# Australia's Youth: Reality and Risk

## Young People's Participation in and Outcomes from Vocational Education

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# Summary


1. Over the past two decades patterns of participation by young people in work, education and training have changed dramatically:
    - young people used to be either in full-time work or full-time education or training, with the only real exception being apprenticeships (which involved structured training through a combination of training on-and-off the job);
    - nowadays there are many different pathways with the norm now being full or part-time study, often combined with part-time work, and an expansion of structured training through the introduction of traineeships since the mid 1980's (as a result of the Kirby report).
2. Despite the focus on growth funds to increase the participation of young people (ie Finn Targets and growth funds in ANTA agreement) — over the 1990s the percentage of 15-19 year olds in VET has fallen from around 30 per cent of the total student number to around 20 per cent. The growth in vocational education has occurred, proportionately, in older age groups.
3. Even though the total number of 15-19 year olds studying in VET fell from 274,500 to 261,000 between 1990 and 1996, the proportion of 15-19 year olds in VET remained steady.
    - This means that the fall is a demographic issue due to a reduction in the numbers of 15-19 year olds in Australia over the period of 9 per cent. The 15-19 year age cohort accounted for over 12 per cent of the 15-64 population in 1990 but its representation had fallen to 10.5 per cent of the working age population by 1996.
    - Its causes are not a fall away in the demand for VET by young people as is commonly believed.
4. The composition of VET participation between 1990 and 1996 by 15-19 year olds has changed largely as a result of occupational shifts that have occurred in the labour market.
5. Although the focus on apprenticeships and traineeships is important, participation by young people in other forms of VET is just as important and is growing.
6. Key apprenticeship / traineeship developments between 1990 and 1996 include a rapid decline in apprenticeship/traineeship numbers between 1990 and 1995 — greater than the fall in the representation of 15-19 year olds in the working age population. What is not commonly understood is that there has been a dramatic recovery in the total number of those in a

training agreement because of the expansion of traineeships, with apprenticeship numbers continuing to decline.

7. The impact of recent initiatives in the VET sector have yet to be felt. These include the opening up of the market to private providers, national recognition of the skills and qualifications of all new apprentices and trainees and the New Apprentices Scheme that aims to expand the numbers of commencing apprenticeships and traineeships and the range of industries available to apprentices. The new initiatives encourage vocational education and training to be undertaken in schools and there is every indication that there will be a resurgence of interest in this vocational education pathway for 15-19 year olds.

## Provision of Vocational Education

Changes that have occurred in the participation and outcomes of 15 to 19 years olds in the vocational education and training sector since 1990 need to be considered in the context of a number of major funding and policy changes that have impacted on the sector since the late 1980s.

Funding for pre-vocational courses was dropped at the end of the 1980s because of the high cost of providing industrial experience. The Training Guarantee Act was introduced in 1990 and the off-the-job training subsidy component of CRAFT was dropped, except to group schemes (where it continued to 1994) because of the view that industry largely accepted its training responsibilities and the major beneficiaries of the off-the-job training subsidy had been large companies. Traineeships (introduced in 1985) were extended to all age groups in 1992 and in 1994 the 'Working Nation' strategy included National Training Wage traineeships that allowed some traineeships to be all-on-the-job and encouraged the penetration of traineeships into new areas of the labour market. Traineeships were accepted as a mainstream training system in 1994 and were funded in the same way as apprenticeships for the off-the-job component of traineeship training.

The 1992 ANTA Agreement introduced substantial changes in inter-government arrangements for the governance and management of TAFE and training based on a national co-operative system. To overcome a perceived funding imbalance between TAFE and schools and universities the Commonwealth injected an additional $70m of growth funds in each year from 1993 to the VET sector, on top of an additional $100m of funding in 1992. By 1995 the Commonwealth contributed 28 per cent of recurrent funding to the sector compared with 17 per cent in 1991, and continued to fund 64 per cent of the capital program.

To alleviate the effect of the early 1990's recession on training special counter-cyclical policies were introduced. These included initiatives involving additional wage subsidies and intensive training arrangements designed to increase the level of apprenticeship/traineeship intake and assist out-of-trade apprentices and trainees.

In 1995 the Australian Vocational Training System was introduced building on apprenticeships and traineeships and introducing changes to curriculum and assessment, conversion of courses to a competency base and recognition of prior learning.

