

Expenditure on Education and Training: Data and Issues

Summary

This paper provides an overview of Australian expenditures on education and training. It also reviews the participation by persons of different ages in both the formal education systems and in training provided by employers. It gives particular attention to the 20-24 age group and provides some broad estimates of the costs of expanding the provision of education or training for this age group.

Outlays on formal education and training make up nearly 6 per cent of GDP. Australia compared with other OECD countries is ranked in the middle on public outlays and it now has relatively substantial private expenditures. European countries tend to have high public expenditure and high student assistance and low private expenditure. Korea, USA and Japan rank high on private expenditure.

Full time university undergraduates in Australia involve government outlays on average of about \$10,000 per annum. A substantial share of their public outlay, especially on courses such as business studies and law, is now recovered through HECS.

Post school vocational courses cost on average about \$8,500 for a full time course, but most students are enrolled part time.

Youth allowance and subsidies for apprenticeships involve additional government outlays.

A considerable amount of training is conducted by industry. In 1996 employers reported spending about 1 per cent of GDP on structured training. Most of the expenditure is undertaken by employers with 100 or more employees.

About 60 per cent of 20 – 24 year olds either participated in some form of structured training provided by employers or were undertaking study in 1997.

About 40 per cent of 20-24 year olds had achieved at least one post-school qualification and another 20 per cent without qualifications were studying.

Providing opportunities for the young persons currently not involved in education or training can involve large additional expenditures. Providing incentives for the young people to participate in study and for employers to provide more jobs and training for young people may require still further outlays.

Table 1: Government and private outlays on education, \$billion, Australia

	1991-1992	1996-97
Private expenditure	5.4	7.9
Private financed by government	2.2	3.1
Net private expenditure not financed by government	3.2	4.8
Government final expenditure	15.5	18.8
Government outlay	19.9	24.5
Total government and private outlays	23.1	29.3
<i>Net private as % GDP</i>	<i>0.8%</i>	<i>0.9%</i>
<i>Government outlay as % of GDP</i>	<i>5.1%</i>	<i>4.8%</i>
<i>Total outlays as % of GDP</i>	<i>5.9%</i>	<i>5.7%</i>

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 and also includes student benefits and grants to non-government institutions. Net Private outlay private expenditures on education of which the main element is tuition fees. Private outlay does not include expenditures on student living expenses. There have been substantial revisions to the ABS estimates in the latest publication. *In particular the financing of HECS debt is excluded from consideration.*

Table 2: Education – public expenditure, student assistance and private expenditure as % of GDP, selected countries 1995

	Public expenditure and subsidies	Student assistance	Private expenditure
Korea	3.6	m	2.6
Japan	3.6	m	1.2
Netherlands	4.8	0.5	0.1
Australia	4.7	0.5	1.0
USA	4.9	m	1.7
Unweighted OECD average	5.0	0.3	0.8
Canada	6.3	0.3	0.7
Sweden	6.6	1.2	0.1
Denmark	6.6	1.4	0.5

Source: OECD *Education at a Glance*, 1998

Notes: Unweighted OECD is the simple average of the country values on the indicator.
m – data not available

Table 3: All governments: education outlay, Australia 1996-7

	\$billion	Per cent of total
Preschool, special and other	1.4	5
Schools	15.2	55
Transportation of students	0.9	3
TAFE	3.2	12
Universities	6.6	24
Tertiary n.e.c.	0.1	1
Education n.e.c.	0.3	1
Total	27.5	100%

Source: ABS Cat. No. 5510.0

n.e.c. – not elsewhere classified

Expenditure on education and training: data and issues

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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 nearly six per cent of the Gross Domestic Product (GDP). Most of this goes on schools but a considerable proportion is spent on post school education and training.

This paper provides an overview of aggregate expenditures on education and training and structured training by employers. It explores the expenditures allocated to various sectors and fields of education and training. It then provides some indication of the distribution of post-school expenditure on persons of different ages and of the 20-24 age group in particular.

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 in 1991-92 and 1996-97. These outlays make up nearly 6 per cent of GDP. Private expenditures are now estimated to make up nearly \$8 billion or about a quarter of all outlays but part of these are financed by governments. *Net* private outlays are shown to be about one sixth of all outlays. Private expenditures include the cost to students of the Higher Education Scheme at universities, either in up-front payment or as debt incurred.

