

Australia's Youth: Reality and Risk

Expenditure on education and training: estimates by sector and course

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Summary

- This paper provides a range of data on expenditure to contribute to the debate on the size and shape of funding of education and training. The estimates are subject to substantial revision in the data and method of analysis.
- Data are presented on aggregate spending in Australia but the main attention is given to estimates of spending per student in 1996 in the main sectors of public education. These data are used to calculate the approximate public expenditures on persons who follow particular education pathways.
- A student who leaves a government school at the end of junior secondary school will have had about \$55,000 of public outlays on his or her education. The figure grows to over \$70,000 for someone who stays to the end of secondary school. In addition AUSTUDY payments are made to eligible students aged 16 or over.
- About \$2,100 government funds were spent on the training in a traineeship in 1996. An apprenticeship in an engineering area may have cost about \$13,500 in public funds for the three years of the off-the-job component. Employer subsidies were additional to these costs.
- A three year Arts degree involved government outlay of \$25,000, a four year honours science degree about \$55,000 and a six year medical degree over \$100,000.
- HECS at the 1997 rates should recover about half the public outlays for Law and Business degrees but a smaller proportion for courses such as medicine.
- We need to be very careful in comparisons across courses and sectors. The data are not fully comparable. More important, schools, TAFE and universities still have different functions. This may mean different requirements for class contact, class size and expenditures.

Introduction

The provision of education and training for young Australians makes a major demand on the nation's resources. Public and private outlays on education and training make up five and a half per cent of the Gross Domestic Product (GDP). Most of this goes on young people. The questions that arise are: is the provision large enough given our current needs; if not, how can it be increased; is the distribution of resources equitable; is the distribution allocated for maximum effect across the various levels and fields of study?

There is no one answer to any of these questions. What this paper is intended to do is to present data on the current provision to provide a context for more informed judgement on the big questions.

First the paper provides an overview of aggregate expenditures on education and training and structured training by employers. Second it explores the expenditures allocated to various sectors and fields of education and training. Third it provides some illustrative examples of spending on young people in various pathways.

Warning

The paper represents work in progress. In several cases the estimates presented are subject to revision both in the basic data and the method of analysis. Many of the estimates are for average outlays and there is wide variation around the average for reasons of location or mode of delivery or size of the group to be taught. While attempts have been made to ensure comparability the scope of the data varies across sectors. The purposes of the education sectors also vary as do the needs of their students for intensive instruction or self-directed learning. The estimates are presented as a basis for further investigation.

Aggregate expenditures

This section gives a brief overview of public and private expenditures on education and training. Table 1 shows outlays on the formal education system. They have risen from 5.2 per cent of GDP to 5.5 per cent in the six years to 1995-96. Proportionately the increase is largest in private expenditures but nearly 90 per cent of outlays are still financed by governments. The outlays include direct expenditure on education and training by governments and by persons or organisations in the private sector. Part of the private expenditure is financed by government grants or loans (including the Higher Education Contribution Scheme (HECS)). Outlays also include the provision of assistance to students for living expenses, such as AUSTUDY and ABSTUDY. Education outlays considered in this section do not include the support of the unemployed or the subsidy given to employers of apprentices and trainees.

Table 1: Government and Private Outlays on Education, \$billion, Australia

	1889-90	1995-96
Private Expenditure	4.3	6.5
Net Private Expenditure not financed by government	1.9	2.9
Government Final Expenditure	13.3	17.7
Government Outlay	17.2	23.8
Total Government and Private Outlays	19.1	26.7
<i>Government outlay as % of GDP</i>	4.7%	4.9%
<i>Net Private as % GDP</i>	0.5%	0.6%
<i>Total outlays as % of GDP</i>	5.2%	5.5%

