



**MONASH UNIVERSITY – ACER  
CENTRE FOR THE ECONOMICS OF EDUCATION AND TRAINING**

6<sup>th</sup> National Conference

**VET: CONNECTIONS, COSTS & CONTRADICTIONS**

Monday 26 August 2002  
Ascot House, Ascot Vale, Victoria

---

**THE COSTS OF VET IN AUSTRALIA: DATA AND ISSUES**

Gerald Burke

In recent years the real cost of the provision of VET has fallen per hour of training delivered. This decline in cost is mainly the result of the constraint on public funds at the same time as enrolments and nominal hours of training delivered increased rapidly. Depending on the measure of price change used, the average cost per hour of publicly provided training fell between 11 and 17 per cent in the years 1997 to 2000. Data on the level in 2001 should be available by the time of the conference.

In the face of such a cut in costs some questions can be asked:

- has there been a rapid increase in productivity?
- if so how has this been achieved?
- has there been a switch to lower cost courses?
- has there been a decline in quality?
- what data are available or needed for answering these questions?

The paper first presents some information on the changes in expenditure in VET in constant prices and then discusses the issues listed above.

**Price measures and VET revenues and costs**

For comparisons of expenditures over time it is essential that the effect of price changes is accounted for. To do this it is necessary to adjust the measure of expenditures in current prices by appropriate price deflators<sup>1</sup>.

---

<sup>1</sup> These were regularly prepared for schools (the Schools Price Index) until the early 1990s and for universities up to 1996 (indices for academic and general salaries, non-salary costs equipment and capital) but these measures are no longer calculated. It may be noted that the Australian Institute for Health regularly publishes indexes for a range of medical and hospital services. ABS provides implicit deflators for education in the national accounts.

The form of deflation depends on the purposes for which the price adjustment is made. The deflator for the GDP is sometimes used in removing the effects of price changes. The GDP deflator is the measure of the average of price changes across all goods and services in the country. If this is applied to expenditure on education and training the result is *not* a measure of the change in resources in education and training but rather of the demands that education and training make on the community's resources.

If the purpose is to see whether the resources available for education and training have increased then it is appropriate to make the adjustment using a price index that measures the prices of the main resources used in education and training e.g. teachers, non-teaching staff, non-employee current resources and capital. This means the calculation of an index based on the cost of a 'basket of education resources'. Due to substitution among resources over time e.g. the increased use of information technology relative to teachers, the basket of resources will need to be revised. The chain-volume technique used in the National Accounts in effect takes the previous year's pattern of resource use as its basket and the resulting data are comparable for the current year against the previous year (ABS Cat. no. 5204.0).

The implicit deflator for the GDP and for the value added in the education industry are shown in Table 1. The deflator for education has increased much more than that for the GDP. This is to be expected for 'non-market' industries, such as education and health, where production is measured in the National Accounts by the cost of the inputs and not by the sale of the service. The National Accounts do not show any change in productivity in such areas (see ABS 5204.0 Table 22) whereas labour productivity in the market sector is estimated to have grown by 2.8 per cent per annum in the period considered in Table 1 (ABS 5204.0 Table 20). If salaries in education move roughly in line with the general level of wages and salaries in the community then it is to be expected that the implicit deflator for education will increase considerably more than the deflator for the GDP.

The best known measure of price change is the Consumer Price Index (CPI). The CPI measures the change in prices of the typical basket of goods and services that household consumers buy. It is not necessarily a good measure of the change in the cost of the resources used in education and training institutions, which are heavily labour intensive. It is a good measure for changes in student living costs and student financial assistance such as the Youth Allowance.

A measure of the changes in the average level of wages and salaries paid in the economy is provided by the ABS in its estimates of Average Weekly Earnings. Biannually estimates are also provided at May of the earnings for particular occupations and there is data over a considerable period for e.g. school teachers but not for VET or TAFE teachers as a separate category

To overcome some deficiencies in these measures the ABS has recently developed a Wage Cost Index (WCI) which provides a measure of the changes in wage and salary costs unaffected by the quality or quantity of work performed (ABS Cat. no. 6345.0). For education *as a whole* this should provide a good measure of changes in personnel costs.

The education sectors differ in the composition of resources used and it may be appropriate to develop indexes for the major sectors.

An alternative and simple deflator based on the average weekly earnings to represent wage and salary costs and the CPI to represent other costs has been calculated and is shown in Table 1. This deflator increased by 33 per cent over the period compared with 27 per cent for the Education deflator in the National Accounts, 22 per cent for the CPI and 15 per cent for the GDP deflator. This alternative deflator is included in analysis in this paper. It can be taken to indicate the extent to which costs would have increased in education if wages and salaries had moved in line with the average in the community and no major changes had occurred in the resource mix used in education.

