



Factsheet Series



Higher education enrolments and graduate labour market statistics

April 2021

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 60.4% of students in higher education and outnumber men in higher education completion rates.
- 6 out of 10 study fields are highly gender segregated.
- 2020 salary data shows that a gender pay gap exists in favour of men across 15 out of 19 fields of study at an undergraduate level, and 14 out of 21 at a postgraduate (coursework) level.
- Gender pay gaps persist in most industries and gender pay gaps favouring men are more pronounced at a postgraduate level
- In economic terms, lower salaries mean that women receive lower rewards from investing in their tertiary education than men.

i Note: This factsheet features data from three sources. The 2020 QILT Graduate Outcomes Survey, 2019 Tertiary Enrolment data from the Department of Education, Skills and Employment and WGEA 2020 Graduate Trainee Program data. Each of these sources has a different methodology and the data is the most recent available but covers slightly different time periods. For this reason, it is important to note that the analysis in this factsheet is not comparing data from the different sources.

Covid-19

The ongoing Covid-19 pandemic has had a marked impact on the Australian labour market, and this includes graduate employment outcomes. Between 2019 and 2020, full-time undergraduate employment rates fell from 72.2% to 68.7%.

It is also likely that the global pandemic and declining graduate employment rates are having an impact on graduate gender pay gaps. In past years, the graduate gender pay gap has been wider than it was in 2020 and this could be progress or it could reflect the fluctuations experienced at large by employees within the Australian economy, including graduates.ii

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 2019, this had risen to 59.0%.
- 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 and Engineering Related Technologies.
- Domestic enrolments are highly gender segregated. Both male and female dominated fields have low participation rates for the opposite sex. Male participation in female dominated fields ranges from 25-39% whereas female participation in male dominated fields is still lower at between 17-19%.

Table 1 displays the gender segregation of women and men across fields of study. Overall little has changed since 2007, although there have been some notable movements:

- Overall women's representation has increased across fields of study, including in the male dominated industries of Information Technology and Engineering and Related Technologies
- Men's representation has grown in the Creative Arts and Education which are female dominated fields as well as in, Natural and Physical Sciences and Management and Commerce which are mixed fields
- Overall, compositional change has been slow, the largest change between 2007 and 2019 was in Agriculture, Environment and Related studies where female participation increased by 5.3 pp. This indicates that gendered norms have continued to influence the choices students are making about what to study over the 12 years of recorded data.

i Quality Indicators for Learning and Teaching (QILT) (2020), Graduate Outcome Survey National Report, Accessed 04 March 2021, https://www.qilt.edu.au/docs/default-source/gos-reports/2020-gos/2020-gos-national-report.pdf?sfvrsn=be0bec3c_2

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Note: Over time, median graduate salaries can be subject to volatile changes. Salaries are self-reported and can be influenced by factors such as the number of respondents or economic impacts such as the Covid 19 epidemic. However, there are recurrent patterns within the gender pay gaps which reflect the wider workforce and female median undergraduate salaries are consistently lower than male salaries.

iv Department of Education and Training (2020), Higher Education Statistics Data Cube (uCube), viewed 04 March 2021, available: http://highereducationstatistics.education.gov.au/

v ibid

Table 1
Gender composition of domestic enrolments by field of study, 2007-2019.

		20	Change between 2007 and 2019	
Dominance (2017)	Field of study	Female (%)	Male (%)	Female (p.p)
	Education	73.9%	26.1%	-0.5
Female dominated	Health	74.4%	25.6%	0.7
remaie dominated	Society & Culture	65.8%	34.2%	1.1
	Creative Arts	63.6%	39.1%	-2.6
	Agriculture Environmental and Related Studies	56.1%	43.9%	5.3
Mixed	Natural and Physical Sciences	51.1%	48.9%	-0.6
	Management and Commerce	47.0%	53.0%	-1.2
	Architecture and Building	41.6%	58.4%	1.9
Male	Information Technology	19.2%	80.8%	0.3
dominated	Engineering and Related Technologies	17.9%	82.1%	3.2
Total		59.0%	41.0%	1.4

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.

Higher education award course completions

The gender composition of higher education award course completions in 2019 shows that a higher proportion of women graduated than men. Women currently represent 60.4 % of all completed undergraduate and postgraduate higher degree courses.