Table 2 shows, for selected countries, public expenditure on education (which includes subsidies to private institutions), public assistance to students and private expenditures on education. It ranks the countries from lowest to highest in public expenditures on education. Australia is ranked in the middle on public expenditure and on outlays on student assistance but it also now has relatively substantial private expenditure. European countries tend to have high public expenditure and high student assistance and low private expenditure. Korea, USA and Japan rank high on private expenditure. A conclusion from this is that the amount a country devotes to education is largely a matter of its individual policies and social and economic circumstance. There is scope for countries to devote more – or less – of their resources to education and training.

Table 1: Government and private outlays on education, \$billion, Australia

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Source ABS Cat No 5510.0

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Source: OECD *Education at a Glance*, 1998

Unweighted OECD is the simple average of the country values on the indicator.

m – data not available

Table 3 shows the distribution of the outlays of Australian Commonwealth and State governments across the major sectors of the education system in Australia. In 1996-97 over 60 per cent of outlays related to schools, preschools and transport, 24 per cent to universities and 12 per cent to TAFE. Expenditure on buildings and equipment are included in the totals for each sector and make up about 7 per cent of the total outlays

Student benefits are included in the outlays for each of the sectors. The main element is support for full-time students aged 16 and over. The outlays on student benefits make up about 10 per cent of all government outlays on education – nearly 20 per cent for universities, about 8 per cent for TAFE, where most student are part-time, and about 5 per cent for schools where the benefits are concentrated on students in the final years of schooling.

Table 3: All governments: education outlay, Australia 1996-97

	\$billion	Per cent of total
Preschool, special and other	1.4	5%
Schools	15.2	55%
Transportation of students	0.9	3%
TAFE	3.2	12%
Universities	6.6	24%
Tertiary n.e.c.	0.1	1%
Education n.e.c	0.3	1%
Total	27.5	100%

Source: ABS Cat. No. 5510.0

Nec not elsewhere classified

Per student or trainee estimates

The aggregate expenditures and enrolment data give only a rough impression on the allocations within education and training and what would be needed to expand the system. Some more detailed data are available on expenditures though the data are not fully comparable across the sectors. Analysis of these were made in a paper for the 1997 Dusseldorp seminar (Burke 1998).

The estimated Commonwealth government expenditure per actual equivalent full-time university student in 1998 was around \$12,100. Part of this expenditure was used for payroll tax and some specific research expenditures. Adjusting for these factors and for the higher costs of postgraduate study suggests that outlay per undergraduate averaged around \$10,000 per full-time student. Expenditure varies by field of study with courses such as medicine nearly three times as expensive as business studies.

An increasing proportion of university outlays are now recovered through the Higher Education Contribution Scheme (HECS). The HECS rates were increased substantially in 1997 and varied by discipline to eg \$3,300 for Arts, and Education, \$4,700 for Business,

Science and 'Engineering' and \$5,500 eg for Medicine and Law. The charges are adjusted for inflation. The income at which HECS is to be repaid was substantially lowered. As discussed in Burke(1998) it now seems likely that the HECS charges will recover about half the public outlays in the low resource fields like law and business, though a much smaller proportion in medicine, the sciences and engineering.

The average public recurrent unit cost of per curriculum hour in TAFE was estimated at \$11.4 for 1997 (ANTA 1998 p.60). The estimate excludes capital costs and superannuation charges and includes payroll tax for those States and Territories where it is charged to State institutions. A full-time course for eg 750 hours per annum at the average cost would therefore give rise to recurrent expenditure of about \$8500. The cost varies across states and by field of study.

Employers of apprentices receive a government subsidy. In 1997 the subsidy to apprentices over the life of successful apprenticeship was \$4,000 (after the fourth year) and the one-year subsidy for trainees was \$1,500.

Students age 16 and over may be eligible to receive student assistance such as the youth allowances. For example full-time students from low-income homes could receive an annual allowance of about \$7000 if aged 18 and over and having to live away from home. Persons aged 22 to 24 year living at home receive nearly \$6000. The maximum rate paid to unemployed persons is the same as the youth allowance for teenagers, though there was a higher rate for persons 21 and over.