Further changes to the vocational education sector in the pipeline include the opening up of the market to private providers, national recognition of the skills and qualifications of all new apprentices and trainees and the New Apprenticeships Scheme that aims to expand the numbers of apprenticeships and traineeships and the range of industries available to apprentices. Industries such as technology and communications, tourism and hospitality will be targeted in addition to the traditional trades such as manufacturing,

engineering and construction[1]. The new initiatives encourage vocational education and training to be undertaken in schools and there is every indication that there will be a resurgence of interest in this vocational education pathway for 15-19 year olds.

## Profile of 15-19 year olds in the Vocational Education Sector between 1990 and 1996

### Participation of 15-19 year olds

The recent funding increases to the vocational education and training (VET) sector have resulted in a substantial increase in course enrolments in vocational education. Course enrolments in VET grew by almost 17 per cent between 1994 and 1995, and by a further 10 per cent between 1995 and 1996. The growth in the VET sector has not occurred in the 15-19 year old age cohort but in older age groups. In 1990 the 15-19 year old cohort accounted for 30 per cent of all clients enrolled in vocational courses. This percentage had declined to about 22 per cent in 1995, and declined further to around 20 per cent of clients in 1996.[2]

**Table 1: Participation rates of 15-19 year olds in vocational education**

| | 1990 | | | 1995 | | | 1996 | | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Males | Females | Persons | Males | Females | Persons | Males | Females | Persons |
| 15-16 years | 13.5* | 13.2* | 13.3* | 12.0 | 10.2 | 11.1 | 12.8 | 10.6 | 11.8 |
| 17 years | 25.2 | 15.4 | 20.4 | 24.3 | 18.2 | 21.4 | 24.5 | 18.6 | 21.7 |
| 18 years | 32.6 | 19.7 | 26.3 | 33.4 | 25.3 | 29.5 | 32.9 | 25.1 | 29.4 |
| 19 years | 29.7 | 16.4 | 23.2 | 32.2 | 22.6 | 27.5 | 31.9 | 22.0 | 27.2 |
| 15-19 years | 23.3* | 15.7* | 19.6* | 23.2 | 17.4 | 20.2 | 23.3 | 17.4 | 20.4 |

* includes under 15

Source: Derived from *Selected TAFE Statistics*, 1990 and NCVER data, AVETMISS collection 1995 & 1996, ABS demographic data

Over the period 1990 to 1996, participation rates in vocational education for 15-19 year olds have remained largely unchanged at around 20 per cent (see Table 1). Although male participation rates remained unchanged over the period at around 23 per cent there was a small rise in the female participation rate from 16 per cent in 1990 to 18 per cent in 1996. Within the age group,

[1] Media release, the Federal Minister for Schools, Vocational Education and Training, 20 August 1997.

[2] The post 1994 data on vocational students used in this study has been obtained from the AVETMISS data collection managed by the NCVER. Comparisons with data from earlier years are problematic because of changes in the scope of the data and the collection process.

there has been a decline in the participation rate of 15 to 16 year olds since 1990, with a compensating rise in the participation rate of 18 and 19 year olds.

Despite largely unchanged participation rates of the age group as a whole, there was a decline in the absolute number of 15 to 19 year olds in vocational training from 274,500 in 1990 to 255,900 in 1995, rising to 260,900 in 1996. This decline can be attributed to demographic factors as there was almost a ten percent decline in the number of 15-19 year olds in the Australian population between 1990 and 1995, followed by a one percent rise in the age cohort between 1995 and 1996.

While part-time enrolment continues to be the preferred mode of attendance for the 15 to 19 year age cohort, the percentage of students undertaking part-time study has declined from 84 per cent in 1990 to 78 per cent in 1996 (and 1995). Although the proportion undertaking full time study was relatively constant across ages in the cohort in 1990, there are relatively more students studying full time at older ages in the cohort in 1996. Amongst 18 year olds, 35 per cent of females and 25 per cent of males were undertaking a full time study load in 1996, compared with 27 per cent of females and 15 per cent of males in 1990.

Notwithstanding the relatively constant participation rates between 1990 and 1996 substantial changes have occurred in terms of the composition and type of vocational courses being undertaken by 15 to 19 year olds. In 1996, over 80 per cent of all course enrolments for 15 to 19 year olds were commencing enrolments (87 per cent of female enrolments and 79 per cent of male enrolments) while only 72 per cent of all clients in 1990 were a commencing enrolment. The high percentage of commencing enrolments in 1996 can be attributed to students undertaking shorter courses and enrolling in more than one course in a year.