**Table 1. Price deflators, Australia 1993 to 2001,**

Year ended June 30	1993	1994	1995	1996	1997	1998	1999	2000	2001	<i>Increase Average 1993 to annual 2001 growth</i>	
										%	%
Implicit deflator GDP	0.91	0.92	0.93	0.95	0.97	0.98	0.98	1.00	1.04	15	1.8
Implicit deflator Education Gross Value Added	0.84	0.87	0.88	0.90	0.93	0.96	0.99	1.00	1.06	27	3.1
CPI	0.87	0.88	0.91	0.95	0.96	0.96	0.98	1.00	1.06	22	2.5
AWE	0.77	0.79	0.83	0.86	0.90	0.93	0.97	1.00	1.05	37	4.0
Alternative deflator 75% AWE + 25% CPI	0.79	0.82	0.85	0.88	0.91	0.94	0.97	1.00	1.05	33	3.6
Teachers ordinary time earnings, May data	0.79	0.82	0.84	0.87	na	0.93	na	1.00	na	32*	3.5*
Wage Cost Index Education	na	na	na	na	na	0.94	0.97	1.00	1.04	na	3.4
Wage Cost Index all industries	na	na	na	na	na	0.94	0.97	1.00	1.04	na	3.3

Source: ABS Catalogue nos 5204.0, 6302.0, 6306.0, 6345.0, 6401.0

Wage Cost Index covers Total Hourly Rates of Pay Excluding Bonuses

\* estimated assuming same growth as for AWE for 2001

## Revenues

Table 2 reports VET revenues from 1992 to 2000. They are seen to grow from \$3.1 billion to \$4.3 billion in nominal prices. However, at 2000 prices the growth is much smaller and peaks in 1997. Total revenues in 2000 prices were about 7 per cent lower in 2000 than in 1997. Total government funds in 2000 prices declined about 10 per cent from 1997.

**Table 2. VET Operating Revenues, Australia 1992 to 2000**

	<i>Share</i>						<i>Share</i>				<i>Share</i>	
	1992	<b>1992</b>	1993	1994	1995	1996	1997	<b>1997</b>	1998	1999	2000	<b>2000</b>
	<i>\$m</i>		<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	%	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	%
Commonwealth												
Recurrent	437	<b>14</b>	619	632	775	853	731	18	732	721	737	<b>17</b>
Commonwealth Capital	220	<b>7</b>	220	228	228	228	191	5	194	194	192	<b>5</b>
Commonwealth Specific Purpose – ANTA	na		na	Na	na	na	106	34	53	54	55	<b>1</b>
Commonwealth Specific Purpose – Other	na		na	Na	na	na	110	3	81	49	43	<b>1</b>
<b>Total Commonwealth</b>	<b>657</b>	<b>21</b>	<b>839</b>	<b>859</b>	<b>1003</b>	<b>1080</b>	<b>1138</b>	28	<b>1059</b>	<b>1017</b>	<b>1027</b>	<b>24</b>
Other government	na		na	Na	na	na	122	3	126	121	123	<b>3</b>
State Recurrent	1792	<b>59</b>	1828	1964	2003	2071	2004	49	2065	2109	2156	<b>51</b>
State Capital	113	<b>4</b>	130	110	110	143	130	3	113	128	110	<b>3</b>
<b>Total Government</b>	<b>2562</b>	<b>84</b>	<b>2796</b>	<b>2933</b>	<b>3115</b>	<b>3294</b>	<b>3395</b>	83	<b>3364</b>	<b>3375</b>	<b>3415</b>	<b>80</b>
Fee for service	274	<b>9</b>	219	303	307	347	351	9	323	342	427	<b>10</b>
Ancillary Trading and other	122	<b>4</b>	135	91	173	175	207	5	193	196	247	<b>6</b>
Student fees	98	<b>3</b>	102	122	147	149	156	4	155	160	171	<b>4</b>
<b>TOTAL</b>	<b>3056</b>	<b>100</b>	<b>3253</b>	<b>3450</b>	<b>3742</b>	<b>3964</b>	<b>4108</b>	<b>100</b>	<b>4034</b>	<b>4073</b>	<b>4260</b>	<b>100</b>
	<i>\$m</i>		<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>		<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	
Government funds at 2000 prices	3347		3580	3647	3696	3773	3772		3615	3537	3415	
<b>TOTAL at 2000 prices</b>	<b>3991</b>		<b>4165</b>	<b>4288</b>	<b>4440</b>	<b>4540</b>	<b>4565</b>		<b>4335</b>	<b>4268</b>	<b>4260</b>	

Source: NCVER (2001 and earlier publications).