Source: ABS Cat No 5510.0

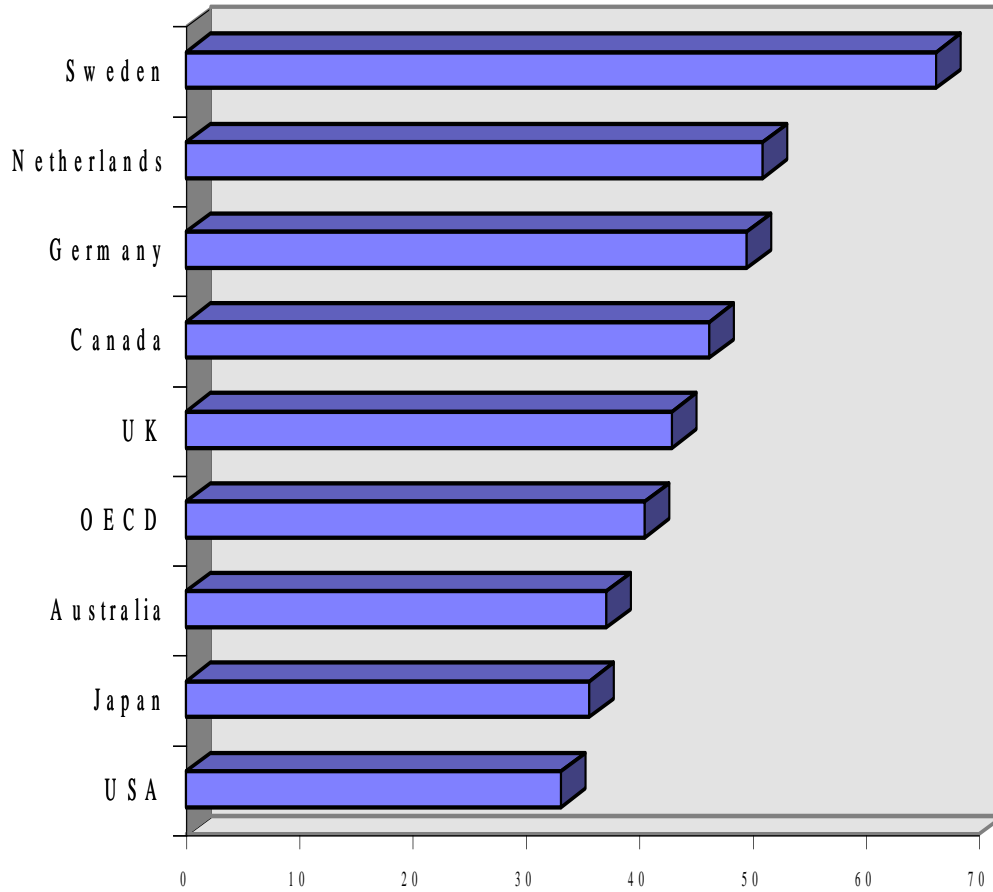
Notes: Government final expenditures are the purchase of goods and services for education purposes expenditures such as salaries of teachers and construction of schools. Government outlay is a broader concept term and also includes student benefits, grants to non-government institutions, net increase in HECS debt. Net Private outlay is private expenditures on education of which the main element is tuition fees. Private outlay does not include expenditures on student living expenses.

Figures 1 and 2 show Australia's expenditures in comparison to selected OECD countries. The warning on comparisons is even stronger for international data.

Figure 1 shows that the overall level of outlays on all government activities, including welfare, health and defence as well as education, is low in Australia. Only Japan and the USA have relatively lower public outlays. A major reason for this is that Australia targets social welfare payments on low income groups and hence spend a significantly lower proportion of GDP on pensions and benefits than most European countries.

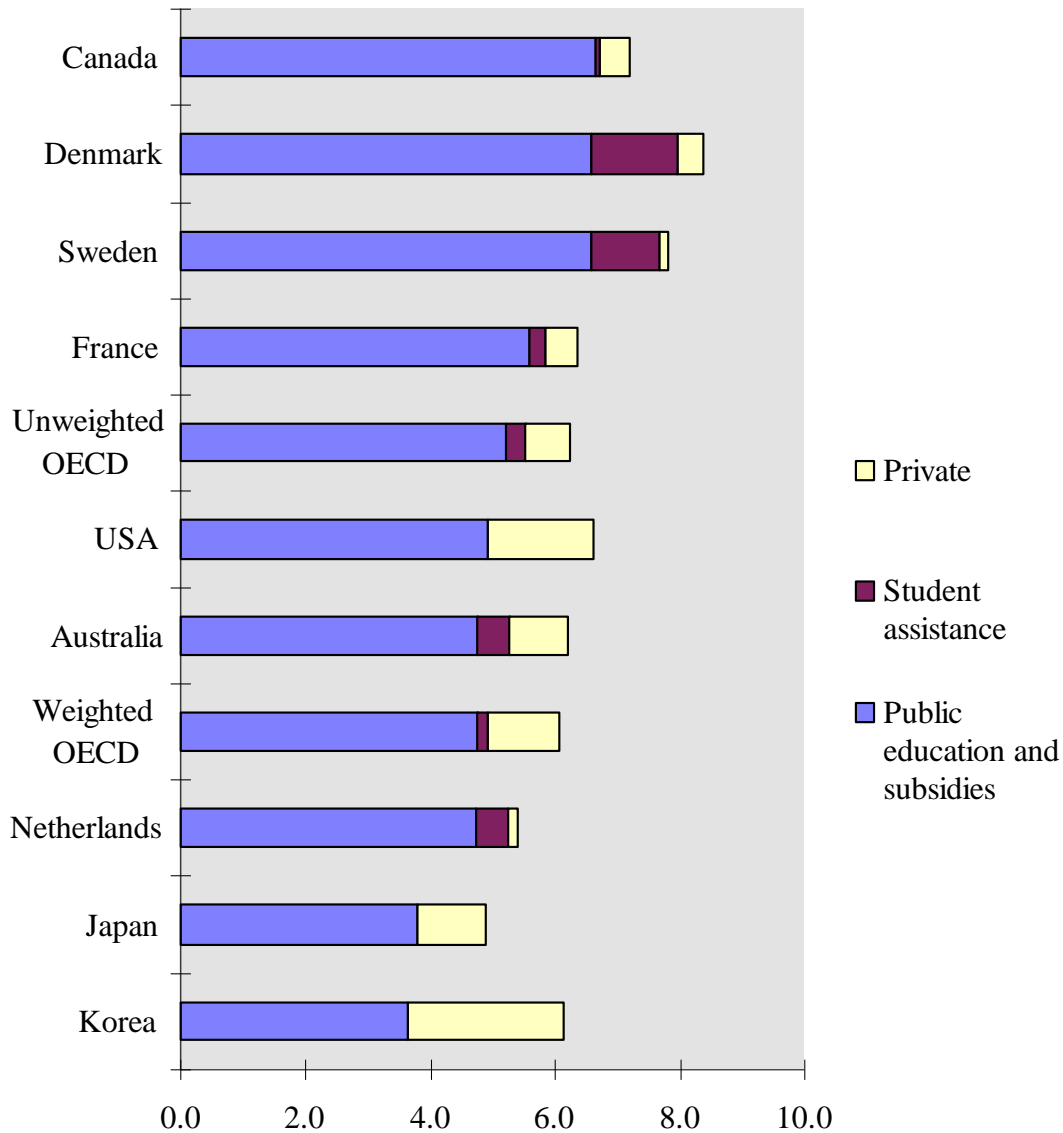
Figure 2 shows public expenditure on education (which includes subsidies to private institutions), public assistance to students and private expenditures on education. Figure 2 ranks the countries by their public expenditures on education. There are notable differences: Korea, USA and Japan rank high on private expenditure. Australia is ranked in the middle on public expenditure and on outlays on student assistance but it also now has relatively substantial private expenditure. The European countries tend to have high public expenditure and high student assistance and low private expenditure.

