

Young adults in higher education

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Introduction

Australia's 41 publicly funded higher education institutions together enrolled 658,827 students in 1997, of whom 62,974 students (9.6 per cent) were international students and the remainder citizens or others with permanent residence status (DEETYA 1997b). Unfunded private institutions play a minor role, and all of the large-scale publicly funded institutions are part of the public sector and constituted individually as universities by either State or Commonwealth legislation (Marginson 1997b). The higher education sector, its governance and economic outlines, and recent policy developments affecting the sector, were described in *Australia's youth: reality and risk* (DSF 1998, pp. 85-99).

The 20-24 year old age group is the largest demographic bracket in higher education, constituting almost a third of the enrolments. Correspondingly, higher education plays a key role in the age group: about one in four of all 20 year olds are enrolled in higher education, and the overall participation rate in 1996 was 17.2 per cent of 20-24 year old women and 14.7 per cent of 20-24 year old men (DEETYA 1997a). The role of higher education extends beyond this proportion that is enrolled. Overall, higher education students are the most socially advantaged of young adults, the antithesis of those young adults, the least advantaged, who are neither in education nor in full-time employment.

As a group, higher education students are advantaged both in terms of where they have come from and where they are going. On average they come from families with higher than median incomes, and are significantly more likely to have attended one of the independent private schools, which in Australia is perhaps the key indicator of social status and economic affluence (Williams et al. 1993; Marginson 1997c). Similarly, all else being equal, these young adults are more likely to take part in the labour market, more likely to secure full-time work, more likely to enter professional careers and more likely to earn higher than average incomes and purchase significant assets during their lifetimes. Higher than average levels of education are also associated with social status, cultural attributes, and a greater capacity to deal with change.

For example in 1993, 41.5 per cent of those full-time workers in the highest income decile were in possession of bachelor-level higher education qualifications, compared to 3.3 per cent of those full-time workers in the lowest income decile (ABS 1996, p.233). In May 1997 the unemployment rate among those with higher degrees was 3.1 per cent and Bachelor degrees 3.6 per cent. This compared to 8.6 per cent for those whose highest status credential was a skilled vocational qualification, 12.5 per cent for those without post-school qualifications who did not finish secondary school, and 8.7 per cent for the labour force as a whole. The median duration of unemployment for the 51,800 unemployed with bachelor degrees or higher was 18.1 weeks, compared to 26.0 weeks for the 368,500 unemployed who had not completed secondary school (ABS 1997).

To what extent such advantages accrue to these young adults because of their higher education *per se*, and to what extent other forms of social position and cultural capital

determine their social advantages (either separately, or in association with higher education) – such as inherited wealth, parental incomes and occupations, language and identity, schooling, geographical residence and so on - is a question that social research has failed to settle. Nor has economic research settled the question of the effects of investment in human capital, and the respective roles of learned attributes ('human capital') and the credentialing function of education ('screening') in determining the returns to educated labour (Blaug 1985). The returns to a given quantity and quality of education are not constant, but sensitive to the larger economic and social settings, varying markedly between different national situations and over time. The various causal connections between higher education and social advantage remain a matter for theorisation and debate. Different assumptions about these causal connections are associated with divergent policy positions. For example, the recent emphasis on the role of education and technological change in endogenous growth theory has been associated with calls for a renewal of increasing public investment in education (EPAC 1994).

What *are* clear are the correlations. In aggregate, nations with a strong investment in education and training tend to be nations with stronger than average economies. Education is a *necessary condition* (albeit by itself not a sufficient condition) of economic growth and social prosperity. At the individual level, higher education is correlated to prior social advantage, and is also correlated to future social advantage. People without higher education face increasing disadvantages in the labour markets, the more so as the proportion of the labour force with higher education qualifications grows, and graduate labour moves down the occupational scales to displace non graduate labour.

In Australia these observable correlations have no doubt helped to sustain the increasing enrolment in higher education, despite the 1996 decision to increase the level and bring forward the immediacy of student obligations under the Higher Education Contribution Scheme (HECS), and the growing incidence of postgraduate fee charging. At the same time as making the changes to HECS, the Commonwealth also introduced funding for 'over-enrolments' – student numbers above the level of planned student load – and fixed that funding at the level of the HECS. In most disciplines this constituted 30-60 per cent of the average cost of student places. This provided institutions with an incentive to expand the number of places (Vanstone 1996), albeit at the risk of lower quality. The incentive was all the greater because in the same Commonwealth budget it was decided that institutions would no longer receive full Commonwealth salary supplementation to compensate them for the effects of rising labour costs. Institutions are experiencing a particularly difficult time financially, and for some the over-enrolment funding has been crucial. Thus the negative effects of the increased charges on demand for higher education have been at least partly compensated for by the positive effects of over-enrolment funding on the supply of higher education, though in each case the precise effects have yet to be identified.

Like all such generalisations, the relationships between higher education and prior social advantage, and higher education and subsequent social advantage, hold only at the macro

level. Higher education is now a mass sector, akin to VET in its broad social role, and the overall generalisations conceal many different individual stories. Though the bottom socio-economic quartile is under-represented, some students from poorer families do reach higher education. Not all graduates join the ranks of those with above average incomes, and as higher education grows, the proportion of such graduates increases. There is also much variation between the different institutions (Marginson 1997a) and the different courses, in both the social composition of the student body and the ultimate fate of graduates. The elite private schools are very strongly represented in the Medicine and Law courses of the oldest university in each State (Sydney, Melbourne, Tasmania, Adelaide, Queensland, WA), while graduates from those faculties have excellent prospects of a high-paying job. The social origins and social destinations of nursing or business students at a regional university are very different. When such cases are considered, claims that all higher education students are 'privileged' have little validity.

Further, even students from affluent families may not be affluent during their years of study. Many such students receive no financial support from their parents, and the value and distribution of government financial support have both fallen sharply since the mid 1970s when two thirds of all full-time students were in receipt of government living allowances. Most full-time tertiary students work part-time or casually at some stage during their courses (see below) but some also experience periods of unemployment, and in high unemployment regions their prospects can be little better than those of non-students of the same age.

On current trends, approximately 45 per cent of all today's school leavers will participate in higher education at some stage during their lifetime. About two thirds will enter university within two years of leaving school and the remainder at a later stage as mature aged students (West 1998). As it grows, higher education is becoming more universal, and more representative of the population as a whole. The more it becomes universal, the more the relative advantages enjoyed by higher education students in aggregate - in their origins and their destinations - will tend to diminish. At the same time, particular 'pockets' of advantage will survive in the most sought-after institutions and courses.

As they expand in their social reach, both the higher education sector and the VET sector contribute to another trend: the delay of young adult entry into the workforce, especially into full-time and career-style employment. Few full-time higher education students work full-time. While 30.2 per cent of all 20-24 year olds in higher education are enrolled part-time, and of these about three in four work full-time (ABS 1997), the overall role of part-time study has declined since the early 1980s. The apparent paradox generated by the phenomenon of delayed entry, in conjunction with the role of education, is that it is those young adults who enter the labour markets most quickly who have the weakest long term prospects. Those young adults who delay their entry into full-time work are the ones who enjoy the strongest ultimate relationship with work. During the years of study students in higher education are well represented in casual and part-time work, while graduates have

access to much the widest range of industries and occupations. A university degree is no longer a guarantor of full-time career work, but it is better than any other alternative.