Note that changes in the collection and the introduction of accrual accounting from 1997 affect comparisons over time. Constant price estimates use the alternative deflator in Table 1.

Governments provided about 84 per cent of revenue in the early 1990s, falling to 83 per cent in the late 1997 and to 80 per cent in 2000. The Commonwealth share rose to 1997 but has fallen since. The increased commitment by the Commonwealth since 2000 may stabilise the shares.

The other notable change is the growth in ‘fee for service’ which includes overseas student fees, payments by industry, full-fee payments by (or for) Australian students and some payments by governments other than the regular funding to public institutions. This has fluctuated, probably mainly because of the government element, but jumped to about 10 per cent of all revenues in 2000. It varies considerably across States and Territories.

There has not been a much change in student fees for publicly funded courses: they raise less than 5 per cent of total revenues. Most State and Territory authorities cap the level of

tuition fees at about \$1 per student contact hour and partially or fully exempt low income or disadvantaged students.

## Expenses

### *Expenditure per annual hour curriculum*

ANTA (2001) reported public recurrent expenditure per 'annual hour curriculum' (AHC) delivered in government funded VET programs<sup>2</sup>. Changes in statistical systems mean that comparisons prior to 1997 are not feasible. Table 3 shows government funded recurrent expenditure in actual prices at 2000 prices deflated by the GDP deflator and also in 2000 prices deflated by the alternative deflator shown in Table 1 based mainly on Average Weekly Earnings<sup>3</sup>.

**Table 3. Government recurrent expenditure, total and per VET annual hour curriculum, Australia 1997 to 2000**

	1997	1998	1999	2000	Change 1997 to 2000
	\$m	\$m	\$m	\$m	%
Government recurrent expenditure - actual	3,114	3,207	3,219	3,297	6
Government recurrent expenditure - 2000 prices (GDP deflator)	3,240	3,291	3,277	3,297	2
Government recurrent expenditure - 2000 prices (alternative deflator)	3,457	3,445	3,373	3,297	-5
Adjusted Annual Hours Curriculum AAHC m	228	243	256	260	14
<b>Government expenditure per hour of training</b>	\$	\$	\$	\$	
Actual /AAHC	13.7	13.2	12.6	12.7	-7
2000 prices (GDP deflator)/AAHC	14.2	13.5	12.8	12.7	-11
2000 prices (alternative deflator)/AAHC	15.2	14.2	13.2	12.7	-17