Figure 1 General Government outlays,
% of GDP, 1995



Source: OECD *Economic Outlook*

Figure 2 Public expenditure on education, student assistance and private expenditure % of GDP, Selected OECD countries 1994



Source: OECD *Education at a Glance*, 1997

Weighted OECD means the average for the OECD treated as a single entity (and is therefore heavily influenced by the values for the US and Japan). Unweighted OECD is the simple average of the country values on the indicator. OECD does not report any data for Japan and Korea for student assistance

Table 2 shows the distribution of government outlays across the major sectors of the education system in Australia. In 1995-96 about 55 per cent of outlays related to schools, 24 per cent to universities and 11 per cent to TAFE. School transport and pre-school outlays are among expenditures which are not shown in the table. Student benefits, which are included in each of the sectors make up about 10 per cent of all outlays and grew considerably in the period from 1989-90. Capital expenditures fell in this period.

The expenditures can only be very roughly related to the enrolment data shown in Table 3. This is because of the differences in the proportion of enrolments that are full-time across the sectors and because of major changes to the data collection especially for vocational education and training in recent years. There is also a need for some caution even in comparing school and university enrolment increases with real increases in expenditure since the price index available to deflate expenditures may not exactly reflect cost changes in education.

Tables 4 and 5 are included to indicate the extent of structured training outside the formal education system. Table 5 shows that in the September quarter in 1996 employers reported spending over \$1,180 million, or about \$4,700 million on an annual basis. About half of this expenditure is for the wages and salaries of the employees in training, but the remaining outlays on the provision of training are still sizeable compared with the \$2,600 million public expenditure on TAFE shown in Table 2. However, while most of the outlays in the education sector are for young people, only a small part of the employers' expenditures are for young people. This is indicated in Table 4 where it is shown that relatively few 15-19 year olds received in-house training.

Table 2: Government outlays on education, \$billion, Australia 1989-90 and 1995-96

	1989-90	1995-96	% increase in nominal prices	% increase in constant prices
Schools				
Consumption.	7.0	9.0	29	14
Capital	0.6	0.6	0	-12
Student Benefits	0.5	0.7	40	24
Other	1.8	2.8	54	36
Total schools	10.0	13.2	32	17
TAFE				
Consumption.	1.4	2.0	38	22
Capital	0.3	0.3	1	-11
Student Benefits	0.1	0.3	247	135
Other	0.0	0.1	220	183
Total TAFE	1.9	2.6	37	21
Universities				
Consumption.	2.5	4.0	62	43
Capital	0.3	0.3	-12	-22
Student Benefits	0.5	0.9	87	65
Other	0.4	0.6	41	25
Total Universities	3.6	5.7	57	39
All sectors(a)				
Consumption (ie recurrent)	12.0	16.4	37	21
Capital	1.3	1.2	-4	-15
Student Benefits	1.5	2.5	65	46
Other	2.4	3.6	49	32
Total all sectors(a)	17.2	23.8	38	22
Education outlays as % of GDP				
	4.7%	4.9%		

