



Education and training



Main findings

- 54.4% of Queensland bachelor degree and post-graduate qualification holders are females.
- Their qualifications don't – as a rule – translate to earning power.
- Girls are more likely to complete secondary school.
- Fewer girls than boys study technology, sciences and maths in Year 12.
- Few young women pursue engineering, information technology or architecture at university.
- 15% of Queensland's apprentices are female, and they are mostly in hairdressing.
- Financial factors are the most common barriers preventing females from pursuing further study.
- Women with information technology qualifications have, of all fields of qualification, the highest average weekly earnings.



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Women are better educated
– but their qualifications aren't
translating into earning power.

Introduction

Education increases the ability of people to fully participate in their communities and in broader society. It increases socio-economic status, and associated life opportunities.

Education equity is a key contributor to labour market equity, which in turn determines economic equity. The levels of educational qualifications, and fields in which they are attained, have a large bearing upon employment opportunities and future income levels. While women are increasingly entering non-traditional fields, such as science, business, architecture and agriculture, significant gender divides exist in engineering, information technology, health and education.¹ Women's absence from these fields not only reduces their employment opportunities, with associated security and income, but also restricts competitive businesses' ability to recruit the best possible pool of talent and skills.

It is likely that greater post-school options for boys have an impact upon the higher secondary education retention rates for females, given the similar unemployment rates for male and female school leavers. While males and females enter university and the workforce in relatively similar numbers, many more males than females enter vocational training and education (only 15.2% of commencing apprentices in 2002–2003 were women), for which Year 12 is often not a prerequisite.

For the population as a whole, greater levels of education mean higher incomes. Although there is a significant gap between men's and women's incomes, for both sexes overall, the higher the level of education, the greater the income relative to others of that sex. Unemployment, closely associated with poverty, decreases as education levels increase.

**Women favour part-time study,
perhaps as a way to balance
“it all” or meet education costs**

Having lower incomes makes women, as a group, more sensitive to the cost of education, particularly post-secondary. Obtaining education to achieve greater workforce participation and thus greater financial security can improve women’s economic security. Although there are schemes in place to allow people to pay for their education after it is completed, women are still at a disadvantage compared to men. Women’s incomes, even when they have qualifications, are on average less than men’s incomes and so their capacity to repay education debts is reduced. However, the fact that more women than men are obtaining tertiary educational qualifications suggests that to some extent these barriers are being overcome.

More women than men study part-time, and this is likely to be related to balancing family responsibilities and cost factors.

The chapters “Financial security” and “Work” discuss the relationships between education, labour force participation and income in more detail.

Secondary education

Queensland secondary school apparent retention rates have increased significantly for both males and females over the past 25 years, with females generally being more likely than males to finish Year 12 since 1977.

Table 4

Apparent retention rates Years 7/8 to Year 12, Queensland 2003 (%)			
	1983	1993	2003
Females	44.4*	86.8	85.7
Males	36.1*	79.1	77.6

Source: ABS, 2003. Cat. No. 4221.0. *Schools Australia, 2003. Table 11.*
* Education Queensland, unpublished data.

The national apparent retention rate for female students from Year 8 to Year 12 in 2003 was 80.7% and for males 70.3%.²

More female than male secondary students studied part-time in 2003. Of all 4,089 part-time students in Queensland secondary schools, 58% were female. In Year 12, 62.1% of part-time students were female.

There are distinct subject differences between the sexes at high school. Table 5 shows that females are heavily over-represented in arts and humanities subjects.

Females are significantly under-represented in science, mathematics and technology subjects.



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Table 5

Subjects studied by Year 12 students, Queensland, 2002.					
Subject	No. students	Female	% Female	Male	% Male
Dance	1,126	1,076	95.6	50	4.4
Home Economics	1,777	1,634	92.0	143	8.0
Drama	3,711	2,899	78.1	812	21.9
Study of Society	467	364	77.9	103	22.1
Languages other than English (LOTE)	1,800	1,356	75.3	444	24.7
Health Education	899	673	74.9	226	25.1
Art	4,260	3,130	73.5	1,130	26.5
Business Communication and Technology	4,979	3,446	69.2	1,533	30.8
Legal Studies	3,462	2,396	69.2	1,066	30.8
Ancient History	2,721	1,825	67.1	896	32.9
Accounting	2,313	1,495	64.6	818	35.4
Biological Science	6,395	4,123	64.5	2,272	35.5
Modern History	2,188	1,397	63.8	791	36.2
Music	1,037	634	61.1	403	38.9
Film and Television	1,968	1,137	57.8	831	42.2
Geography	2,898	1,630	56.2	1,268	43.8
English	19,114	10,712	56.0	8,402	44.0
Maths A	13,169	7,335	55.7	5,834	44.3
Economics	1,453	766	52.7	687	47.3
Agricultural Science	513	254	49.5	259	50.5
Chemistry	4,306	2,054	47.7	2,252	52.3
Multi-strand science	5,174	2,449	47.3	2,725	52.7
Maths B	8,265	3,904	47.2	4,361	52.8
Marine Studies	1,219	552	45.3	667	54.7
Physical Education	5,458	2,096	38.4	3,362	61.6
Maths C	1,683	491	29.2	1,192	70.8
Physics	3,504	946	27.0	2,558	73.0
Information Processing and Technology	3,002	591	19.7	2,411	80.3
Graphics	1,718	281	16.4	1,437	83.6
Technology Studies	848	48	5.7	800	94.3
Engineering Technology	135	5	3.7	130	96.3