Table 2Award course completion for domestic undergraduate and postgraduate students by gender, 2007-2019

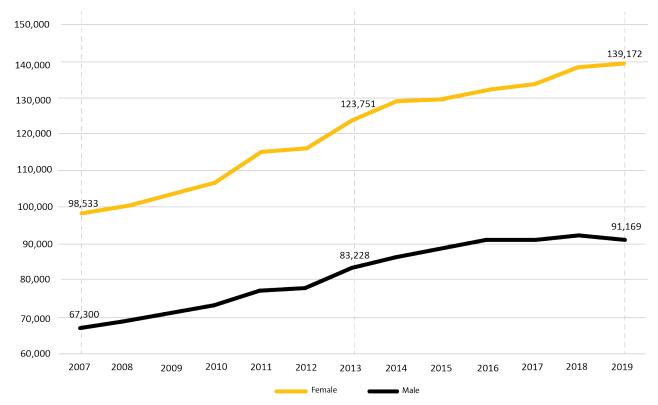
Award course completion by gender	Female	Male
2007	59.4%	40.6%
2019	60.4%	39.6%

Source: Department of Education and Training (2020), 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.

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

• Between 2007 and 2019, women's completion rates increased by 1 percent, from 59.4% to 60.4% in favour of women.

Figure 1
Award course completion for all domestic students by gender, 2007-2019*



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

Note* May include students who have requested their gender to be recorded as neither male nor female.

Undergraduate and postgraduate employment

The percentage of graduates entering the labour market within four months of leaving university is relatively high (between 80-90%). 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).
- Slightly more women than men entered overall employment after undergraduate study.
- Slightly more men than women entered full-time employment after postgraduate coursework and postgraduate research.
- Between 2019 and 2020, full-time undergraduate employment decreased for both males and females (by 3.7 and 3.2 pp respectively). The decline in overall undergraduate employment was narrower, with female employment declining by 1.7 pp and male employment by 1.8 pp between 2019-20.
- This decline was also present in the postgraduate coursework and research cohorts, with the
 exception of male research graduates who did not experience a decline in postgraduate employment
 between 2019-20.

Table 3
Undergraduate and postgraduate employment outcomes (within a year of graduating), 2019-2020

	Undergrad (3 year degre		Postgrad (Coursewor		Postgradu (Research)		Undergrad year degree	•	Postgrad (Coursewor		Postgrad (Research)	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Full-time employment	72.2%	72.3%	86.4%	87.8%	80.7%	81.7%	68.5%	69.1%	85	86.7%	79.4%	80.9%
Overall employment	87.9%	84.8%	93.2%	91.7%	91.5%	89.7%	86.2%	83.0%	91.8%	91.2%	90.3%	89.7%

Source: Quality Indicators for Learning and Teaching (QILT) (2019- 20), Graduate Outcome Survey National Report. Agency graph

Undergraduate gender pay gaps by field of study

This section explores median undergraduate starting salaries and gender pay gaps based on fields of study. 1

Gender pay gaps are the difference between the 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 2020 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 15 out of 19 fields of education.
- Dentistry had the largest gender pay gap, with men earning 11.9% more than women.
- Law and Paralegal Studies (7.1%), Business and Management (5.4%) also had large differences in starting salaries.
- The smallest differences in starting salaries in favour of men were in Nursing (1.8%), Medicine (1.7%), Health Services and Support (1.5%), Creative Arts (1.1%), Computing and Information Systems (0.3%) and Teacher Education (0.1%)
- In study areas of Pharmacy and Rehabilitation, there is no gender pay gap.
- The areas of Engineering and Social work had small gender pay gaps in favour of women (-0.9% and -2.9% respectively).

A comparison with data from 2019 – 20 shows that some graduate gender pay gaps increased by as much as 5 pp. The following areas experienced large increases:

- Communication increased from -3.8% in 2019 to 3.7% in 2020
- Dentistry increased from 5.1% in 2019 to 11.9% in 2020

However, there are also some study areas that experienced gender pay gap decreases of more than 5 pp. These were:

- Architecture and built environment decreased from 15.4% in 2019 to 3.7% in 2020
- Creative Arts decreased from 8.8% in 2019 to 1.1% in 2020

Declining graduate employment rates due to Covid 19 may be influencing the large increases and decreases in graduate gender pay gaps between 2019 and 2020.

i Data from the National Graduate Outcome Survey, conducted by the Social Research Centre, Quality Indicators for Learning and Teaching.