Source: ABS Cat No.5510.0

a) Total government education outlays also include pre-school, transport and some other expenditures not shown in this table. Constant price estimates using the deflator for the non-farm GDP increased by 13.1 per cent. Consumption. is final expenditure by governments for recurrent purposes such as payment of teachers' salaries. Capital is the purchase of new fixed assets such as buildings plus net expenditure on second hand fixed assets. Student benefits are financial assistance to students such as AUSTUDY. Other includes payments to the private sector including funding of the HECS.

Tables 4 and 5 also suggest that employer provided training has not kept pace with the growth of public and private expenditures on the education system. Table 2 showed that public expenditures had grown by nearly 40 per cent in nominal terms (22 per cent in real terms) in the six years to 1995-96. Table 5 shows only a 25 per cent increase in nominal employer expenditures. The hours of training provided and the proportion of wages and salaries devoted to training had fallen. The proportion of employees provided with in-house training fell from 1989 to 1993, as shown in Table 4.

Table 3: Students and clients in education and training, '000, Australia, 1990 and 1996

	School to year 10	School years 11 & 12	Higher education	VET	Recreation, Leisure etc	'Other' *	TOTAL
1990	2665	376	485	967	539	151	5184
1996	2772	371	634	1355	390	204	5726

Source: ABS, Cat No 4221.0, Cat No 6227.0, DEETYA (1997), NCVER (1997).

Notes: * Statistics from ABS survey data; changes in collections affect data from 1993. VET data relate to students in streams 2100 to 4500 enrolled at any time in the year. A new system of VET data collection was introduced for 1994 with further changes in 1995 and 1996. na: not available. VET refers to enrolments in streams 2000 to 4500 which are called vocational courses. Recreation, Leisure etc refers to enrolments in stream 1000 which are usually very short courses, largely funded by fees.

Table 4: Wage and Salary Earners: Training in Australia, 1989 and 1993

	1989				1993			
	Aged 15-19		Aged 15-64		Aged 15-19		Aged 15-64	
	'000	per cent	'000	per cent	'000	per cent	'000	per cent
Studied	338	54	1124	17	271	57	1316	19
In-house training	147	23	2338	35	65	14	2214	31
External training	35	6	658	10	27	6	836	12
Total study or training	411	65	3205	48	303	63	3324	47
Total wage & salary earners	629	100	6705	100	479	100	7079	100

Source: ABS Cat No 6278.0

Notes: Persons can undertake more than one type of study or training

Table 5: Employer Expenditure on Structured Training, Australia 1990 and 1996 July to September

		Employer size			All
		1-19 employees	20-99	100 or more	
Total expenditure \$million	1990	79	117	747	943
	1996	115	168	895	1179
% of gross wages and salaries	1990	1.4%	1.9%	3.0%	2.6%
	1996	1.2%	1.9%	3.2%	2.5%
Training per employee - hours	1990	4.0	4.1	7.1	5.9
	1996	2.4	3.8	6.5	4.9
% employers providing training	1990	19%	64%	94%	24%
	1996	13%	51%	88%	18%
<i>For Employers Reporting</i>					
Expenditure Hours per employee	1990	13	6	7	7
	1996 est	12	7	7	7
Public Sector % gross wages	1996	0.8%	2.9%	3.2%	3.2%
Private Sector % Gross Wages	1996	1.2%	1.9%	3.2%	2.3%

Source: ABS Cat No 6353.0

Structured training is all training activities which have a predetermined plan and format designed to develop employment-related skills and competencies.

Costs per student

The aggregate expenditures and enrolment data give only a rough impression on the allocations within education and training. Some more detailed data are available on expenditures though the data are not fully comparable across the sectors. The focus is on the government sectors with examples for the main levels and fields. There is no explicit consideration of expenditure on those with special needs, other than the main form of assistance to low income students. The estimates reported are averages and there is considerable variation about those averages for a number of reasons including the size of the institution and the size of the teaching groups (Anderson 1997, McKenzie 1995).

Table 6 shows estimates of the average government expenditure per student in government schools. It is worth remembering that there is variation across States and Territories and that the estimate of the relative cost of senior secondary compared to junior secondary is less exact than the broader primary/secondary relativities. Average total expenditures at primary level are estimated at \$4750 per student in 1995-96, \$6024 at junior secondary and \$8024 at senior secondary.

Lower estimates, which exclude outlays on buildings and grounds and superannuation, are also shown.