Table 1: 20-24 year old students in higher education, 1987 and 1990-1997

	1987	1990	1991	1992	1993	1994	1995	1996	1997
20-24 years									
Female	52,558	69,273	79,967	89,877	97,397	98,810	101,455	106,550	112,814
Male	60,759	71,902	80,304	87,542	92,101	92,415	94,182	97,331	100,953
Persons	113,317	141,175	160,271	177,419	189,498	191,225	195,637	203,881	213,767
All students									
Female	197,350	255,655	284,862	298,812	307,631	313,417	325,357	344,222	358,655
Male	196,384	229,420	249,676	260,553	267,986	271,979	278,820	289,872	300,172
Persons	393,734	485,075	534,538	559,365	575,617	585,396	604,177	634,094	658,827
20-24 share									
Female (%)	26.6	27.1	28.1	30.1	31.7	31.5	31.2	31.0	31.5
Male (%)	30.9	31.3	32.2	33.6	34.4	34.0	33.8	33.6	33.6
Persons (%)	28.8	29.1	29.9	31.7	32.9	32.7	32.4	32.2	32.4

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

n.a. means data not available. 20-24 share refers to the number of enrolled 20-24 year olds as a proportion of the total enrolled students from all age groups.

Changes in enrolments

Between 1990 total higher enrolments rose from 485,075 to 658,827 (35.8 per cent). The number of 20-24 year olds rose by half again, from 141,175 to 213,767 (51.4 per cent). This more rapid growth of 20-24 year old enrolments was due to the compounding of 'pipeline' from growth in the 15-19 age group with both mature age entry and the growth of enrolments at the postgraduate stage. In the 1990s postgraduate education expanded at a phenomenal pace, much faster than the increase in undergraduate places (see below). The increase in the number of 25-29 year olds was almost as rapid as that of the 20-24 year old group. Overall, young adults increased their share of total higher education enrolments every year in the 1990s, that share rising from 29.1 per cent in 1990 to 32.4 per cent in 1997 (see Tables 1 and A1). The growth in the number of female 20-24 year olds at 62.9 per cent was more rapid than the growth of males at 40.4 per cent.

In 1997 the number of 20-24 year old rose by almost 9886 (4.8 per cent), a faster rate of growth than the previous year and also faster than the growth in higher education as a whole (3.9 per cent) which slowed slightly in comparison to 1996 (5.0 per cent). Two thirds of the increase in the number of young adults was due to a 5.9 per cent growth in the number of women. Growth in the 25-29 year old group was still more rapid (6.9 per cent), especially among women (7.5 per cent). The number of 15-19 year olds rose by 3.8 per cent. Growth was slowest in the over 30 age group (1.5 per cent).

Table 2: Female share of enrolments in higher education, by age group, 1987 and 1990-1997

	1987	1990	1991	1992	1993	1994	1995	1996	1997
	%	%	%	%	%	%	%	%	%
15-19 years	54.0	56.0	56.4	56.8	56.9	56.9	57.1	57.4	57.4
20-24 years	46.4	49.1	49.9	50.7	51.4	51.7	51.9	52.3	52.8
25-29 years	44.1	47.7	48.7	48.8	48.8	49.2	50.1	50.8	51.1
30 years plus	52.7	54.9	55.5	55.1	54.4	54.4	54.7	55.2	55.1
All students	50.1	52.7	53.3	53.4	53.4	53.5	53.9	54.3	54.4

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

n.a. means data not available. Female share refers to female enrolments as a proportion of enrolled persons.

Female and male enrolments

In 1975, when the cultural impact of the second wave of feminism was becoming widely felt, eight higher education students in every twenty were women. Women's relative participation was climbing upwards and by 1987 the number of women exceeded the number of men for the first time. By 1997 eleven students in every twenty were women. The male share of enrolments peaks in the 20-29 year period, when significant number of women are affected by child-rearing responsibilities. Among 25-29 year olds, full-time male enrolments exceed full-time female enrolments. Nevertheless women have held the *overall* majority of both 20-24 year and 25-29 year enrolments since the early 1990s and at this level their share of enrolments continues to increase. As Table 2 shows, in 1997 the proportion of 20-24 year olds who were women rose from 52.3 to 52.8 per cent. The number of women exceeded the number of men in full-time study (by 9.5 per cent), internal part-time study (7.8 per cent) and external part-time study (61.2 per cent). There were 13,595 external students in the young adult group in 1997.

In contrast, the female/male split of the 15-19 year old and 30 plus enrolments was little changed in 1997, though the trend is too brief to say that gender shares at these ages have stabilised. The proportion of women is very high among the youngest group (57.5 per cent) because women complete school in significantly greater numbers than men, and thus more women are eligible for school leaver entry into higher education.

Table 3: Growth of postgraduate education, 1987 and 1990-1997

	1987	1990	1991	1992	1993	1994	1995	1996	1997
Students by course level									
HD research	14,567	16,535	19,280	24,286	28,345	31,009	32,646	33,560	35,114
HD coursework	13,401	19,782	24,985	29,275	33,584	37,203	41,373	45,374	49,733
Other postgrad	35,745	42,445	48,638	49,894	51,714	48,560	50,106	53,561	52,923
Bachelor	264,177	340,598	380,590	413,321	430,204	442,910	454,846	474,754	496,394
Other	65,844	65,715	61,045	42,589	31,770	25,714	25,206	26,845	24,663
Total	393,734	485,075	534,538	559,365	575,617	585,396	604,177	634,094	658,827
Change from previous year (per cent)									
HD research	+ 4.8	+ 12.1	+ 16.6	+ 26.0	+ 16.7	+ 9.4	+ 5.3	+2.8	+ 4.6
HD coursework	- 4.3	+ 23.8	+ 26.3	+ 17.2	+ 14.7	+ 10.8	+ 11.2	+ 9.7	+ 9.6
Other postgrad	- 2.9	+ 8.1	+ 14.6	+ 2.6	+ 3.6	- 6.1	+ 3.2	+ 6.9	- 1.2
Bachelor	+ 3.1	+ 11.4	+ 11.7	+ 8.6	+ 4.1	+ 3.0	+ 2.7	+ 4.4	4.6
Other	- 4.8	+ 0.5	- 7.1	- 30.2	- 25.4	- 19.1	- 2.0	+ 6.5	- 8.1
Total	+ 1.0	+ 10.0	+ 10.2	+ 4.6	+ 2.9	+ 1.7	+ 3.2	+ 5.0	+ 3.9

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

HD means higher degree (includes Masters and Doctorates).

The overall gender split in education conceals the marked gender segregation by field of study, a segregation that is closely linked to corresponding patterns in the workforce, and one which maintains historic patterns of female disadvantage. If the position of women in the workforce is better than it was, gender power still works against women. In a review of human capital theory in Australia Preston (1997, pp. 72-73) finds that there is a 'raw' gender gap of 19.9 per cent between male and female earnings in Australia. Some of this can be explained by factors such as child-rearing but even so, the 'adjusted' gender gap is 14.5 per cent. Women earn 85.5 per cent of the wages of men, all else being equal.