Table 4
Undergraduate median full-time salaries and gender pay gaps by study area, 2019-20 (sorted largest to smallest gender pay gaps in favour of men)

Study Area	Female 2019 (\$)	Male 2019 \$)	Female 2020 (\$)	Male 2020 (\$)	Difference 2019 (\$)	Difference 2020 (\$)	GPG 2019 (%)	GPG 2020 (%)
Dentistry	84,000	88,500	79,300	90,000	4,500	10,700	5.1%	11.9%
Law and paralegal studies	61,300	67,600	64,000	68,900	6,300	4,900	9.3%	7.1%
Business and management	57,600	60,000	59,100	62,500	2,400	3,400	4.0%	5.4%
Humanities, culture and social sciences	60,000	63,000	61,900	65,000	3,000	3,100	4.8%	4.8%
Science and mathematics	59,900	63,400	62,600	65,400	3,500	2,800	5.5%	4.3%
Architecture and built environment	55,000	65,000	62,600	65,000	10,000	2,400	15.4%	3.7%
Communications	54,800	52,800	55,300	57,400	-2,000	2,100	-3.8%	3.7%
Agriculture and environmental studies	56,200	60,500	60,100	62,300	4,300	2,200	7.1%	3.5%
Psychology	60,000	64,700	62,800	65,000	4,700	2,200	7.3%	3.4%
Nursing	62,600	63,000	64,200	65,400	400	1,200	0.6%	1.8%
Medicine	73,000	73,400	74,000	75,300	400	1,300	0.5%	1.7%
Health services and support	62,600	65,100	65,000	66,000	2,500	1,000	3.8%	1.5%
Creative arts	50,000	54,800	51,600	52,200	4,800	600	8.8%	1.1%
Computing and Information Systems	63,000	64,600	65,000	65,200	1,600	200	2.5%	0.3%
Teacher education	67,800	68,600	69,900	70,000	800	100	1.2%	0.1%
Pharmacy	48,000	48,000	49,600	49,600	0	0	0.0%	0.0%
Rehabilitation	64,700	65,000	65,000	65,000	300	0	0.5%	0.0%
Engineering	67,000	67,800	70,000	69,400	800	-600	1.2%	-0.9%
Social Work	67,600	66,700	70,000	68,000	-900	-2,000	-1.3%	-2.9%
Veterinary science	55,000	n/a	57,500	n/a	-	-	-	-
Tourism, Hospitality, Personal Services, Sports and Recreation	49,300	n/a	n/a	n/a	-	-	-	-
All study areas	61,500	64,700	63,400	65,000	3200	1600	4.9%	2.5%

Source: Quality Indicators for Learning and Teaching (QILT) (2020), 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, 2019-20 (sorted largest to smallest gender pay gaps in favour of men)

Study Area	Female 2019 (\$)	Male 2019 (\$)	Female 2020 (\$)	Male 2020 (\$)	Difference 2019 (\$)	Difference 2020 (\$)	GPG 2019 (%)	GPG 2020 (%)
Agriculture and envinmental studies	70,200	85,000	70,000	93,000	14,800	23,000	17.4%	24.7%
Architecture and built environment	63,200	70,000	62,300	77,000	6,800	14,700	9.7%	19.1%
Computing and information systems	89,900	92,900	81,900	100,500	3,000	18,600	3.2%	18.5%
Health services and support	83,500	99,100	83,500	100,000	15,600	16,500	15.7%	16.5%
Science and mathematics	77,000	87,700	83,300	97,000	10,700	13,700	12.2%	14.1%
Business and management	103,000	120,000	104,000	120,000	17,000	16,000	14.2%	13.3%
Law and paralegal studies	71,400	80,000	72,000	80,000	8,600	8,000	10.8%	10.0%
Nursing	85,300	90,000	86,400	93,200	4,700	6,800	5.2%	7.3%
Engineering	80,000	87,500	93,000	100,000	7,500	7,000	8.6%	7.0%
Social work	73,100	77,200	77,000	81,800	4,100	4,800	5.3%	5.9%
Teacher education	83,000	86,000	85,200	90,000	3,000	4,800	3.5%	5.3%
Humanities, culture and social sciences	79,100	84,000	80,300	84,000	4,900	3,700	5.8%	4.4%
Communications	65,000	74,600	70,000	72,000	9,600	2,000	12.9%	2.8%
Psychology	80,000	88,700	83,000	85,000	8,700	2,000	9.8%	2.4%
Medicine	78,000	80,000	78,300	78,500	2,000	200	2.5%	0.3%
Rehabilitation	66,800	71,900	68,900	68,500	5,100	-400	7.1%	-0.6%
Pharmacy	75,100	68,900	83,500	n/a	-6200	-	-9.0%	-
Dentistry	104,400	n/a	n/a	114,800	-	-	-	-
Veterinary science	60,000	n/a	59,700	n/a	-	-	-	-
Creative arts	70,000	78,000	65,000	n/a	8,000	-	10.3%	-
Tourism, Hospitality, Personal Services, Sport and Recreation	n/a	n/a	n/a	n/a	-	-	-	-
All study areas	81,300	95,000	83,500	96,000	13,700	12,500	14.4%	13.0%

i Data from the National Graduate Outcome Survey, conducted by the Social Research Centre, Quality Indicators for Learning and Teaching.