Table 6: Public expenditure on government schools, \$ per student, Australia 1995-96

	Primary	All secondary	Total	Junior secondary	Senior secondary
Expenditure per student including superannuation and building and grounds	4750	6589	5456	6024	8045
Less					
Superannuation	340	479	393	432	599
Buildings and Grounds	265	361	302	361	361
Expenditure per student excluding superannuation and buildings and grounds	4145	5749	4761	5230	7086

Source: Derived from data in MCEETYA (1997)

Note: excludes payroll tax. Estimates for superannuation are imputed for some States/Territories

There are no estimates here on variation in costs among different types of programs in secondary education. Direct teacher costs do vary across learning areas (Shah 1998). Vocational programs in schools, where they involve industry placements, give rise to additional costs of coordination (Bluer et al 1997).

The discussion is concentrated on the public sector but, for rough comparison, the outlays in 1995 in non-government schools are shown in Table 7. The average expenditures per student of Catholic schools are lower than those of government schools. Expenditures in independent *secondary* schools appear to be higher than in government schools. On average over 70 per cent of the expenditures in Catholic schools are financed by governments and about a third of expenditures in independent schools.

Public expenditures on university education are shown in Table 8. The estimated government expenditure actual per equivalent full-time student in 1996 was around \$12,500. This included payroll tax and some specific research expenditures which are deducted in Table 8 to give a figure of a little under \$11,000 per student.

Most 'teaching and research staff' in universities are expected to devote a proportion of their work time to research. No deduction is made for this in Table 8. Estimates of research expenditures in higher education organisations by the ABS (Cat No 8111.0) and the Industry Commission (1997) suggest a greater sum

could be considered as devoted to research than the amounts identified in Table 8.

Table 7: Expenditure per student in non-government schools, \$, Australia 1995

	Catholic	Independent
<i>Income:</i>		
Total private	1255	4534
Total Government	3168	2291
States	954	844
Commonwealth	2214	1447
Total Income	4423	6825
<i>Expenditure:</i>		
Recurrent Expenditure	3926	5822
Capital Expenditure	511	1274
Total Expenditure	4437	7157
Primary schools	3418	4488
Combined primary-secondary	4437	7452
Secondary schools	5690	8124

Source: MCEETYA (1997a)

Note that expenditures include capital expenditure and salary related payments eg superannuation, and they exclude payroll tax.

University grants were reviewed some years ago to ensure they roughly complied with the allocation that would result from applying a relative funding model (see Baldwin 1990). Estimates based on an approximate application of this model to enrolments by level and broad field of study have been made and are shown in Table 8.

Gross grants per annum per equivalent full-time student unit (EFTSU) were nearly \$12,500, but this figure includes payroll tax and expenditures earmarked as research. Excluding these, the estimated outlay per full-time student is a little under \$11,000 per annum. Undergraduate outlays are estimated at \$10,000 per full-time student.

Estimates for expenditure per student by broad field of study are also shown based on the application of relative funding weights. The resulting estimates put the average cost per undergraduate year for medicine at around \$17,000, \$14,000 for Science, for Arts around \$8,300 and for Business and Law about \$6,400. It is important to remember that the estimates roughly reflect the way the funds are allocated to the universities and that the internal allocation may vary at the discretion of each university.

Table 8: Unit costs per annum in higher education: broad approximations, Australia 1996

		\$ per EFTSU
DEETYA grants per actual EFTSU		12465
Research Outlays		897
Research Quantum		508
Payroll tax, estimate		159
Average cost excluding specific research funds and payroll tax		10901
Average undergraduate cost @ .92 average cost		10029
<i>Average undergraduate cost by field of study</i>	<i>Relative weight</i>	
Business, law	0.64	6388
Arts	0.83	8304
Science	1.40	14053
Medicine	1.72	17247

Source: Estimates based on data supplied by the Australian Vice-Chancellors' Committee (AVCC) and DEETYA; for DEETYA's own estimates see West (1997).

Estimates include capital outlays of approximately 5% of total outlays or on average about \$675 per EFTSU. Relative costs for undergraduates and fields of study based on relative funding model (Baldwin 1990). Note that while university funding was adjusted in line with the relative funding model in the early 1990s the model is not used in annual adjustments to funds and internal allocation is a matter for universities. EFTSU is equivalent full-time student unit.

The average outlay of \$10,000 per annum is higher than the estimated cost per senior secondary student. The estimate for Arts per annum is roughly comparable with the average cost of senior secondary education. The estimate for Business is less, and for Science and Medicine a great deal higher. As indicated in the initial warning, we should be very wary in drawing implications from these data, not only because of data problems but also because the objectives of the educational programs across the sectors may be different and the students they provide for may have varying needs and capacities.