Note: State schools only.
Source: Education Queensland, 2003.

Post-secondary education

In 2003, 46.7% of Queensland females aged 15–64 had vocational and tertiary educational qualifications beyond secondary school, close to the national rate of 46.8% of women.⁴

In Queensland in 2002, women were more likely to hold a post-secondary qualification than men. Women held 55.5% of bachelor degrees, postgraduate certificates, diplomas and degrees; of the postgraduate degree holders, only 43.6% were female. This is mirrored in the proportion of students studying at those levels at present.^{5,6} The professionalisation of nursing has led in part to the increase in women's tertiary education participation.

Table 6

Highest educational attainment, Queensland, 2002 ('000).			
	Total	Females	% Female
Postgraduate degree	44.7	19.5	43.6
Graduate diploma/certificate	45.2	27.0	59.7
Bachelor degree	262.4	149.1	56.8
Advanced diploma/diploma	174.7	94.7	54.2
Certificate	441.9	127.6	28.8
Year 12	525.4	280.2	53.3
Year 11	158.2	93.6	59.2
Year 10 or below	785.6	441.5	56.2

Source: ABS, 2003. Cat. No. 6227.0. *Education and Work, Australia*. Table 13.

In 2002, there were 173,529 students at Queensland's eight publicly funded universities, of whom 54.4% were female.⁷

Clear distinctions in the broad study fields chosen by males and females continue on from Year 12 to university.

Women were under-represented in engineering, information technology and architecture/building and particularly over-represented in education and health (reflecting the high proportions of women in teaching and nursing).

While the figures for natural and physical sciences indicate more women than men studying science, the figures are skewed by the greater proportion of females studying life sciences, such as biology. Women remain under-represented in physics, earth and mathematical sciences.

Table 7

All students, all tertiary levels 2002 (Australia).			
Field	Male	Female	% Female
Education	23,140	66,251	74.1
Health	26,417	70,885	72.9
Creative arts	18,998	35,659	65.2
Society and culture	68,438	127,952	65.2
Natural and physical sciences	32,495	35,693	52.3
Management/commerce	120,654	120,529	50.0
Agriculture/environmental	10,015	8,517	46.0
Architecture/building	10,795	7,014	39.4
Information technology	59,271	19,814	25.1
Engineering	51,493	9,762	15.9

Source: DETYA, 2002. *Higher Education Statistics*, Table 21. All students by level of course, broad field of education, and gender, 2002.

Table 8

Proportion of female students enrolled in higher education science courses in Queensland, 2002.	
Subject	% Female
Biological sciences	56
Other sciences	54
Chemical sciences	51
Mathematical sciences	45
Physics and astronomy	34
Earth sciences	34

Source: Department of Education, Science and Training.⁸



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Table 9

University students, Queensland, by mode of attendance, by type of attendance, by gender, 2002.							
Gender	Internal		External		Combination of internal and external		TOTAL
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time	
Males	46,196	13,586	3,046	13,009	1,989	490	78,316
Females	52,157	16,640	3,574	15,135	4,059	999	92,564
Persons	98,353	30,226	6,620	28,144	6,048	1,489	170,880
Female %	53	55.1	54	53.8	67.1	67.1	54.2

Source: Department of Education Science and Training, 2003. Selected Higher Education Statistics, unpublished data.

Table 9 above shows that in 2002, women were more likely than men to study part-time and/or externally.

This pattern is mirrored by labour force participation rates and like those, is likely to be related to balancing family and other responsibilities, and the effect of having a lower income and being unable to afford to pay full-time fees (see "Barriers to education" in this chapter).

Vocational study and training

Vocational qualifications may be obtained by formal study through Vocational Education and Training (VET), as well as through trade apprenticeships.