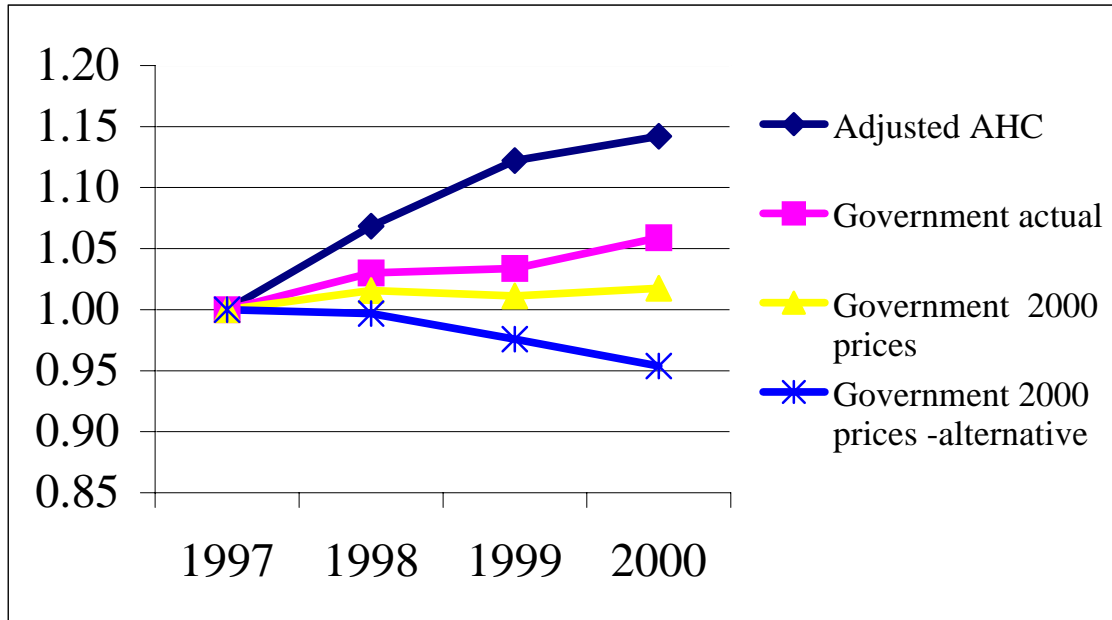
Source: ANTA 2001 Vol 3

Note: Under the definition used by ANTA total operating expenditure less: fee for service revenue, ancillary trading revenue, other operating revenue, revenue from specific purpose Commonwealth funds, VET-in-schools funding, redundancy payment external to VET budgets, and skill centre capital revenues. This means that public funds, *student fees* and depreciation costs *are* included in the estimates. AAHC equals actual annual hours curriculum adjusted for invalid enrolments.

<sup>2</sup> Estimates are also made of cost per hour of successful module completion

<sup>3</sup> The apparent decline in government recurrent expenditure at 2000 price is less than the decrease in total revenues from government shown in Table 2. Capital and other non-recurrent expenses have borne disproportionate reductions.

**Figure 1. Government recurrent expenditures on VET at various price measures and Adjusted Annual Hours Curriculum**



Total publicly provided hours of training increased by 14 per cent from 1997 to 2000. Expenditure *per hour* is shown to have declined by 7 per cent in actual dollars, 11 per cent in 2000 prices measured by the GDP deflator and 17 per cent in 2000 prices measured with the alternative deflator. Figure 1 illustrates these matters.

There are remarkable differences among the States as shown in Table 4, which reflect differences in State funding and staffing policies and special needs. These differences need to be explored in detail and linked to measures of quality before conclusions can be drawn as to the relative success of different State policies. A factor in this consideration is the estimate of the relative difficulty of the various States and Territories in providing VET. The Grants Commission for example estimates that the Northern Territory requires twice the Australian average to provide a similar level of service per hour of training.

**Table 4. Government recurrent expenditure on VET per publicly funded annual hour of curriculum, Australia, States and Territories, 1997 to 2000**

	1997	1998	1999	2000
	\$	\$	\$	\$
NSW	15.3	15.6	14.8	13.8
Vic	10.7	10.6	9.5	9.5
Qld	15.1	12.5	13.6	15.2
SA	15.9	13.8	12.0	12.2
WA	15.4	13.6	13.3	12.8
Tas	19.3	16.9	16.1	15.0
NT	29.3	28.2	20.0	20.7
ACT	17.5	17.4	15.4	13.1
Australia	14.2	13.5	12.8	12.7

Source: ANTA (2001 Vol 3)

Notes: Estimates in 2000 prices using the GDP deflator.

### Effects of the changes

It cannot be assumed that the quality of VET provided declined in line with the real expenditure per hour of training. The theme of 'growth through efficiencies' had been used in the VET sector in recognition of the approach to using resources more effectively to achieve the desired outcomes.

There are various ways in which the reduction in revenues per hour of training can be borne. These are:

- Cross subsidy from full-fee programs, from commercial programs and trading
- Reduction in teacher costs per hour of training received
- Reduction in other costs

#### *Cross subsidy*

In both VET and higher education the growth in full-fee overseas students has been seen as a source of a cross-subsidy to Australian students but there is yet no data on the size of this effect. Fee for service and ancillary trading now supply some 16 per cent of VET revenues so there is some scope for cross subsidy. However the extent is clearly limited as the costs of providing the training must be borne within this 16 per cent. Given the competitiveness in the commercial and international markets it is not clear that a large proportion of these revenues are available for cross subsidy. It would be surprising if it could yield a 5 per cent addition to the public resources for VET. However there are major variations across States in this and Victoria has a particularly high level of private funds.

**Table 5. Operating expenses by resource category, VET, Australia 1997 to 2000 current \$**

	1997	1998	1999	2000	Share 2000	Change 1997 to 00
	\$m	\$m	\$m	\$m	%	%
Employee Costs	2457	2441	2398	2510	60	2
Supplies and Services	811	868	846	927	22	14
Grants and Subsidies	197	176	191	184	4	-7
Payments to Non-TAFE Providers for VET Delivery	176	217	252	268	6	52
Depreciation and Amortisation	229	234	239	252	6	10
Other	84	13	13	20	0	-76
<b>Total Operating Expenses</b>	<b>3954</b>	<b>3949</b>	<b>3939</b>	<b>4161</b>	<b>100</b>	<b>5</b>
Balance of revenue minus expenses before abnormal and extraordinary items	155	84	134	99		
Employee Costs at 2000 prices	2727	2622	2513	2510		-8
<b>Total at 2000 prices</b>	<b>4389</b>	<b>4243</b>	<b>4128</b>	<b>4161</b>		<b>-5</b>

Source: Based on data in NCVER 2001; deflation using alternative deflator

Note: The balancing item in the VET operating statement differs from the format in government finance statistics in that the VET data refer only to the net balance on *operations*. Government finance statistics on the other hand show the net acquisition of non-financial assets (purchase of assets less depreciation) and have net lending (or borrowing) as the final balancing item. The cash purchase of non-financial assets in 2000 is shown in the Statement of Cash Flows at \$280 million, compared with \$343million in 1997.