**Table 2: Cumulative frequency of course-curriculum hours, by age, 1996**

| 1996 | Course curriculum hours: quartiles of course enrolments, by age | | |
|---|---|---|---|
| | 25 per cent | 50 per cent | 75 per cent |
| age 15 | 72 | 305 | 590 |
| age 16 | 173 | 392 | 720 |
| age 17 | 200 | 477 | 864 |
| age 18 | 269 | 678 | 960 |
| age 19 | 295 | 760 | 960 |

Source: NCVER data , AVETMISS collection 1996

The profile of vocational course enrolments differs across ages with 15 and 16 year olds in 1996 undertaking courses with substantially less course-curriculum hours in the vocational sector than 17, 18 and 19 year olds (see Table 2). Only about a quarter of 15 year old course enrolments were for courses with over 590 course-curriculum hours, and a quarter of course

enrolments in this age group were for short courses with less than 72 course-curriculum hours. Over 50 per cent of 18 and 19 year old course enrolments were for courses with more than 678 and 760 course-curriculum hours, respectively. The course-curriculum hours profile across ages was largely unchanged between 1995 and 1996.

The distribution of highest school level completed, by vocational students aged 15 to 19 in 1996, is presented in Table 3. Of the 15 to 19 year old age cohort undertaking vocational courses in 1996 over 40 per cent had completed year 12. Amongst the 17 year old students, over 20 per cent had completed year 12, with 58 per cent and 66 per cent of 18 and 19 year olds, respectively, having completed Year 12.

**Table 3: Distribution of highest school level completed, by age, 1996**

| Highest School level | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 |
|---|---|---|---|---|---|---|
| age 15 | 0.9 | 2.5 | 33.9 | 55.4 | 6.7 | 0.7 |
| age 16 | 0.3 | 0.9 | 10.5 | 69.3 | 15.7 | 3.3 |
| age 17 | 0.3 | 0.7 | 6.1 | 39.3 | 33.3 | 20.3 |
| age 18 | 0.2 | 0.3 | 3.2 | 20.3 | 17.6 | 58.3 |
| age 19 | 0.3 | 0.3 | 2.5 | 16.0 | 15.1 | 65.8 |
| ages 15-19 | 0.3 | 0.6 | 6.3 | 32.5 | 19.3 | 41.0 |

Source: NCVER data, AVETMISS collection 1996

By comparison, a third of students commencing a vocational education course in 1990 (who indicated they had completed secondary school and provided information on their highest school level completed[3]) had completed Year 12. Less than 9 per cent of 17 year old students and about 37 per cent of 18 and 19 year olds had completed Year 12. Albeit comparisons between 1996 and 1990 are problematic because of the poor reporting of 'highest school level completed' in 1990, it can be concluded that 15-19 year olds undertaking vocational education in 1996 have completed more years of schooling prior to commencing vocational education than was the case in 1990.

The courses undertaken by the 15 to 19 year old cohort have altered during the 1990s (see Table 4) reflecting changes that have occurred in the labour market over the 1990s. In 1990, about a third of vocational students were enrolled in the 'recognised trades: complete' stream-of-study, 15 per cent were enrolled in 'operatives: initial' courses and 10 per cent and 9 per cent were enrolled in 'basic employment skills' and 'educational preparation' courses, respectively. By 1995 less than a fifth of vocational students were undertaking the 'recognised trades: complete' stream-of-study, and the

[3] About a third of commencing enrolments in the 15-19 year age group in 1990 did not provide information about highest school level completed.

proportion undertaking this stream-of-study in 1996 had declined further to 17 per cent. By 1995 (and 1996), the same proportion of students were enrolled in the 'operatives: initial' stream-of-study as in the 'recognised trades: complete' stream-of-study. Course enrolments have increased relatively in the 'Other skills' and 'Para-professional higher technician' course streams. The 'basic employment skills' stream continues to attract over 10 per cent of course enrolments.