VET is an industry-led system, delivering training packages through registered training organisations such as Technical and Further Education (TAFE) institutes, universities, schools and adult education providers. Most VET study undertaken in Queensland in 2002 by all students was in management and commerce (22.3%), engineering and related technologies (17%) and society and culture (10.4%).⁹

TAFE is the main VET provider. 54% of part-time students at Queensland TAFE colleges in 2001 were women.¹⁰ Of the 298,000 VET students in Queensland in 2002, 47.2% were women.¹¹

Only 14.1% of Australia's 126,400 apprentices in 2002 were women. This proportion is similar in Queensland. 15.2% of Queensland apprentices who commenced training in 2002–2003 were women, the majority in the traditional field of hairdressing. Table 10 (right) illustrates the proportion of females commencing in all fields for 2002–2003.

Table 10

Apprenticeship commencements, Queensland, 2002–2003.			
	Male	Female	% Female
Automotive tradespersons	1,623	28	1.7
Construction tradespersons	2,663	42	1.6
Electrical tradespersons	1,274	28	2.2
Food tradespersons	1,339	391	22.6
Intermediate machine operators	63	1	1.6
Intermediate plant operators	144	0	0.0
Intermediate service workers	10	347	97.2
Mechanical and fabrication engineering	1,215	12	1.0
Other assoc. professionals	7	9	56.3
Other intermed. production and transport profs	184	21	10.2
Other labourers	26	0	0.0
Other tradespersons	755	804	51.6
Science, engineering professionals	91	1	1.1
Skilled agriculture and horticulture profs	35	0	0.0
TOTAL	9,429	1,684	15.2

Source: Queensland Department of Education and Training, special data request.

Note: Hairdressing is in the category "Other tradespersons".

Despite women dominating the teaching profession, only 27.2% are principals.

Indigenous women's education

Indigenous students attend secondary school at a lower rate than the general community. However, Indigenous school students in Queensland are more likely to complete Year 12 than their counterparts elsewhere in Australia: 52.1%, compared with 36.3%, in 2001.¹² Indigenous women are more likely to complete high school than Indigenous men: 18.9% to 16.5% respectively, across Australia in 2001.¹³

Indigenous tertiary education rates have increased significantly since 1996 but participation is still much lower proportionately than the total population. More Indigenous women than men have post-school qualifications across every qualification level, except certificates.¹⁴ Out of 1,909 Indigenous higher education students (1.1% of all Queensland university students) attending the eight publicly funded universities in Queensland in 2002, 64% were women.¹⁵

Women as teachers

Women predominate as teachers in both primary and secondary school levels. In 2003, 77.9% of Queensland's 24,123 primary school teachers, and 56% of the 19,389 secondary school teachers were female.¹⁶ These proportions were similar in both government and non-government schools, and similar to national figures: 79.1% and 55.3%, respectively.

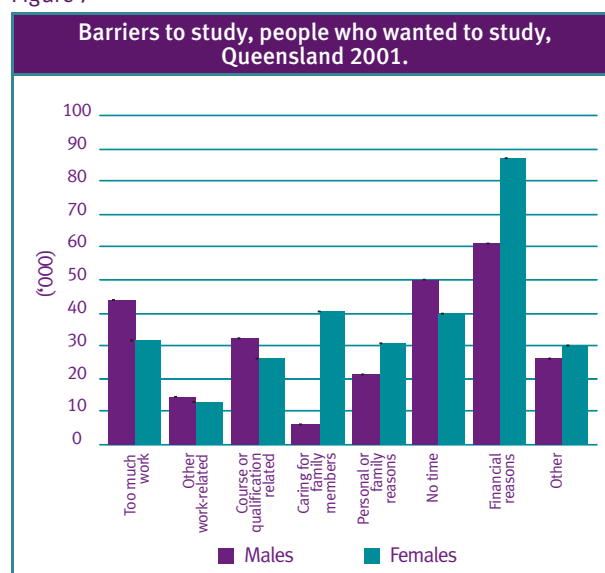
Despite the high representation of women in the teaching profession, only 27.2% of principals in Queensland are female.¹⁷

Women made up 38.1% of higher education academic staff in Australia in 2002.¹⁸

Barriers to education

More women than men in Queensland reported facing barriers to education. Women are much more likely to cite their responsibilities for caring for other family members as a reason that they cannot undertake further study. Financial factors are the most common barrier for both men and women. Women's lower earnings, however, mean the factors impact more (see chapter "Financial security").

Figure 7



Source: ABS, Cat No. 6278.0. Survey of Education and Training 2001 - companion data.



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Education and income

Future income is related to the field, as well as the level, of highest educational attainment, although this depends somewhat on whether employment is gained in that field.