In 1997 women in higher education outnumbered men in five of the ten broad DETYA fields of study. In the arts, humanities and social sciences women comprised 68.9 per cent of students. They were even more dominant in education with 74.0 per cent, and in health, consisting primarily of the largely female profession of nursing, with 73.5 per cent. These three large female-dominated course clusters led mostly to relatively lowly paid graduate jobs. In law and legal studies women were 51.7 per cent of students, and in the tiny field of veterinary science they held 62.2 per cent of places. In Engineering,

Architecture, Agriculture and Postgraduate Business courses men were much stronger than women. Men also dominated the PhD enrolments that lead to professorships.

It is not exaggerating much to say that men dominate the elite professions and women dominate the mass professions, notably those of teaching and nursing (though women's equal share of enrolments in law and also medicine qualifies the picture somewhat). In 1997 the five highest paying fields for first year out graduates were dentistry, medicine, optometry, earth sciences and engineering. These fields accounted for 28.0 per cent of male respondents to the annual Graduate Careers Council of Australia survey of graduates, but only 7.1 of female respondents (GCCA 1998).

Table 4: 20-24 year old students by course level, 1997

	15-19	20	21	22	23	24	20-24	25-29	total
Students by course level									
HD research	9	43	457	1044	1505	1689	4738	7495	35,144
HD coursework	15	173	682	1358	1838	2257	6308	11,773	49,733
Other postgrad	54	766	1615	2283	2507	2725	9896	11,790	52,923
Bachelor	174,448	63,178	48,120	34,350	23,536	17,827	187,011	51,461	496,364
Other	3485	1556	1179	1066	1041	972	5813	4361	24,663
Total	178,371	65,716	52,053	40,101	30,427	25,470	213,767	86,880	658,827

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

HD means higher degree (includes Masters and Doctorates).

In business studies 46.9 per cent of the 1997 students were women. The female shares in science (41.0 per cent), architecture and building (36.2 per cent) and engineering (14.1 per cent) were lower. Women also played the lesser role in higher degrees. In 1997 numbers were roughly equal in Masters courses, but only 43.0 per cent of doctoral students were women, because of the preponderance of men in science-based courses.

The growth of postgraduate education

In the first half of the 1990s the number of students in both research higher degree and coursework higher degree courses grew at unprecedented rates. Higher degree numbers rose by 103.8 per cent while Bachelor-level numbers rose by 45.7 per cent. Postgraduate numbers increased particularly rapidly in institutions in NSW, Queensland and the Northern Territory. After 1995 the growth of the research stream – research Masters and doctorates – slowed, but enrolments in coursework Masters continued to increase at

almost 10 per cent per annum (Table 3). With almost 140,000 students in 1997, postgraduate education was becoming a new layer of mass education.

It appeared that the overall growth of postgraduate education has not been inhibited by the introduction of direct fee-charging for vocationally-specific courses from 1987. Fee-based places were introduced as an addition to, rather than a substitute for, government-funded student load; though subsequent policy placed a cap on the use of load-funding at postgraduate stage, and the proportion of students who pay fees has risen. In 1997, 10,081 domestic postgraduates paid 'up-front' fees. In addition there were 13,111 international students who paid full cost fees: in total, both groups of direct fee-paying students comprised 16.8 per cent of all postgraduate students. Other students paid on the basis of the HECS or were the beneficiaries of tuition-free scholarships. Most students in higher degree by research programs received an Australian Postgraduate Award, a Commonwealth HECS exemption, or an institutional award of similar kind.

Table 5: Higher Education Participation Rates by enrolment type, 20-24 and 17-64 years, 1975, 1987 and 1990-1996

	participation per 100 of the relevant population cohort, age at 30 June								
	1975	1987	1990	1991	1992	1993	1994	1995	1996 p.
	%	%	%	%	%	%	%	%	%
20-24 years									
full-time	5.4	7.2	8.9	9.8	10.5	10.7	10.6	11.0	11.6
part-time	2.6	2.5	3.1	3.4	3.7	3.9	4.1	4.1	4.3
Total	9.0	9.7	11.9	13.2	14.2	14.7	14.7	15.1	15.9
17-64 years									
full-time	2.1	2.3	2.7	3.0	3.0	3.0	3.0	3.1	3.2
part-time	1.2	1.6	1.7	1.9	2.0	2.1	2.1	2.2	2.2
Total	3.3	3.8	4.4	4.8	5.0	5.1	5.1	5.2	5.4

Source: Department of Employment, Education, Training and Youth Affairs, *Higher Education Participation Rates*, 1997, AGPS, Canberra.

Part-time includes both internal and external participation. Includes overseas students. p. means data are preliminary. Unfunded private institutions are excluded (eg. Bond University).

Among 20-24 year olds in 1997, 4738 were enrolled in higher degrees by research and a further 6308 in mainly vocational Masters coursework programs. Together with Graduate and Postgraduate Diploma and Certificate enrolments, postgraduates comprised 9.8 per cent of all young adults. This was smaller than the role of postgraduate education at later year levels. In the 25-29 year age group, postgraduates constituted 35.7 per cent of students (Table 4). In the 40 and over group, postgraduates were in the majority.

Table 6: Higher Education Participation Rates by gender, 20-24 and 17-64 years, 1975, 1987 and 1990-1996

	participation per 100 of the relevant population cohort, age at 30 June								
	1975	1987	1990	1991	1992	1993	1994	1995	1996 p.
	%	%	%	%	%	%	%	%	%
20-24 years									
Female	6.9	9.4	12.2	13.7	14.7	15.6	15.7	16.1	17.2
Male	11.1	9.9	11.7	12.7	13.6	13.7	13.7	14.0	14.7
Persons	9.0	9.7	11.9	13.2	14.2	14.7	14.7	15.1	15.9
17-64 years									
Female	2.6	3.9	4.8	5.2	5.4	5.5	5.5	5.7	5.9
Male	3.8	3.8	4.1	4.4	4.6	4.7	4.7	4.8	4.9
Persons	3.3	3.8	4.4	4.8	5.0	5.1	5.1	5.2	5.4

Source: Department of Employment, Education, Training and Youth Affairs, *Higher Education Participation Rates*, 1997, AGPS, Canberra.

Part-time includes both internal and external participation. Includes overseas students. p. means data are preliminary. Unfunded private institutions are excluded (eg. Bond University).

Participation rates

Education participation rates express the number of people enrolled in education as a proportion of the relevant age group in the population. Participation is measured by two different methods. One is to calculate the number of people attending an institution at a certain point in time, as in the ABS surveys. The other is to use administrative data based on the enrolments that occurred over a whole year, the method most often used by DETYA. The latter method produces higher rates of participation (ABS, 1996, pp. 113-114). Nevertheless, trends may be measured with equal accuracy in either data set.

As the previously reported data on student numbers suggest, between 1990 and 1996 the rate of participation of 20-24 year olds rose substantially, from 11.9 to 15.9 per cent of the population cohort. Full-time participation increased every year except in 1994 (Table 5). Female participation rose from 12.2 to 17.2 per cent, while male participation rose more modestly, from 11.7 to 14.7 per cent (Table 6). Table 7 shows that there were increases in participation across the whole age group, for every age and for both full-time and part-time students. This pattern of increasing participation was maintained in 1996; 1997 data were not available at the time of writing.