**Table 4: Stream of study, 15-19 year olds (Per cent).**

| Stream | 1990 | 1995 | 1996 |
|---|---|---|---|
| Basic employment skills | 10.3 | 11.2 | 10.4 |
| Educational preparation | 9.4 | 9.0 | 8.7 |
| Operatives:initial | 15.4 | 18.4 | 17.2 |
| Recognised trades: part exempt | 2.6 | 5.9 | 6.2 |
| Recognised trades: complete | 32.4 | 18.9 | 17.3 |
| Other skills: part exempt | 3.3 | 6.5 | 9.5 |
| Other skills: complete | 8.0 | 8.4 | 11.0 |
| Trade technician/supervisory | 6.6 | 6.1 | 4.6 |
| Para-professional technician | 1.6 | 1.9 | 1.8 |
| Para-professional higher technician | 6.4 | 10.1 | 9.6 |
| Professional | 0.5 | 0.6 | 1.1 |
| Operatives: post initial | 1.0 | 1.1 | 1.1 |
| Trades/other skills: post initial | 2.2 | 1.6 | 1.3 |
| Trade tech/super: post initial | 0.2 | 0.3 | 0.3 |
| Para-prof tech: post initial | 0.0 | 0.0 | 0.1 |
| Para-prof high tech: post initial | 0.1 | 0.0 | 0.0 |
| Total | 100.0 | 100.0 | 100.0 |

Source: *Selected TAFE Statistics*, 1990 and NCVER data, AVETMISS collection 1995 & 1996.

The field-of-study chosen by the 15-19 year old cohort in 1996 varied markedly across genders (see Table 5). 'Engineering, surveying' was the most popular field-of-study for males between 16 and 19 years old, while 'Business administration, economics' and 'Services, hospitality, transportation' were popular fields-of- study for females, with 'Business administration, economics' being the most popular for females over 17. 'TAFE multi-field education' was a popular choice of field-of-study for both males and females of all ages across the age cohort.

'Education; Law, legal studies'; and 'Veterinary science, animal care' were not popular fields-of-study for either males or females in the 15 to 19 year age cohort.

**Table 5: Field-of-study by age and gender, 1996**

| Age | Sex | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | F | 3.9 | 1.0 | 10.0 | 24.1 | 0.3 | 2.3 | 7.6 | 0.0 | 2.3 | 0.3 | 25.8 | 22.5 |
| | M | 8.4 | 7.2 | 4.6 | 9.6 | 0.4 | 25.9 | 2.3 | 0.0 | 2.4 | 0.2 | 11.7 | 27.4 |
| | All | 6.4 | 4.4 | 7.0 | 16.3 | 0.3 | 15.2 | 4.7 | 0.0 | 2.3 | 0.2 | 18.2 | 25.2 |
| 16 | F | 3.4 | 0.5 | 8.4 | 27.1 | 0.2 | 2.4 | 10.2 | 0.0 | 2.3 | 0.6 | 27.3 | 17.7 |
| | M | 8.5 | 11.3 | 4.0 | 9.4 | 0.3 | 30.8 | 1.9 | 0.0 | 2.2 | 0.1 | 11.3 | 20.3 |
| | All | 6.2 | 6.6 | 5.9 | 17.2 | 0.3 | 18.3 | 5.5 | 0.0 | 2.2 | 0.3 | 18.4 | 19.1 |
| 17 | F | 2.8 | 0.7 | 6.7 | 27.1 | 0.3 | 2.1 | 11.4 | 0.3 | 3.0 | 0.5 | 25.6 | 19.5 |
| | M | 7.1 | 12.8 | 3.4 | 8.5 | 0.3 | 31.7 | 2.3 | 0.2 | 3.0 | 0.0 | 11.6 | 19.0 |
| | All | 5.3 | 7.7 | 4.8 | 16.4 | 0.3 | 19.1 | 6.1 | 0.3 | 3.0 | 0.2 | 17.6 | 19.1 |
| 18 | F | 2.5 | 1.0 | 6.7 | 30.3 | 0.3 | 2.2 | 12.8 | 0.9 | 3.1 | 0.5 | 22.7 | 16.9 |
| | M | 5.7 | 13.7 | 3.3 | 12.2 | 0.3 | 31.4 | 2.6 | 0.4 | 3.6 | 0.1 | 11.3 | 15.3 |
| | All | 4.3 | 8.2 | 4.7 | 20.2 | 0.3 | 18.8 | 6.9 | 0.6 | 3.4 | 0.3 | 16.4 | 15.9 |
| 19 | F | 2.7 | 1.3 | 8.2 | 31.4 | 0.6 | 2.4 | 13.4 | 0.8 | 3.2 | 0.5 | 19.9 | 15.4 |
| | M | 5.3 | 14.5 | 3.5 | 13.1 | 0.3 | 33.6 | 2.7 | 0.5 | 3.3 | 0.0 | 10.1 | 13.1 |
| | All | 4.2 | 9.1 | 5.4 | 20.6 | 0.4 | 20.9 | 7.0 | 0.6 | 3.3 | 0.2 | 14.2 | 13.9 |
| **15-19** | | **5.0** | **7.8** | **5.2** | **18.7** | **0.3** | **19.1** | **6.4** | **0.4** | **3.0** | **0.3** | **16.5** | **17.2** |