Men with qualifications earn more than women with the same qualifications, even after taking into account women's greater propensity for part-time work. The largest gap between men's and women's pay is in the natural and physical sciences.

Despite the pay gap between men and women, income levels increase for both sexes as educational levels increase.

"Work" and "Financial security" chapters explore this issue further.

Generally, unemployment rates decrease as education levels increase.

Table 11

Average weekly earnings, by main field of highest educational attainment, Queensland, 2001.						
	Males		Females		Persons	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Natural and physical sciences	\$1,177.60	np	\$652.20	\$514.60	\$1,075.20	\$591.50
Health	\$1,071.70	\$664.50	\$854.20	\$505.30	\$925.30	\$517.50
Management and commerce	\$1,071.00	\$338.30	\$744.70	\$377.80	\$898.80	\$371.80
Society and culture	\$1,049.60	\$626.30	\$768.50	\$344.70	\$926.60	\$380.70
Education	\$1,040.90	\$707.40	\$802.00	\$430.40	\$874.60	\$459.60
Information technology	\$1,032.40	np	\$883.30	\$255.90	\$999.40	\$405.40
Creative arts	\$946.10	np	\$655.10	\$342.00	\$809.40	\$320.10
Engineering and related technologies	\$896.20	\$371.60	\$797.80	\$309.10	\$894.00	\$359.60
Architecture and building	\$887.60	\$463.20	np	np	\$877.50	\$434.10
Agriculture, environmental and related studies	\$884.10	np	np	np	\$895.00	np
Food, hospitality and personal services	\$617.60	np	\$513.10	\$239.80	\$576.70	\$239.80
Mixed field programmes	\$709.40	\$319.90	\$576.60	\$273.40	\$660.80	\$285.30
Field not determined	\$732.80	np	np	np	\$802.10	np
Total	\$833.70	\$365.20	\$671.50	\$319.20	\$776.10	\$330.50

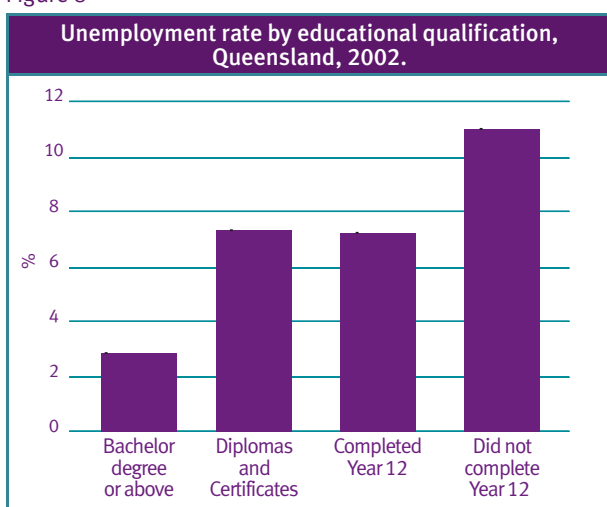
Source: ABS, Cat. No. 6278.0. Survey of Education and Training, 2001 – companion data. Table 11.

Table 12

Average usual weekly earnings, by level of highest educational attainment, Queensland 2001.						
Level of highest educational attainment	Males		Females		Persons	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Postgraduate degree	\$1,434.50	np	\$1,063.50	\$601.40	\$1,320.90	\$582.20
Graduate diploma/ graduate certificate	\$1,045.20	\$274.70	\$920.30	\$504.30	\$966.20	\$446.40
Bachelor degree	\$1,136.30	\$649.40	\$816.50	\$504.50	\$972.40	\$535.30
Advanced diploma/ diploma	\$1,028.20	np	\$693.70	\$367.60	\$895.90	\$380.80
Certificate III or IV	\$798.20	\$336.60	\$530.90	\$311.50	\$757.30	\$318.50
Certificate I or II	\$556.50	\$682.70	\$512.20	\$297.90	\$539.10	\$525.60
Certificate not further defined	np	np	np	np	np	np
Year 12	\$701.50	\$307.10	\$575.20	\$253.60	\$653.00	\$270.50
Year 11	\$643.70	\$398.20	\$593.40	\$297.60	\$629.20	\$313.70
Year 10 or below	\$730.60	\$328.20	\$575.20	\$286.10	\$673.90	\$295.10
Level not determined	\$860.90	np	np	\$423.30	\$866.00	\$393.40
Total	\$833.70	\$365.20	\$671.50	\$319.20	\$776.10	\$330.50

Source: ABS, Cat. No. 6278.0. Survey of Education and Training, 2001 – companion data.

Figure 8



Source: ABS, 2003. Australian Social Trends – Education and Training state summary.



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References

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