ANTA (1997) estimated the average cost of a full-time equivalent student in VET as \$8,000. Table 9 provides some estimates for particular vocational education and training courses. The estimates are based on the recurrent unit cost per annual curriculum hour which was estimated at \$11.1 for 1996. The estimate excludes capital costs and superannuation charges and includes payroll tax for those States and Territories where it is charged to State institutions.

Examples are given for the approximate public cost of selected courses based on cost relativities and the number of nominal curriculum hours involved. Most VET students study only part-time and examples are given for courses such as a Certificate in Sales which requires a nominal 290 hours. This is estimated to cost about \$3000 in public funds. Traineeships, which in 1996 were usually for 390 hours were funded at a special rate of \$2,100. Public expenditure for the off-the-

job training of an apprenticeship in an Engineering area could cost \$4,500 per annum for three years or a total about \$13,500. The public cost of an advanced diploma course in Accounting could approximate \$11,800 for the two year course.

Table 9: Illustrative public outlays on selected VET programs per student, \$, Australia 1996

Selected VET programs	Number of years	Hours per year	Total course hours	Cost relativity	Unit cost per annual curriculum hour	Total cost	Common-wealth subsidy to employer	Total public outlay
Advanced Diploma Accounting (post year 12)	2	675	1350	0.79	8.8	11838	na	11838
Diploma in Banking and Finance	1.5	667	1000	0.68	7.5	7548	na	7548
'Engineering' Apprenticeship*	4*	320	960	1.28	14.2	13640	4000	17640
Certificate in Sales	1	290	290	0.94	10.4	3026	na	3026
Traineeship	1	390	390	na	5.4	2106	1500	3606

Source: Derived from data in ANTA (1997) and information from State institutions.

The average Australia recurrent expenditure per annual curriculum hour in 1996 was \$11.1. This estimate excludes capital outlays and outlays for superannuation. It includes payroll tax, but this is not charged on public sector providers in some States/Territories. na: not applicable. Some further adjustments are therefore needed to provide the data on a similar basis for schools and universities where the estimates include capital costs and superannuation.

* Apprenticeship is for four years but attendance at TAFE or other provider is usually for three years.

Table 9 also shows the main form of employer subsidy for apprentices and the main subsidy for traineeships in 1996. In 1996 the subsidy to apprentices over the life of a successful apprenticeship was \$4,000 (after the fourth year) and the one year subsidy for trainees was \$1,500.

Full-time senior school students, VET and university students may be eligible to receive student assistance such as AUSTUDY. The rates for 1996 are shown in Table 10. Students from low income homes could receive an annual allowance of about \$3,700 at home at age 16 and 17. At ages 18 and over the standard rate was about \$4,400 and the away-from-home or independent rate was close to \$6,700. The maximum rate paid to unemployed persons is the same as AUSTUDY for teenagers, though there was a higher rate for persons 21 and over.

TAFE courses involve small fees, usually not exceeding \$1 per course hour, and in some cases capped, eg at \$500 per annum in Victoria. Students from low income background, eg with a health card, are exempt. There is considerable

variation in the extent to which additional charges are made for materials for particular courses.

Table 10 AUSTUDY and Job Search Allowance (JSA) maximum benefits, Australia 1996

	under 18			18 and over				
	standard rate	away /indep rate	with partner etc	standard rate	away /indep rate	AUSTUDY 22-24 at home	with partner etc	JSA 21 & over
fortnight	141	232	281	169.1	257.7	217	281	317.7
year	3665	6051	7331	4408	6692	5649	7331	8256

Source: DEETYA

Away/indep means away from home or independent rate

JSA is Job Search Allowance

Fees are often charged in government schools though the fees are usually smaller than in TAFE and are voluntary in that a student is not denied enrolment by a failure to pay. In the case of private schools, the private sources, mainly fees, cover 30 per cent of the costs in Catholic schools and on average nearly 70 per cent of the costs of independent schools. Fees in Catholic secondary schools are usually below \$2,000 per annum. In independent schools there is a wider range with the higher cost schools having secondary level fees of around \$9000 per annum.

In universities, HECS enables the Commonwealth to recoup a rising share of the outlays. HECS is a deferred payment scheme which involves repayments adjusted for inflation but with no charge for interest. Students who pay up-front receive a 25 per cent discount. This discount probably underestimates the average value of the interest subsidy. Because repayments of HECS are income contingent, about 15 per cent of HECS was not expected to be recovered under the conditions applying in 1996.

In 1996 the rate for HECS was \$2450 for a full-year course. We could assume that, because of the waiver to repayment for low income recipients and because of the interest subsidy, the government was likely to recover in effect 60 per cent of its outlay. In 1996 the net recovery could be put at about \$1500 per annum which was about 25 per cent of the costs estimated here for Business or Law and less than 10 per cent of the costs for medicine.