Field-of-study codes and descriptions: 01 *Land & marine resources, animal husbandry*; 02 *Architecture, Building*; 03 *Art, humanities & social sciences*; 04 *Business administration, economics*; 05 *Education*; 06 *Engineering, surveying*; 07 *Health, community services*; 08 *Law, legal studies*; 09 *Science*; 10 *Veterinary science, animal care*; 11 *Services, hospitality, transportation*; 12 *TAFE Multi-field education.*

Source: NCVER data, AVETMISS collection 1996

## Outcomes of 15-19 year olds

Module load pass rates and module load completion rates are measures that provide an indication of the likelihood of a student (or group of students) successfully completing a year of study. National module load pass and completion rates for vocational education courses in 1996, by age, are provided in Table 6. The module load pass and completion rates suggest that there was less likelihood of a 15 or 16 year old successfully passing or completing a module load in vocational education in 1996 than an older person. There was no discernible difference in either module load pass rates or module load completion rates in 1996 for 17 to 19 year olds compared with vocational students aged 20 years and over .

**Table 6: Module outcomes for vocational programs by age, 1996**

| 1996 | Module Load Pass Rate | Module Load Completion Rate |
|---|---|---|
| Age 15 | 78.9 | 73.6 |
| Age 16 | 81.3 | 76.0 |
| Age 17 | 82.8 | 77.6 |

| | | |
|---|---|---|
| Age 18 | 82.7 | 77.0 |
| Age 19 | 82.7 | 77.9 |
| Age 15 - 19 | 82.4 | 77.2 |
| Age 20 and over | 82.9 | 78.1 |
| Total | 82.7 | 77.7 |

Source: Derived from NCVER data, AVETMISS collection 1996

The results of the first national TAFE Graduate Destination Survey[4], conducted during 1995 by the ABS, provides information on qualification and employment outcomes of vocational graduates.

Of the 15-19 year graduates surveyed (on 31 May 1995), 46 per cent had completed a non-trade Certificate, 31 percent had completed a trade Certificate, 16 per cent had completed a non-trade Advanced Certificate while 4 per cent, 3 per cent and 1 per cent had completed an Associate Diploma, post-trade Advanced Certificate and Diploma, respectively. Older graduates, as a group, undertook proportionately fewer trade Certificates (19 percent) and more Associate Diplomas (21 percent).

The results of the TAFE Graduate Destination Survey suggest that vocational education is providing a successful pathway to employment for 15-19 year olds. By 31 May 1995, almost three-quarters (74 percent) of the 15-19 year old graduates who completed their course in 1994 were employed, with half of the graduates employed full-time. A further 16 per cent were looking for work and 10 per cent were not in the labour force. Of those employed full-time, 78 per cent were employed in their first job.

About half of all 15-19 year old employed graduates already had a job at the time of finishing their course and 19 per cent of employed graduates took less than a month to find a job after completing their course. A further 17 per cent took between one and three months to find a job, while another 11 per cent took over 3 months to secure employment.

## Apprentices and Trainees

A training agreement or contract-of-training is a formal contract between an employer and a trainee whereby the employer agrees to teach the trainee a range of skills and in return the trainee agrees to work for a set length of time at a training wage. Prior to the introduction of the New Apprenticeship scheme agreed to by Ministers in 1996, apprentices typically studied AQF level 3 and level 4 courses of three to four years duration while trainees took part in AQF level 1 and 2 courses that run for a year to 18 months.