By 1996 well over one in four 20 year old women were enrolled in higher education (28.5 per cent), of whom 25.1 per cent were full-time students. One in five men aged 20 were enrolled in higher education (21.2 per cent), of whom 18.4 per cent were full-time.

Table 7: Participation of 20-24 year olds in Higher Education, by Enrolment Type and Gender, 1990, 1995 and 1996

	1990			1995			1996 p.		
	FT	PT	Total	FT	PT	total	FT	PT	total
Female									
20 years	19.2	2.4	21.7	24.0	3.3	27.3	25.1	3.5	28.5
21 years	11.8	3.6	15.4	16.1	5.3	21.5	17.4	5.5	22.9
22 years	6.6	3.4	10.0	9.7	5.0	14.7	10.7	5.2	16.0
23 years	4.2	3.2	7.4	6.0	4.6	10.6	6.7	4.7	11.4
24 years	2.9	2.9	5.8	4.1	4.2	8.3	4.4	4.4	8.9
20-24 years	9.1	3.1	12.2	11.7	4.5	16.1	12.5	4.7	17.2
Male									
20 years	15.2	2.4	17.7	18.0	2.7	20.6	18.4	2.8	21.2
21 years	11.2	3.4	14.6	13.7	4.2	17.9	14.5	4.5	18.9
22 years	7.5	3.3	10.8	9.5	4.2	13.7	10.2	4.4	14.5
23 years	5.1	3.2	8.3	6.6	3.9	10.5	7.1	4.0	11.0
24 years	3.5	2.9	6.4	4.6	3.6	8.3	4.9	3.8	8.7
20-24 years	8.6	3.1	11.7	10.3	3.7	14.0	10.8	3.9	14.7
Persons									
20 years	17.2	2.4	19.6	20.9	3.0	23.9	21.7	3.1	24.8
21 years	11.5	3.5	15.0	14.9	4.8	19.6	15.9	4.9	20.9
22 years	7.1	3.4	10.4	9.6	4.6	14.2	10.4	4.8	15.2
23 years	4.6	3.2	7.9	6.3	4.2	10.6	6.9	4.3	11.2
24 years	3.2	2.9	6.1	4.4	3.9	8.3	4.7	4.0	8.8
20-24 years	8.9	3.1	11.9	11.0	4.1	15.1	11.6	4.3	15.9

Source: Department of Employment, Education, Training and Youth Affairs, *Higher Education Participation Rates*, 1997, AGPS, Canberra.

Includes overseas students. FT means full-time, PT means part-time and includes both internal and external students. p. means data are preliminary. Unfunded private institutions are excluded.

International students

As previously noted (DSF 1998, p. 94), the inclusion of international students in the data tends to exaggerate rates of participation in higher education. In the calculation of participation rates all of these international students form part of the numerator, which is the total number of students. However, only some of them appear in the denominator, which consists of the domestic population cohort plus international students resident for

twelve months or more. To remove international students from the numerator would understate participation rates, because some of these students would still appear in the denominator. Because the number of international students has grown rapidly since the late 1980s, the size of this exaggeration has increased over time (DEETYA 1997a). Nevertheless, between 1995 and 1996 the increase in the participation of 20-24 year olds was much the same whether or not international students are included in the calculations.

State/Territory variations

There are marked differences between the States/Territories in rates of participation of 20-24 year olds. In 1995 there was high participation in the ACT (25.4 per cent) and Victoria (17.6 per cent). Participation rates in WA (14.4 per cent), Tasmania (14.2 per cent), NSW (14.1 per cent), SA (14.0 per cent), Queensland (12.4 per cent) and the Northern Territory (7.9 per cent) were below the national average (DEETYA 1997a).

Inter-State comparisons are complicated by the presence of international students, and by student mobility between States/Territories. When international students are removed and all domestic students returned to States/Territories of permanent residence, the rate of participation rises to 9.0 per cent in the NT, and drops sharply in the ACT (to 17.1 per cent) and WA (11.8 per cent). The ACT remains the highest participating State/Territory.

Higher education and VET

In 1997, less than one in ten students commencing an undergraduate or postgraduate higher education course (22,437 out of 266,299) had earned their highest qualification at Diploma or Associate Diploma level in Technical and Further Education (TAFE). Almost one in three (84,580) had received prior higher education qualifications, while 122,910 students were commencing solely on the basis of a completed secondary schooling. NSW enrolled the highest proportion of its new students out of TAFE, 10.3 per cent.

However, many commencing students enrol in postgraduate courses that normally require prior undergraduate study. This suggests that data on commencements at bachelor level can provide a more useful comparison between entry from school, entry from TAFE, and other entry. The scope for entry from TAFE is particularly significant for young adults who lack the requisite school leaver qualifications, and are understandably reluctant to enter school as adult students. In that respect TAFE has the potential to provide second chance entry opportunities that might have the potential to increase the share of enrolments held by students from less advantaged backgrounds.

Here the data for 1997 reveal a small but significant growth in the number entering on the basis of a complete or incomplete TAFE course, from 11,819 (6.1 per cent) of bachelor level entrants in 1996 to 14,320 (7.9 per cent) in 1997. There was a slight growth in the

proportion of all commencers with secondary education completed at a TAFE college or another institution apart from school, from 1.2 to 1.4 per cent. The use of mature age or other special entry provision declined, and there was a slight fall in the proportion of commencing students entering on the basis of final secondary results, from 45.8 per cent in 1996 to 45.2 per cent in 1997 (DEETYA 1997b).

These data might appear to suggest that links between TAFE and higher education are minor. However, relationships between TAFE and higher education extend well beyond the role of TAFE in undergraduate entry. There has been much cross-sectoral activity in recent years, though not all of it has been widely or fully understood.

For the past decade policy makers have emphasised the need to align credentialing, entry requirements and course content across the higher education and TAFE sectors, in order to facilitate the recognition of qualifications, reduce duplication, and increase the potential for cross-sectoral student movement (for example see NBEET 1995). For the most part these policies have been premised on an 'upward mobility' relationship between TAFE and higher education. In this model TAFE courses, seen as lower in status and lower in their degree of difficulty, are preparatory for equivalent higher education courses. The main objective of policy is then to encourage full credits for TAFE studies at the point of entry into higher education. However, this model only works in practice in cases where the respective courses are readily aligned to form a homogenous set, when the contents and methods are very similar. The 'upward mobility' model has taken root in parts of business studies and engineering, and in a small number of professional and sub-professional fields, such as nursing in some States.

The failure to achieve a universal credit transfer system has disappointed some. Nevertheless, the expectation was unrealistic. The post-school sectors are heterogeneous. TAFE courses tend to be shorter and are often more immediately market responsive than higher education courses. They are not necessarily easier to do than are higher education courses, although this varies by discipline. They are often more occupationally specific, resting on continuing liaison with industry. TAFE prepares many students for occupations with no equivalent or near equivalent in higher education (and higher education does the same in relation to TAFE). Thus TAFE courses are not necessarily subsumed in one or another higher education course, and the logic of credit 'banking' is not always operative. A universal credit transfer system could only be achieved by ignoring the specific contents of course, by collapsing existing differences between the sectors or alternately, by requiring all TAFE courses to feed into a more advanced higher education course in the same area. All of these developments would have led to unanticipated costs. The resulting loss of educational and vocational diversity would have severely narrowed the options available to students, governments and employers.