The HECS rates were increased in 1997 and varied by discipline to \$3,300 eg for Arts, and Education, \$4,700 for Business, Science and 'Engineering' and \$5,500 eg for Medicine and Law. The income at which HECS was to be repaid was substantially lowered. If we now assume a net recovery rate of 65 per cent then Law students on average contribute about \$3,600 per annum - over half their course costs - and Business students about \$3,000, approaching 50 per cent of annual course costs.

Scenarios

Table 11 draws on the estimates in the previous section to show how much is spent on a number of different courses. For example a student who completed only junior secondary schooling would, at 1996 prices, have a public outlay of \$55,000 spent on his or her schooling. If he or she completed senior secondary then the total would have grown to \$71,000. If the student were eligible for AUSTUDY and assuming they were aged under 18, the total public outlay would increase to about \$78,000 by the end of secondary school.

Table 11 Summary of examples of public outlays and recoveries

	Total Public \$ for whole course	Total maximum AUSTUDY under 18 <i>standard</i>	Total maximum AUSTUDY 18 + <i>standard</i>	Employer subsidy	Recovery of 60% of HECS at 1996 rates**	Recovery of 65% of HECS at 1997 rates
Government schools						
Primary schooling	33250	na	na	na	na	na
Junior secondary	21686	na	na	na	na	na
Senior secondary	16090	7330	*	na	na	na
University						
Business	19164	*	13224	na	4410	9165
Arts	24912	*	13224	na	4410	6435
Science honours	56212	*	17634	na	5880	12200
Medicine	103482	*	26451	na	8820	21450
VET						
Advanced Diploma Accounting	11838	*	8817	na	na	na
Diploma in Banking & Finance	7552	*	6613	na	na	na
Certificate in Sales	3026	na	na	na	na	na
'Engineering' Apprenticeship	13640	na	na	4000	na	na
Traineeship	2106	na	na	1500	na	na

See appendix for more detail. Note that this table does not show private fees paid to government schools and to VET

na: not applicable

* For simplicity no amount is shown but full-time school students 18 or over are eligible for AUSTUDY at the higher rates and tertiary students 17 or under are eligible for the lower rates.

** University students faced HECS in 1996 of \$2,450 per full-time year. Recovery can be considered at about 60%: up-front discounts or interest subsidy accounts for 25% and a further 15 % for non-recovery under the conditions applying in 1996. Charges and likely recovery rates were increased in 1997.

Table 11 includes examples for expenditure on university courses. It shows expenditures of: \$19,000 for a three year Business course, \$25,000 for a three year Arts course, over \$56,000 for a four year honours Science course and over \$100,000 for a six year degree in Medicine. AUSTUDY (shown only at the standard rate) adds to the government outlays for low income or independent students.

There is an offset to the Commonwealth's higher education outlays through HECS. The estimated real recovery of HECS debt is shown. At the new rates for 1997 the estimated real recovery of HECS debt is approximately \$6,000 for a three year Arts degree, \$9,000 for Business students and \$21,000 for a six year course in Medicine. (More detailed estimates would vary the recovery rates somewhat across the various courses).

The estimates of public outlay for VET courses range from \$2,100 for traineeships in 1996 to about \$12,000 for an advanced diploma in Accounting to \$13,500 for an 'Engineering' apprenticeship. A full-time student is eligible for AUSTUDY but apprentices and trainees are not. Their employers at 1996 rates received a total subsidy of \$4,000 for apprentices and \$1,500 for trainees. There were also schemes for the unemployed that involved additional support.

The examples in Table 11 are for the specified length of the courses. Quite large numbers of students take longer than minimum time and about a third of university students withdraw before completion. Some later commence other courses. Increasing numbers are taking double degrees. In universities, many students now enrol at the outset for a double degree. Very many people undertake more than one course of post-school study. Many persons switch across sectors. The simple examples given in Table 11, which show completion of selected courses in minimum time, do not reflect the full extent to which people avail themselves of public education and training funding. These wider scenarios will be considered in later work. Analysis of student flows in higher education is provided in Shah and Burke (1996) but the flow data have not yet been combined with the expenditure data considered here.

Conclusion

Public and private spending on education and training make a substantial demand on the nation's resources. Whether the current allocation is sufficient to meet the needs of our rapidly changing society and whether it is equitably and efficiently allocated are matters for continued investigation.

This paper provides a range of data on expenditure on education and training to contribute to the debate on the size and shape of funding. In several cases the estimates presented are subject to substantial revision both in the basic data and the method of analysis.

Compared with OECD countries Australia has middling levels of public educational outlays and a relatively small level of all public outlays. The need to constrain public expenditures is a matter of overall government priorities, not the result of very high levels of outlay that need to be wound back.

The paper documents the aggregate size of public and private spending on education and employer spending on training. It provides approximate estimates of spending per student or client in the main sectors of public education and for particular programs. These data are used to provide estimates of the public expenditures on persons who follow particular education or training pathways.

