78,300	3,300	4.2%
Rehabilitation	65,100	67,400	2,300	3.4%
Medicine	77,500	78,300	800	3.1%
Teacher Education	78,000	79,200	1,200	1.5%
Pharmacy	77,500	78,300	800	1.0%
Creative Arts	67,600	65,000	-2,600	-4.0%
Communications	70,000	65,000	-5,000	-7.7%
Veterinary science	55,000	N/A	-	-
Tourism, Hospitality, Personal Services, Sport and Recreation	N/A	N/A	-	-
All study areas	79,000	92,500	13,500	14.6%

Source: Quality Indicators for Learning and Teaching (QILT) (2018), Graduate Outcome Survey National Report, Agency calculations.

Data from 2018 confirms that postgraduate gender pay gaps exist in favour of men in most fields of study. The overall median postgraduate gender pay gap was 14.6%.

Men's postgraduate median salaries were greater than women's in 17 out of 19 areas of study:

- Computing and Information Systems and Dentistry had the largest gender pay gaps in favour of men (20.8%)
- Health Services and Support (18.9%), Architecture and Built Environment (18.0%) and Business Management (13.8%) and Engineering (12.1%) also had large gender pay gaps in favour of men
- The study areas with the lowest gender pay gaps in favour of men were Teacher Education (1.5%), Pharmacy (1.0%), Medicine (3.1%), Rehabilitation (3.4%) and Science and Mathematics (4.2%)
- The study areas of Creative arts and Communications both have gender pay gaps in favour of women (-4.0% and -7.7% respectively).

Graduate trainee program gender pay gap by industry

The Agency's data set classifies 'graduates trainees' as anyone employed in a formal graduate program (a structured program usually within larger business and government organisations offering a mix of on-the-job training and formal learning) and does not refer to individuals who have recently graduated from a tertiary education institution. A total of 8,599 graduates were captured in WGEA data during the 2017-18 reporting period. Within the WGEA sample there are over a fifth more male graduates (4,812) in a formal graduate program than female graduates (3,787).

Table 6
Median remuneration and gender pay gaps for professional graduates by industry, 2018¹

Industry	Median Total (\$,000)		GPG (%)
	Women	Men	Total
Health Care and Social Assistance	\$70,641	\$76,915	8.2%
Financial and Insurance Services	\$70,085	\$74,000	5.3%
Transport, Postal & Warehousing	\$68,584	\$71,400	3.9%
Professional, Scientific and Technical Services	\$61,320	\$63,543	3.5%
Wholesale Trade	\$64,350	\$65,045	1.1%
Manufacturing	\$74,520	\$75,053	0.7%
Electricity, Gas, Water and Waste Services	\$83,836	\$83,799	0.0%
Information, Media and Telecommunications	\$70,628	\$70,628	0.0%
Education and Training	\$76,988	\$76,944	-0.1%
Mining	\$107,443	\$105,811	-1.5%
Construction	\$76,517	\$75,000	-2.0%
Rental, Hiring and Real Estate Services	\$66,575	\$65,000	-2.4%
Public Administration and Safety	\$80,345	\$71,583	-12.2%
Accommodation and Food Services	(a)	(a)	(a)
Administration and Support Services	\$55,000	(a)	(a)
Arts and Recreation Services	(a)	(a)	(a)
Other Services	(a)	(a)	(a)
Retail Trade	(a)	(a)	(a)
Total	\$66,500	\$67,499	1.48%

Source: WGEA, 2017-2018 Dataset.

¹ Instances with less than 15 employees have not been included and are represented by (a)

The WGEA 2017-18 total-remuneration data for graduate-trainees shows that:

- The overall total remuneration gender pay gap for graduate trainees is 1.48%, in favour of men
- Health Care and Social Assistance and Financial and Insurance Services have comparatively large gender pay gaps in favour of men (8.2% and 5.3% respectively)
- Transport and Postal and Wholesale Trade also have gender pay gaps in favour of men (3.9% and 1.1% respectively)
- Manufacturing has a low gender pay gap in favour of men (0.7%), while Education and Training has a gender pay gap in favour of women (-0.1%)
- Information, Media and Telecommunications, and Electricity, Gas, Water and Waste Services have no total remuneration gender pay gaps
- Public Administration and Safety has a comparatively large total remuneration gender pay gap in favour of women (-12.2%)
- Construction (-2.0%), Education and Training (-0.1%), Mining (-1.5%), Public Administration and Safety (-12.2%) and Rental, Hiring and Real Estate services (-2.4%) also have gender pay gaps in favour of women

Conclusion

While more women than men graduate from higher education institutions and receive the same education as men, women continue to be undervalued in the majority of study fields and industries from the start of their career. The data confirms stark graduate and postgraduate gender pay gaps across the majority of study fields and industries in Australia.

In economic terms, lower salaries mean that women receive lower rewards from investing in their tertiary education than men.



Advice and assistance

For further advice and assistance,
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