This is not to argue that existing cross-sectoral collaboration and credit transfer arrangements are adequate. Rather, it is to propose a more complex and more rewarding view of cross-sectoral relations than that suggested by the vertical 'upward mobility'

model, in which TAFE courses and qualifications are always seen as inferior to their higher education 'equivalents'. A lateral view of cross-sectoral relations enables recognition of the fact that there is much more student movement from TAFE to higher education, than the other way round. Golding estimates that higher education/ TAFE movement is three times the size of TAFE/ higher education movement.

Table 8: Higher education graduates by course level, 1987 and 1990-1996

	1987	1990	1991	1992	1993	1994	1995	1996	<i>Female ratio in 1996</i>
									<i>%</i>
Course level									
HD research	1733	2187	2558	2712	3199	3931	4272	4724	36.0
HD course-work	2522	4039	5461	7285	9042	10,822	12,277	14,711	45.5
Other postgrad	13,913	15,871	19,126	20,570	22,540	22,179	22,164	24,191	59.8
Bachelor	48,421	58,338	67,370	79,847	90,146	97,188	98,043	97,852	58.7
Other	13,668	14,186	13,046	10,169	7933	4834	4190	3855	41.8
Total	80,257	94,621	107,561	120,583	132,860	138,954	140,946	145,333	53.2

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

HD means higher degree (includes Masters and Doctorates).

Many graduates enrol in TAFE courses in business or communications to increase their skill base. Whereas students moving from TAFE to higher education tend to be younger, completing their courses in close sequence, those moving in the other direction are typically older and may delay their entry into TAFE for some years. Students moving from TAFE to higher education are likely to be qualification-motivated and to study in an area closely related to their TAFE course. Students moving in the opposite direction are more likely to be skill-motivated and to move into a new area of study (Golding et al. 1995, pp. 10-15).

Further, cross-sectoral relations extend beyond credit transfer and articulation, to include also cross-sectoral institutions with varying degrees of integration, and combined cross-sectoral courses such as those offered by Monash University at its Berwick campus. Victoria University of Technology, a cross-sectoral institution, is currently working on the partial integration of course development across both sectors. Potentially, these forms of collaboration offer the potential for a relationship based on genuine equality of respect, while preserving the identities and the distinct contributions of both sectors.

Students, graduates and work

The great expansion of participation in the last decade has been associated with an equally rapid expansion in the number of graduates entering the labour market. Between 1990 and 1996 the number of new courses completed rose from 94,621 to 145,333 (53.6 per cent). The number of research higher degrees doubled and coursework higher degrees rose by more than three and a half times. However the number of sub-bachelor level

qualifications fell substantially, following the absorption of former college of advanced education programs into the now unitary university sector (Table 8).

The fields of study exhibiting the most rapid growth in graduate numbers was business studies and related courses in administration and economics, from 16,856 graduates in 1990 to 33,170 in 1996 (96.8 per cent). Providing only the third largest number of graduates in 1990, business had moved to first place by 1995 (Table 9). A business qualification signified a broad generalist education with a vocational twist. Business graduates could apply for work with a very wide range of private and public employers, the more so if their degree included accounting and/or business computing.

Other fields exhibiting stronger than average growth between 1990 and 1996 were health (83.2 per cent), law and legal studies (73.4 per cent), science (64.7 per cent), engineering and surveying (61.7 per cent), and the arts, humanities and social sciences (55.6 per cent). State governments were in increasing fiscal difficulty during the 1990s, lead to restraints of and reductions in State education budgets, and dampening the demand for new teachers. The annual number of graduates in education fell slightly over the period, from 22,808 to 22,262, and education moved from the largest field to the third largest.

Between 1995 and 1996 the total number of graduates rose by 0.5 per cent; the number of 20-24 year old graduates increased at an identical rate. The number of young adult women graduates actually fell slightly, from 38,647 to 38,548. The number of men in the age group rose from 28,119 to 28,541. In the older age brackets there was more pronounced growth (Table 10). In terms of the fields of study, year on growth in business studies graduates was marked (10.8 per cent), and there was a 9.0 per cent increase in law.

Table 9: Higher education graduates by broad field of study, 1987 and 1990-1996

	1987	1990	1991	1992	1993	1994	1995	1996	<i>Female ratio in 1996</i>
									<i>%</i>
Field of study									
Business etc.	11,829	16,856	19,915	24,136	27,365	28,692	29,924	33,170	45.0
Arts/Human/SS	17,137	19,607	22,406	25,434	27,244	29,262	29,759	30,503	68.7
Education	22,779	22,808	25,063	24,657	25,316	24,067	23,234	22,262	73.1
Health	7436	10,955	13,145	16,173	18,719	20,068	20,066	20,095	78.1
Science	10,075	12,086	13,844	15,294	16,999	18,712	19,122	19,910	42.5
Engineering	4703	5156	5392	6051	6909	7520	8110	8336	13.6
Law etc.	2895	3231	3494	3965	4846	5163	5140	5601	47.0
Architecture	1580	1966	2181	2461	2576	2715	2741	2945	34.9
Agriculture	1502	1602	1753	2010	2474	2348	2401	2153	37.0
Veterinary Sci	321	354	368	402	412	407	449	358	58.1
Total	80,257	94,621	107,561	120,583	132,860	138,954	140,946	145,333	56.5

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

Business includes Economics, Administration and Management. Arts/Human/SS refers to Arts, Humanities and Social Science courses. Engineering includes Surveying. Law includes Legal Studies. Architecture includes Building.

Graduate outcomes

Notwithstanding the growth in the number of higher education graduates during the last decade, the graduate population has retained a relatively advantaged rate of employment/unemployment, approximately half the unemployment rate in the labour force as a whole (ABS 1996; ABS 1997). In all fields of study, long term employment prospects are good. Nevertheless, many new graduates face difficulties in their first year in the full-time workforce. In that year there is considerable variation in the graduate experience, by field and level of study.

Table 10: Higher education graduates by gender and age, 1995 and 1996

	1995			1996			change 1995-1996		
	female	male	persons	female	male	persons	female	male	persons
							%	%	%
15-19 years	6205	2814	9019	5950	2623	8573	- 4.1	- 6.8	- 4.9
20-24 years	38,647	28,119	66,766	38,548	28,541	67,089	- 0.3	+ 1.5	+ 0.5
25-29 years	10,912	9798	20,710	11,645	10,573	22,218	+ 6.7	+ 7.9	+ 7.3
30-39 years	13,868	12,842	26,710	14,440	13,741	28,181	+ 4.2	+ 7.0	+ 5.5
40-49 years	8424	6046	14,470	9314	6294	15,608	+ 10.6	+ 4.1	+ 7.9
50 years plus	2092	1179	3271	2206	1458	3664	+ 5.4	+ 23.7	+ 12.0
Total	80,148	60,798	140,946	82,103	63,230	145,333	+ 2.4	+ 4.0	+ 3.1

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

HD means higher degree (includes Masters and Doctorates).