### *Teacher costs*

The main part of the reduction in cost must come from reduced expenses of teachers and in other costs. Table 5 provides details of operating expenses over the main resource categories from 1997. The most notable feature is the growth in payments to non-TAFE providers and the stagnation of employee costs within public VET institutions. In constant prices employee costs fell 8 per cent in the period compared with a 5 per cent fall in total operating expenses. However the payment to employees by non-TAFE providers is not shown and payments by non-TAFE providers was the fastest growing item in Table 5.

No regular staffing data are compiled for the VET sector and so it is not possible to provide information on student-teacher ratios as a 'reality check' on the expenditure on staff as it is for the other main sectors of education.

A reduction in the share of teachers who are permanent can reduce the salary/wage paid per hour of training delivered. There is evidence from at least one state of a substantial shift to sessional from full-time staff and it is likely that this has occurred in all states

(Malley et al 2000). Kronemann (2001, p. 5) reports that in 2001 some 58 per cent of female TAFE teachers were permanent/ongoing and 77 per cent of males.

A further factor that can reduce teacher salaries paid is the employment additional teachers, ongoing or casual, rather than pay overtime to full-time teachers. There are again anecdotes that the extent of overtime varies among States and Territories but no hard data.

A failure of teachers' salaries to keep pace with the general level of earnings can also reduce relative teacher costs. The extent to which this has happened is a matter for further study. It is necessary in such analysis to take account of the distribution of teachers by level as these may change to compensate or enhance any changes in average salary.

A reduction in teacher numbers per given volume of training can be made in a number of ways, several of which seem to have occurred but little data are available. Smaller number of teaching hours per nominal curriculum hour received can be achieved by:

- elimination of small classes
- increase size of group
- reduction face-to-face hours per program, facilitated by online learning and workplace learning

On most of these issues there is little data, for as mentioned there is no national data base on teachers in VET. Discussions with staff of TAFE institutes as part of other work by CEET confirms that the arrangements for delivery of programs in the workplace means that the application of the usual hours concept has little meaning. There also appears to be some leeway in face-to-face delivery with the flexibility available in training packages.

Both teacher and other costs can be contained by a switch to cheaper courses. This is not just in regard to fields of study but also the decision to deliver only to larger groups.

#### *Other costs*

Table 5 shows that expenses for supplies and services increased relative to personnel costs. A major expense in recent years has been the continuing requirements for information technology software and hardware (some of which would be included in purchasing of assets and only attributable through depreciation in the items in Table 5). This supports the management and teaching of VET institutions as well as on-line learning. Again the published data do not allow a detailed analysis.

### **Concluding comment**

The paper has documented the large fall in revenues in real terms per hour of training delivered. It has discussed some of the ways this fall in revenues has been dealt with in terms of reduced costs though there is little hard data on the relative importance of the various changes.

Has there been a reduction in quality? Some instances of quite inadequate provision in workplace training arrangements were reported by Schofield, though how widespread this is again not quantified.

Concern for teacher quality, compounded by the ageing of the teacher workforce is the subject of a range of ongoing studies and is clearly the major issue of concern.

Some of the changes indicate real efficiencies. The arrangements made in some workplace training to assess trainees carefully and arrange the training to their needs leads not only to a reduction in VET staff hours but quite likely to an increase in the quality of the training. In some cases in earlier years the contact hours in some TAFE courses appeared to be very high and leave little time for student independent learning. New technologies should mean that most students can benefit by more time managing their own learning.

The elimination of small groups could be seen as an efficiency but not always. In, for example the management field, the delivery of training to small businesses will clearly be more expensive than delivery to large firms. The extent to which this reduces access is again a matter not quantified.

In the support for VET in schools TAFEs in Victoria have reported difficulty, given their other financial constraints shown in Table 4, in providing training at less than their usual funding rates. This can limit access to VET in school among less advantaged students unless they can cover a not insubstantial fee charged by schools.