Other expenditures

Tables 1 to 3 only report expenditure on the formal education system. As mentioned the Commonwealth government supports contracted training programs eg apprenticeships particularly through subsidies to employers. It also provides some training support for the unemployed though the emphasis is now has been on job placement activities with labour market programs cut very heavily in the 1996-97 budget.

A considerable amount of training is conducted by industry. Table 4 provides details of expenditure on structured training. It shows that in the September quarter in 1996 employers reported spending \$1.2 billion, or about \$4.7 million on an annual basis. Most of the expenditure is undertaken by employers with 100 or more employees and most of these large employers provide structured training. However very few small employers do - and overall less than 20 per cent of employers provided structured training.

The employers' total outlays are sizeable compared with the \$3.2 billion public expenditure on TAFE shown in Table 3. 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. About half the employers' expenditures are for the wages and salaries of the persons undergoing training and half is for the provision of the training.

Table 4: Employer expenditure on structured training, Australia, 1996 July to September

	Employer size			All employers
	1-19 employees	20-99	100 or more	
Total expenditure \$billion	0.12	0.16	0.90	1.18
% of gross wages and salaries	1.2%	1.9%	3.2%	2.5%
Expenditure per employee	\$71	\$136	\$256	\$185
Training per employee – hours	2.42	3.79	6.45	4.91
Expenditure per training hour	\$29	\$36	\$40	\$38
<i>For Employers Reporting Expenditure</i>				
- Hours per employee	12	7	7	7
% employers providing training	13%	51%	88%	18%
Public Sector - % gross wages	0.8%	2.9%	3.2%	3.2%
Private Sector - % Gross Wages	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.

Incidence of education and training for adults

Australia has an ageing population, though, compared with most OECD countries, it has a high proportion of its population in the main education age groups. Table 5 shows that about half the population is now aged 35 or over. In 1998 there were around 260,000 in most single year age cohorts up to age 19. There were an average of 270,000 for those in each single year aged 20-24 (264,000 20 year olds rising to 281,000 24 year olds) but about 290,000 on average for each single year of age for those aged 25 to 44.

Table 5: Population by age group, Australia 1998, million

0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-64	65 and over	Total
1.3	1.3	1.3	1.3	1.4	2.9	2.9	4.1	2.3	18.8

Source: ABS Cat. No. 3201.0

An indication of the distribution by sector of the 20-24 year olds engaged in study is given in Tables 6. The data here is from the administrative collections but the aggregate participation rate of a little over 30 per cent.

Table 6: Participation rates of 20-24 year olds in vocational and higher education, Australia 1997, per cent

	Male	Female	Person
Vocational education	19.1	15.1	17.2
Higher education	14.7	17.2	15.9

Source: Source: Ball 1998, Marginson 1998

There is a big difference in full and part-time status across the sectors. About 87 per cent of the students aged 20-24 in vocational education were enrolled part-time (Ball 1998). In contrast, only 27 per cent of the university students of this age were estimated to be part-time¹.

Table 7, based on an ABS survey, confirms that over 30 per cent of persons aged 20-24 engage in courses of study. It also shows that about 40 per cent had undertaken formal training courses in the previous 12 months. (Note that the estimated survey population for 20-24 year olds is about 5 per cent less than the total population of that age shown in Table 5). Some persons engage in both study and training courses. It appears that a total of a little over 60 per cent of the 20-24 age group undertake some formal training courses or are undertaking study.

If we also include informal training on-the-job then nearly 90 per cent of that age group (who are in, or are marginally attached to, the labour force) are engaged in some training or study.

¹ Table 6 includes overseas students who make up about 10 per cent of university students of all ages. Data recently released for 1998 shows that nearly half the overseas students are clustered in the 20-24 age group. The participation rate for *non-overseas* students is about 14 per cent for 20-24 year olds, compared with the rate of 15.9 per cent shown in Table 6.