Unfortunately analysis is hampered by the fact that the principal data collection of a census type – the Graduate Careers Council of Australia's (GCCA's) survey of graduate employment and salaries – falls too early in the year after graduation to provide a clear picture of graduate outcomes. The GCCA data are collected nominally in April, actually between February and May, depending on the institution. In some fields such as medicine the immediate future of graduates has normally been resolved by the time of the GCCA survey. In the case of graduates in generalist disciplines in the humanities, social sciences and natural sciences – fields in which many graduates often take time to acquire their first career job - job searching may have only just begun. At the time of the survey in 1997, 18.7 per cent of respondents stated that their employment was short-term, with 77.4 per cent describing it as permanent (GCCA 1998). Of course for some graduates, a February-May survey falls during the vacation period or immediately after.

Further, first degree graduation has different meanings, depending on the field of study. In some professional fields such as engineering, law and medicine, it is often the only degree. Graduation means that all award course preparation for the profession has been completed, although there may be a period of professional training or induction before becoming a fully-fledged professional. In fields such as humanities or sciences, for many graduates the first degree is merely the first of two qualifications, with the second vocationally specific, or a more advanced training in an academic discipline. In such fields, those graduates not going on to further study and entering the labour market at the end of the first degree will tend to fall among the lower achievers of their cohort – in contrast to fields such as medicine. For all of these reasons the GCCA data should be used with great care when making cross-discipline or cross-institutional comparisons.

Table 11: Activities of Bachelor level higher education graduates in April of the year following graduation, 1995 and 1996 graduates

Activity in April following graduation	1995 graduates in 1996			1996 graduates in 1997		
	female	male	persons	female	male	persons
	%	%	%	%	%	%
In full-time study	19.4	21.0	20.0	20.8	22.6	21.5
In full-time employment	53.2	59.2	55.5	50.8	56.9	53.2
Seeking full-time employment						
Working part-time or casual	8.1	6.4	7.4	8.9	6.6	8.0
Unemployed	5.0	7.2	5.8	5.2	7.3	6.0
Not seeking full-time employment						
Working part-time or casual	9.2	3.1	6.8	9.4	3.4	7.1
Seeking P-T or casual, unemployed	1.1	0.5	0.8	1.0	0.5	0.8
Unavailable for full-time study or employment	4.1	2.7	3.5	3.9	2.6	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Graduate Careers' Council of Australia (GCCA), *Graduate destinations survey*, GCCA, Melbourne.

P-T means part-time.

The GCCA data show that in the first half of 1997, 21.5 per cent of the bachelor-level graduates from 1996 had enrolled in further study, 53.2 per cent were in full-time employment and 14.0 per cent were seeking but had not obtained full-time work. Altogether, 6.8 per cent were unemployed, a slight increase from 6.6 per cent of 1995 graduates in 1996. In 1997, male graduates were more likely than were the female graduates to be in full-time study or full-time employment, and also more likely to be unemployed (7.8 to 6.2 per cent). Women were much more likely to be working part-time or in casual employment (18.3 to 10.0 per cent). Table 11 provides details. Of the bachelor degree graduates in full-time employment, males (57.4 per cent) were more likely than females (34.6 per cent) to be working in the private sector. Almost three quarters were working in a professional or management position (GCCA 1998). Altogether, at the time of the survey, 20.8 per cent of all of those graduates who sought full-time employment were yet to obtain it. There was great variation by discipline, from as low as 0.2 per cent of graduates in medicine, 3.6 per cent in mining engineering, 4.0 per cent in pharmacy and 5.5 per cent in veterinary science; to 46.4 per cent of graduates in the visual and performing arts, 39.1 per cent in psychology, 36.4 per cent in the life sciences, 35.8 per cent in languages and 35.5 per cent in the social sciences. High rates of under-employment were recorded also in chemistry, mathematics and physics, the humanities, urban planning and social work (GCCA 1998). It is important to emphasise

that these are *very early data* on graduate outcomes, and a survey taken six months or one year later would should markedly better employment rates.

Table 12: Activities of higher education graduates by level of course, 1996 graduates in April 1997

Activity in April following graduation	Doctoral	Course work Masters	Graduate or PG Diploma	Graduate Certific.	Bachelor Honours	Bachelor Pass
	%	%	%	%	%	%
In full-time study	2.8	5.6	8.2	3.3	30.9	20.8
In full-time employment	61.6	65.5	62.2	69.5	46.1	50.1
Seeking full-time employment						
Working part-time or casual	5.2	3.4	7.0	4.8	5.2	7.7
Unemployed	2.7	4.0	4.3	2.8	5.3	5.9
Not seeking full-time employment						
Working part-time or casual	3.6	4.8	8.5	9.3	4.3	6.1
Seeking P-T or casual, unemployed	0.3	0.7	0.9	1.1	0.6	0.7
Unavailable for full-time study or employment	3.9	4.0	3.6	2.9	2.2	2.9
Overseas and not elsewhere included	19.9	11.9	5.4	6.4	5.3	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Graduate Careers' Council of Australia (GCCA), *Graduate destinations survey*, GCCA, Melbourne.

Includes selected qualifications only. Excludes Masters by research, graduate bachelor and undergraduate diploma students. For fuller data see GCCA.

P-T means part-time. Certific. Means certificate. PG means postgraduate.

Graduates in South Australia, Tasmania and the ACT faced the greatest difficulties in obtaining full-time work (GCCA 1998).

Table 12 indicates that in 1997 unemployment rates were lower for doctoral graduates (3.0 per cent), coursework Masters graduates (4.7 per cent) and holders of graduate certificates (3.9 per cent), many of which would have been employed during the period of study, than for bachelor-level graduates. The vast majority of postgraduates available for full-time employment (87.3 per cent) were so employed at the time of the survey.

In total, these data on graduate unemployment – a fact of life in all OECD countries since the advent of mass education systems – underline the fact that education is no longer an automatic passport to employment. More important than unemployment is the phenomenon of graduate 'under-employment' whereby graduates work in occupations once held by less qualified people such as bank-teller or checkout clerk, pushing the former holders of those jobs down the occupational scale. 'Under-employment' is difficult to pin down, but among 25-35 year olds about one graduate in five works outside the

technical, professional and managerial occupations. However there is more than one trend at work here. The 'downwards' movement of graduates might see them earning lower pay but not necessarily exercising lesser skills, especially since the advent of information and communications technologies (Marginson 1999). In his study of graduate employment in British industry Mason (1996) finds that in the steel industry, the increased number of Engineering graduates is doing identifiably professional work. On the other hand, some graduates in the financial services sector appear to be operating well below their potential skill level. Qualifications are used not just to identify productive employees, but as a means of selecting from a large number of applicants.

The existence of graduate unemployment and graduate underemployment might lead some to argue that the number of graduates should be reduced in order to better 'match' education and training to labour market demand. But such a matching is a mirage – labour market demand constantly shifts and changes, and it cannot be anticipated three or four years in advance, so that 'manpower planning' – much talked about in the 1960s - has now fallen from favour. Further, as noted, the ultimate contribution of graduates cannot be judged from their early job history. To reduce the total level of knowledge and skill would be an economic error, especially in the context of technological change. It would also lead to social inequities. If the graduate population was substantially reduced, higher education would tend to be confined to the most affluent social groups. The advent of mass education is irreversible. To achieve a lasting improvement in the relationship between education and work, it is necessary to tackle the factors affecting the demand for educated labour, and also the deployment of educated labour in the workplace.