Data from 2020 confirms that postgraduate gender pay gaps exist in favour of men in most fields of study. The median overall postgraduate gender pay gap was 13.0%.

Men's postgraduate median salaries were greater than women's in 14 out of 21 areas of study:

- Agriculture and environmental studies had the largest gender pay gaps in favour of men (24.7%).
- Architecture and Built Environment (19.1%), Computing and Information Systems (18.5%), Health Services and Support (16.5%), Science and Mathematics (14.1%) and Business Management (13.8%) also had large gender pay gaps in favour of men.
- The study areas with the lowest gender pay gaps in favour of men were Communications (2.8%), Psychology (2.4%), and Medicine (0.3%).
- Rehabilitation have gender pay gaps in favour of women (-0.6%)).

A comparison with data from 2019 - 20 shows the graduate gender pay gap has increased by 5 pp in the following areas:

- Agriculture and environment studies increased from 17.4% in 2019 to 24.7% in 2020.
- Architecture and built environment increased from 9.7% in 2019 to 19.1% in 2020.
- Computing and information systems increased from 3.2% in 2019 to 18.5%.

There are also some study areas that experienced decreases of more than 5 pp:

- Communication decreased from 12.9% in 2019 to 2.8% in 2020.
- Psychology decreased from 9.8% in 2019 to 2.4% in 2020.
- Rehabilitation decreased from 7.1% in 2019 to -0.6% in 2020.

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.

The starting total remuneration for graduate trainees reveals differences across industries:

- The average total remuneration gender pay gap for graduate trainees is 3.7% in favour of men.
- Retail Trade has a comparatively large total remuneration gender pay gap in favour of women (-7.1%).
- Within the WGEA sample there are 7% more male graduates (8,248) in a formal graduate program than female graduates (7,181).

The following three industries have the largest total remuneration gender pay gaps in favour of men:

- Accommodation and Food Services (12.1%).
- Public Administration and Safety (10.3%).
- Administrative and Support Services (10.0%).

There are also a number of industries that have gender pay gaps in favour of women:

- Base salary gender pay gaps in favour of women: Construction (-5.1%), Transport Postal and Warehousing (-3.9%) and Information Media and Telecommunications (-3.5%) and,
- Total remuneration gender pay gaps in favour of women: Retail Trade (-7.1%), Information Media and Telecommunication (-5.0%), Construction (-4.9), and Transport, Postal and Warehousing (-3.8%)ⁱ.

i Total remuneration includes base salary, superannuation, performance pay, bonuses, allowances and other discretionary pay.

Table 6
Median remuneration and gender pay gaps for professional graduates by industry, 2019-20*

Industry	Women (\$)	Men (\$)	GPG (%)
Accommodation and Food Services	57,719	65,700	12.1
Public Administration and Safety	63,027	70,245	10.3
Administrative and Support Services	65,691	73,000	10
Financial and Insurance Services	72,444	80,067	9.5
Electricity, Gas, Water and Waste Services	81,331	89,069	8.7
Professional, Scientific and Technical Services	65,198	68,000	4.1
Education and Training	76,400	79,481	3.9
Healthcare and Social Assistance	83,715	84,949	1.5
Manufacturing	78,650	78,752	0.1
Rental, Hiring and Real Esate Services	67,500	67,500	0
Wholesale Trade	74,997	74,925	-0.1
Mining	113,970	113,380	-0.5
Transport, Postal and Warehousing	71,000	68,412	-3.8
Construction	82,135	78,310	-4.9
Information Media and Telecommunications	74,769	71,175	-5
Retail Trade	82,125	76,650	-7.1
Other Services	-	-	-
Agriculture, Forestry and Fishing	-	-	-
Arts and Recreation Services	-	-	-

Source: WGEA, 2019-2020 Dataset.

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 the most recent data, we have also seen that the changing economic landscape during the Covid 19 pandemic has affected graduate employment rates. Furthermore, the average gender pay gaps across all study fields for undergraduates entering the workforce has declined. This is possibly due to progress on gender equality, but could also be due to the impacts of the COVID-19 pandemic.

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

^{*}Instances with less than 15 employee units have not been included nd are represented by (-)





Advice and assistance

For further advice and assistance, please contact:

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