Table 7: Education and training profile by age and labour force characteristics, Australia 1997

	15-19	20-24	25-34	Total 15-64
All persons '000	1,228	1,286	2,560	10,395
Studying at survey date %	77	32	14	20
Completing one or more training courses in last 12 months %	13	39	44	38
Persons in or marginally attached to labour force '000	944	1,199	2,468	9,794
<i>Study or training courses undertaken %</i>	34	61	51	47
Employed persons '000	606	996	2,106	8,283
<i>Study or training courses undertaken %</i>	39	63	54	50
Unemployed or marginally attached to labour force '000	338	203	362	1,511
<i>Study or training courses undertaken %</i>	25	53	31	30

Source: ABS 6278.8 (1998)

All persons are persons in the labour force, persons marginally attached to the labour force, persons who were wages and salary earners in the last 12 months and persons in full and part-time study.

ABS surveys also provide estimates of the qualifications of persons 15 and over in education and training. Table 8 shows that about 40 per cent of 20-24 year olds hold post-school qualifications and over 20 per cent without qualifications are undertaking tertiary study.

There are great difficulties in international comparisons. However, by several measures Australia's post school study and training levels for 20-24 year olds and for older age groups are quite good (OECD 1998). But while over 60 per cent of 20-24 year olds have qualifications or are studying it still means that nearly 40 per cent have no qualifications and are not studying. And as shown in Table 7 the ones without qualifications are more likely to be those who are unemployed and those marginally attached to the labour force. This is so for 20-24 year olds but is even more marked among older persons.

Table 8: Persons aged 20-24: Educational Attainment, Australia May 1998

	000	% of total
Degree, including higher degree and post graduate diploma	158	12
Undergraduate diploma	51	4
Associate Diploma	54	4
Skilled Vocational	118	9
Basic Vocational	141	11
Total with post-school qualifications	523	39
Completed school	544	40
Attending tertiary	272	20
Did not complete highest school	273	20
Attending tertiary	37	3
Total without qualifications	817	61
Still at school	4	0
	1343	100

Source: ABS Cat. No.6227.0

What are the costs of expansion

To expand the opportunities in education and training for those not currently provided for may require considerable growth in expenditures.

Some very simplified examples are provided here for 20-24 year olds only⁽²⁾. A more comprehensive exercise would consider targets for 20-24 year olds alongside targets for other age groups.

Suppose that it was determined to raise the proportion of 20-24 year olds in either education or training from about 61 per cent to about 70 per cent. This would mean an increase of about 120,000 persons in education and training. If they were in public vocational education and training on a full-time basis at about \$8,000 per annum then this would involve additional expenditures of about \$1 billion. If they were from low income groups there would also be youth allowance payments. For a considerable proportion this would be a transfer from one form of youth allowance to another. Some 200,000 20-24 year olds are classified in Table 7 as unemployed or marginally attached to the labour force.

² An example of such an exercise in setting and costing targets was given in the Finn Report (1991).

However just providing the places and the student support may not be sufficient. The evidence does not suggest that a large number of young people are unable to obtain tertiary places at the moment. About 16,000 20-24 year olds were estimated to have been unable to obtain a place in 1998 (ABS Transition 1998 p.8). A far larger number, approaching 900,000, did not apply for a tertiary place. Unless young people perceive there to be courses suitable for them and likely to yield benefits then they will not readily seek to enrol. And a major factor in the benefits will be the likelihood of well paid employment on completion of a course.

The expansion in the numbers receiving training in the workforce is partly a matter of increasing the training for those in the workforce but also increasing the numbers in work. Table 4 showed the estimated expenditure per training hour was about \$38. As this includes the wages of the trainee it could be expected that the rate per young adult would be somewhat less, say \$30. If it were assumed that say 100 hours of training were required, then the cost for 120,000 persons would be about \$350 million -much less than full-time education.

Encouraging employers to provide this extra training is a major issue. Government subsidies as for apprenticeships are one option. The even bigger problem here is for the young people who are out of employment. The real cost will be in persuading employers to engage them. The additional cost for this is very difficult to estimate

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.

Compared with OECD countries Australia has average 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 shows that a substantial expansion in education and training for 20-24 year olds would involve a substantial increase in expenditures for the provision of training and for incentives to young people and employers to engage in education and training.

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