Work experience during courses

In May 1997, the ABS found that of an estimated 246,600 20-24 year olds enrolled full-time in education, 9000 (3.6 per cent) were working full-time, 107,600 (43.6 per cent) were working part-time, and another 14,500 (5.9 per cent) were looking for work but unemployed (ABS 1997). The research on employer requirements of graduates suggests that work experience is often decisive in the selection of graduates for career positions, especially when sorting applicants with similar levels of academic achievement (see for example Marginson 1993). Work experience during study also helps to provide the confidence to deal with work requirements, and the generic skills of work-place communication, organising and team-building valued by employers (ACNielsen 1998).

All universities provide cooperative education programs in at least some vocational courses, for example engineering and accounting, whereby students spend a period at work as part of the study program. This kind of work experience provides the generic attributes acquired in all workplaces, but in a context relevant to the student's own field. Research on skill transfer suggests that skill and knowledge acquisition is partly context-specific. The closer the fit between the educational setting and the work environment, the more skills and knowledge that will be transferred, all else equal (for one introduction to

a large literature see Marginson 1993). It appears that cooperative education has proven very successful in building the relevant skills. One sign of its value is that many graduates are offered jobs by employers who were previously in contact with those graduates as part of a cooperative program. However, employers have a limited economic capacity to support cooperative education. With the development of cooperative education dependant on government and/or university subsidy, at any given time only a small minority of students take part in structured cooperative education programs. Young adult students normally organise their own work experience, in most cases with a weaker integration of education and work than is created in cooperative education programs.

Some implications for policy research

Policy making and statistical collection has focused overwhelmingly on aggregate levels of participation in higher education, at the expense of a more subtle and differentiated understanding of what participation might mean. The aggregate data on participation in higher education tend to conceal a wide variation in the *quality* of participation. For example, not all courses in all institutions lead to equivalent employment prospects. Not all higher education students and graduates enjoy marked social advantages, although some do. Changing the pattern of investment in education, within a constant participation rate, might have substantial implications for both individuals and the nation. This suggests the need for data that will distinguish different places in higher education according to the income earning power of fields of study - taking into account internal differentiation in fields - and also by institutional role and prestige (Marginson 1997a).

Another area where more data are needed is that of TAFE-higher education links. The Commonwealth's *Selected Higher Education Statistics* contain no information on the incidence of higher education places in TAFE institutions, or enrolments in cross-sectoral and cross-sectoral combined courses.

A more serious problem is the lack of data on multiple qualifications. The ABS uses a vertical model of credentialling in which only the 'highest qualification' is noted. In this model, higher education qualifications rank above qualifications obtained in VET, as if 'higher' higher education always subsumes 'lower' VET. However, as noted, VET and higher education courses are often heterogenous in relation to each other. The one cannot be held to subsume the other in either content or status. The widespread acquisition of multiple cross-sectoral qualifications (Golding et al 1996) indicates that in terms of employability, in some cases a cross-sectoral portfolio of qualifications can be superior to a single higher education qualification. Given the growing economic and cultural importance of lifelong learning, and the increasing likelihood of career changes during working life, it can no longer be assumed that people will remain within a single field of education, nor that they will require only one type of training. Without an accurate statistical picture of multiple post-school training, the data on the educational attributes of the population must be considered severely deficient.

In the context of two-way and multiple movement between VET and higher education, government should facilitate choice by the provision of comprehensive information on cross-sectoral options and pathways. At present neither TAFE institutions nor higher education institutions provide adequate information on the other sector. Given the scope of the data required (not to mention the potential for distortions arising from institutional marketing imperatives), only government agencies are in a position to do this.

The GCCA data set is collected too soon after graduation to constitute a useful measure of graduate outcomes for the purpose of cross-field of study comparisons. This limits its utility in cross-institutional comparisons, as field composition varies by institution. The GCCA data set should be collected in a common week as later as practicable in the year after graduation, and be supplemented by annual later year census studies of the graduate population, perhaps at five and/or ten years after graduation.

Lastly, the relationship between student financing and participation – once a core aspect of policy research – has been subject to relative neglect in recent years. For example more data are needed on the effects of the 1996 increases in the cost of the HECS and the lowering of the income threshold for repayment. The incidence of 'up-front' fee-charging continues to increase but we know little about the effects of postgraduate fee-charging on patterns of participation. The relationships between financial factors, student employment patterns and student withdrawal also merits re-investigation.

Summary

- On the whole young adults in higher education have been and will become the most advantaged in the age group, but higher education is a large sector with plenty of exceptions to this generalisation. Between 1990 and 1997 the number of 20-24 year old students grew by 51.4 per cent to 213,767, faster than the growth in higher education as a whole (35.8 per cent). In the 1990s there has been a spectacular growth of postgraduate education. With 137,770 postgraduate students in 1997, this is becoming a mass education sector. In 1997, 20,942 students from the 20-24 year age group were enrolled in postgraduate courses, nearly 10 per cent of young adults.
- Between 1990 and 1997 the number of young adult women increased by 62.9 per cent, compared to 40.4 per cent for men. Women now constitute the majority of higher education students at all age levels, though the pattern varies by field and level of study. Women are concentrated in three broad fields associated with relatively low paid and insecure graduate labour: the arts, humanities and social sciences; nursing; education. Men dominate the science-based fields, except for medicine and veterinary science, while 57 per cent of doctoral enrolments are men.
- The participation rate of 20-24 year olds in higher education rose steadily throughout the 1990s to reach 15.9 per cent in 1996 (women 17.2 per cent, men 14.7 per cent),

approximately twice the level of participation as in 1975 and 4.0 per cent higher than in 1990. One in every four 20 year olds is enrolled in higher education. Participation declines in the subsequent year levels to less than one in every ten 24 year olds.

- In 1997 direct entry on the basis of prior TAFE experience constituted only 7.9 per cent of commencing enrolments in bachelor level courses, up from 6.1 per cent in 1996. This suggests that articulation between the sectors is limited. However, there is more student movement from higher education to TAFE than from TAFE to higher education, and significant formal collaboration is taking place. TAFE and higher education have distinctive strengths, and the former cannot be subsumed in the latter as the 'upward mobility' model and measures of 'highest qualification received' tend to suggest. The development of lifelong learning suggests the need for more complex measures of educated attributes, embracing multiple qualification-holding.
- Between 1990 and 1996 the number of graduates from higher education increased by 53.6 per cent. The most rapid growth was in business studies, health and law. The number of coursework higher degrees expanded by three-and-a-half times. Graduates maintained a low rate of unemployment, but less than three-quarters of bachelor-level graduates entered professional or managerial jobs in their first year. The GCCA found that 14.0 per cent of 1996 graduates were still looking for full-time work in April 1997, and almost one in five employed graduates described their jobs as short-term.
- The majority of full-time tertiary students work part-time during their studies, which provided both living costs and useful job experience. More structured cooperative education programs have been successful, but are limited by lack of financial support.