As stated earlier, the estimates presented are subject to revision both in the basic data and the method of analysis. Many of the estimates are for average outlays and there is wide variation around the average for reasons of location or mode of delivery or size of the group to be taught.

A student who leaves a government school at the end of junior secondary school will have had approximately \$55,000 of public funds spent on his or her education. If he or she subsequently enter a traineeship about a further \$2,000 is spent on training. An 'Engineering' apprenticeship costs about \$13,500 in public funds. There is, in addition, an employer subsidy for traineeships and apprenticeships.

Senior secondary schooling in government schools costs *on average* about \$16,000 in public funds, though there are differences across states. There are additional AUSTUDY payments to about half the students aged 16 or over. Undergraduate university courses involve public outlays of about \$10,000 per full-time student per annum. A three year Business degree involves government outlays of \$19,000, an Arts degree \$25,000, a four year honours Science degree over \$55,000 and a six year medical degree over \$100,000. For university courses the HECS repayments offset a considerable part of the public expenditure. At the HECS rates levied in 1997 more than half the public outlays on Law courses will be recovered, and nearly half the outlays on Business courses.

VET courses cost less in public outlay than university courses. A major reason is that they are shorter. A two year advanced diploma in accounting could cost nearly \$12,000 in public funds plus any AUSTUDY payments. The *public* outlays on an 'Engineering' apprenticeship could approximate \$13,500 for the three years of part-time off-the-job training plus the subsidy to the employer of \$4,000 (at the 1996 rate). There is a considerable variation in costs across different courses.

The data presented in the paper are mainly useful for estimating the outlays required in an educational pathway. On their own they tell us little about the relative efficiency or effectiveness of the various sectors because there are considerable differences in purpose. Secondary schooling is provided throughout the country implying quite small classes in some regional schools. Classes in all schools have to be offered in a range of key learning areas to ensure students have a suitable program, implying small classes in some subjects. TAFE institutes provide courses for students with the whole range of abilities. They may have to

provide courses in a range of levels and of fields of study, in a variety of locations and at unusual times, all factors leading to small groups.

Universities tend to pay higher salaries and tend to have a greater infrastructure than schools and TAFE institutes, for example in libraries and computer facilities as well as in the science, engineering and medical areas. They are able to offset some of their additional costs by their main mode of teaching which requires a high level of independent student study outside the class room. This mode is possible given that universities do not cater for students of low academic achievement. Universities tend to provide a relatively low total number of class hours for their students. They also use lectures to large groups for a substantial part of those hours. For example first year students in Business at a university might attend class for 350 hours a year. This is about half the hours in a TAFE Accounting course and well under half the annual hours for a year 12 student. About 60 per cent of the university students' class hours would be in lectures.

The large lecture mode of teaching cannot be used for those TAFE or school courses where class numbers are relatively low. In some TAFE courses, hands-on activity requires small groupings. Even if the student numbers were sufficient, the lecture mode may not be appropriate for the broader concerns of schools and the varied abilities of school and TAFE students. These points should also be borne in mind when the cost advantages and disadvantages of new forms of technology in teaching are under review.

In summary schools, TAFE and universities still have different functions. This may mean justifiably quite different requirements for class contact, class size and expenditures.

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Appendix Table 1: Examples of outlays on education and training

	Schools			University				VET		
	Primary schooling	Junior secondary	Senior secondary	Business	Arts	Science honours	Medicine	Advanced Diploma Accounting	Diploma in Banking & Finance	Certificate in Sales
Years of course	7	3.6	2	3	3	4	6	2	1.5	1
Hours per year	na	na	na	na	na	na	na	675	667	290
Unit cost per annual curriculum hour	na	na	na	na	na	na	na	8.8	7.5	10.4
Public \$ per full-time year	4750	6024	8045	6388	8304	14053	17247	5919	5003	na
Total Public \$ for course	33250	21686	16090	19164	24912	56212	103482	11838	7552	3026
AUSTUDY standard	na	na	3665	4408	4408	4408	4408	4408	4408	na
away/independent	na	na	6051	6692	6692	6692	6692	6692	6692	na
Outlay standard	na	na	7331	13225	13225	17634	26451	8817	6613	na
Outlay away/independent	na	na	12102	20077	20077	26769	40153	13384	10038	na
Employer subsidy total	na	na	na	na	na	na	na	na	na	na
HECS 1996 per annum	na	na	na	2450	2450	2450	2450	na	na	na
1997 per annum	na	na	na	4700	3300	4700	5500	na	na	na
Maximum payable at 1996 rates	na	na	na	7350	7350	9800	14700	na	na	na
Maximum payable at 1997 rates	na	na	na	13500	9900	18000	33000	na	na	na

Source: tables in the paper