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Table A1: Students in higher education by age group, 1987 and 1990-1997

	1987	1990	1991	1992	1993	1994	1995	1996	1997
15-19 years									
Female	65,741	90,589	96,617	93,427	90,794	91,958	93,997	98,639	102,354
Male	56,099	71,254	74,820	71,186	68,660	69,757	70,683	73,151	76,017
Persons	121,840	161,843	171,437	164,613	159,454	161,715	164,680	171,790	178,271
20-24 years									
Female	52,558	69,273	79,967	89,877	97,397	98,810	101,455	106,550	112,814
Male	60,759	71,902	80,304	87,542	92,101	92,415	94,182	97,331	100,953
Persons	113,317	141,175	160,271	177,419	189,498	191,225	195,637	203,881	213,767
25-29 years									
Female	23,088	27,447	30,693	32,557	33,671	35,051	37,858	41,306	44,384
Male	29,251	30,153	32,334	34,152	35,397	36,239	37,661	39,963	42,496
Persons	52,339	57,600	63,027	66,709	69,068	71,290	75,519	81,269	86,880
30 years plus									
Female	55,733	68,346	77,585	82,951	85,769	87,598	92,047	97,727	99,103
Male	50,022	56,111	62,218	67,673	71,828	73,568	76,294	79,427	80,706
Persons	105,755	124,457	139,803	150,624	157,597	161,166	168,341	177,154	179,809
All students*									
Female	197,350	255,655	284,862	298,812	307,631	313,417	325,357	344,222	358,655
Male	196,384	229,420	249,676	260,553	267,986	271,979	278,820	289,872	300,172
Persons	393,734	485,075	534,538	559,365	575,617	585,396	604,177	634,094	658,827

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics 1997*, Canberra, AGPS.

In 1987 only, the total includes a small number of students whose age was not stated: female 230, male 253, persons 483.

Table A2: 20-24 year olds in higher education, 1990, 1996 and 1997, full-time and part-time

Age group	1990			1996			1997		
	FT	PT	total	FT	PT	total	FT	PT	total
female									
20 years	21,566	4281	25,847	28,242	6172	34,414	30,511	6341	36,852
21	12,044	4707	16,751	19,055	7447	26,502	19,737	7804	27,541
22	7035	4312	11,347	11,822	6862	18,684	12,934	7455	20,389
23	4473	3919	8392	7905	6785	14,690	8607	6637	15,244
24	3284	3652	6936	5766	6494	12,260	6204	6584	12,788
20-24	48,402	20,871	69,273	72,790	33,760	106,550	77,993	34,821	112,814
male									
20 years	19,230	4266	23,496	22,823	5013	27,836	23,837	5027	28,864
21	13,048	4812	17,860	17,550	6424	23,974	17,926	6586	24,512
22	8503	4448	12,951	12,326	5972	18,298	13,316	6396	19,712
23	5646	4161	9807	9022	5924	14,946	9242	5941	15,183
24	4024	3764	7788	6618	5659	12,277	6905	5777	12,682
20-24	50,451	21,451	71,902	68,339	28,992	97,331	71,226	29,727	100,953
persons									
20 years	40,796	8547	49,343	51,065	11,185	62,250	54,348	11,368	65,716
21	25,092	9519	34,611	36,605	13,871	50,476	37,663	14,390	52,053
22	15,538	8760	24,298	24,148	12,834	36,982	26,250	13,851	40,101
23	10,119	8080	18,199	16,927	12,709	29,636	17,849	12,578	30,427
24	7308	7416	14,724	12,384	12,153	24,537	13,109	12,361	25,470
20-24	98,853	42,322	141,175	141,129	62,752	203,881	149,219	64,548	213,767

Source: Department of Employment, Education, Training and Youth Affairs, *Selected Higher Education Statistics*, various years, Canberra, AGPS.

Includes overseas students. FT means full-time, PT means part-time and includes both internal and external students.

Table A3: Higher Education Participation Rates by gender and age, 1990, 1995 and 1996

	participation per 100 of the relevant population cohort, age at 30 June									
	20	21	22	23	24	17-19	20-24	25-29	30-64	17-64
	%	%	%	%	%	%	%	%	%	%
female										
1990	21.7	15.4	10.0	7.4	5.8	17.5	12.2	4.0	2.0	4.8
1995	27.3	21.5	14.7	10.6	8.3	20.3	16.1	5.8	2.4	5.7
1996 p.	28.5	22.9	16.0	11.4	8.9	21.3	17.2	6.2	2.5	5.9
male										
1990	17.7	14.6	10.8	8.3	6.4	13.0	11.7	4.3	1.6	4.1
1995	20.6	17.9	13.7	10.5	8.3	14.4	14.0	5.8	2.0	4.8
1996 p.	21.2	18.9	14.5	11.0	8.7	14.9	14.7	6.0	2.0	4.9
persons										
1990	19.6	15.0	10.4	7.9	6.1	15.2	11.9	4.2	1.8	4.4
1995	23.9	19.6	14.2	10.6	8.3	17.2	15.1	5.8	2.2	5.2
1996 p.	24.8	20.9	15.2	11.2	8.8	18.0	15.9	6.1	2.3	5.4

Source: Department of Employment, Education, Training and Youth Affairs, *Higher Education Participation Rates*, 1997, AGPS, Canberra.

Includes both full-time and part-time participation. Includes overseas students. p. means data are preliminary

Table A4: Higher Education Participation Rates by age and type of enrolment, 1996p.

	participation per 100 of the relevant population cohort, age at 30 June									
	20	21	22	23	24	17-19	20-24	25-29	30-64	17-64
	%	%	%	%	%	%	%	%	%	%
female										
Full-time	25.1	17.4	10.7	6.7	4.4	20.0	12.5	2.3	0.6	3.5
P-T internal	2.9	4.6	4.1	3.4	3.0	1.2	3.6	2.6	1.2	1.6
P-T external	0.6	0.9	1.1	1.3	1.4	0.2	1.1	1.3	0.8	0.8
total	24.8	20.9	15.2	11.2	8.8	21.3	17.2	6.2	2.5	5.9
male										
Full-time	18.4	14.5	10.2	7.1	4.9	13.9	10.8	2.6	0.5	2.9
P-T internal	2.4	3.9	3.7	3.2	2.9	0.9	3.2	2.3	0.9	1.4
P-T external	0.4	0.6	0.7	0.8	0.9	0.1	0.7	1.1	0.6	0.6
total	21.2	18.9	14.5	11.0	8.7	14.9	14.7	6.0	2.0	4.9
persons										
Full-time	21.7	15.9	10.4	6.9	4.7	16.9	11.6	2.4	0.5	3.2
P-T internal	2.6	4.2	3.9	3.3	2.9	1.0	3.4	2.5	1.1	1.5
P-T external	0.5	0.7	0.9	1.0	1.1	0.2	0.9	1.2	0.7	0.7
total	24.8	20.9	15.2	11.2	8.8	18.0	15.9	6.1	2.3	5.4

Source: Department of Employment, Education, Training and Youth Affairs, *Higher Education Participation Rates, 1997*, AGPS, Canberra.

P-T means part-time. Includes overseas students. p. means data are preliminary