[4] Australian Bureau of Statistics , Graduate Outcomes Technical and Further Education (TAFE) Australia, AGPS, Canberra, 1995

### Participation of 15-19 year olds

As at 30 June 1990 there were 171,990[5] apprentices and trainees in training nationally. The number of apprentices and trainees fell to 135,782 by 30 June 1995, but then rose to 158,048 at 30 June 1996. [6]

### Table 7: Apprentice and Trainee commencements, by age

| Commencements | 1989-90 | 1995 | 1996 |
|---|---|---|---|
| Apprentices | | | |
| 15 - 19 years | 49508* | 29651 | 27916 |
| 20 years and over | 6752* | 10507 | 9921 |
| All ages | 56260 | 40158 | 37837 |
| Trainees | | | |
| 15 - 19 years | 13247 | 11369 | 19253 |
| 20 years and over | 0 | 10569 | 28157 |
| All ages | 13247 | 21938 | 47410 |
| Total | 69507 | 63501 | 86530 |

* derived figure

Source: "Australian Traineeship System: Trainee Commencements" 1985-86 to 1992-93, DEET publication (22 December 1993); Apprenticeship Statistics 1984-85 to 1993-94, NCVER, 1995; NCVER COT data collection, June 1997.

Details about the number of apprentice and trainee commencements between 1990 and 1996 are provided in Table 7. Of the apprentices that commenced training during 1989-90, 88 per cent of those that disclosed their age were in the 15-19 age cohort . All trainees in 1990 were aged between 15 and 19 because traineeships were only available to this age group until 1992. By 1995, only two-thirds of the registered commencements of apprentices and trainees were aged 15 to 19. In 1996, the proportion of 15-19 year olds had declined further to account for 55 per cent of registered commencements of apprentices and trainees.

Males accounted for 81 per cent of apprentice commencements in the age cohort in 1990. The proportion of females commencing a training agreement had risen to a quarter of all commencements by 1995 and by 1996 females accounted for 30 per cent of all training agreement commencements in the 15 to 19 year age group. Across all age groups, 32 per cent of all training agreement commencements in 1996 were female.

During the period 1990 to 1996 the population of the 15-19 age cohort declined by about 9 per cent whereas the number of 15-19 year olds

[5] Derived from commencement data in the DEET publication "Australian Traineeship System: Trainee Commencements" 1985-86 to 1992-93 (22 December 1993).

[6] The post 1994 data on registered apprentices and trainees used in this study has been obtained from the Contracts-Of-Training (COT) data collection managed by the NCVER.

commencing a contract of training declined by roughly 24 per cent over the entire period.[7] Nonetheless, the attraction of a vocational education to young people has not diminished over the period because the percentage of the 15-19 year age cohort undertaking vocational education and training has remained relatively unchanged since 1990. Rather, a number of 15-19 year olds are opting for alternative vocational pathways to a traditional apprenticeship. This proposition is borne out by recent changes that have occurred in the relative proportion of apprentices and trainees. Between 1995 and 1996 there was a 14 per cent increase in the number of 15-19 year olds undertaking an indenture — however, the number undertaking an apprenticeship declined by 6 per cent over the year (and a decline occurred across all ages in the 15-19 year age cohort).

The relative representation of 15-19 year olds in total indenture commencements has dropped since 1990. In part this is not unexpected given the relative decline of 15-19 year olds as a proportion of the working age population over the period 1990 to 1996. In 1990, 15-19 year olds accounted for over 12 per cent of the 15-64 age population but by 1996 (and 1995) this age cohort only accounted for 10.5 per cent of the working age population. In addition traineeships were only available to the 15 to 19 year age group in 1990. Also 15 to 19 year olds are now tending to complete a higher school level prior to commencing vocational education studies than the school level completed in 1990.

The distribution of the highest school level completed by apprentices and trainees commencing an indenture in 1996 are presented in Tables 8 and 9, respectively. Year 12 had been completed by over 56 per cent of all apprentices and trainees aged 18 at commencement and by about 65 per cent of 19 year olds. This compares with about 47 per cent of commencing trainees and 53 per cent of commencing apprentices aged 20 and over having completed Year 12.

**Table 8: Apprenticeship commencements, by highest school level completed, by age, 1996**

| Highest school level | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 |
|---|---|---|---|---|---|---|
| Age 15 | 0.0 | 4.4 | 38.6 | 55.3 | 1.5 | 0.2 |
| Age 16 | 0.0 | 0.7 | 10.8 | 78.7 | 9.0 | 0.7 |
| Age 17 | 0.0 | 0.5 | 4.4 | 48.2 | 33.1 | 13.9 |
| Age 18 | 0.0 | 0.2 | 2.1 | 19.6 | 22.0 | 56.1 |
| Age 19 | 0.0 | 0.1 | 2.1 | 15.4 | 16.2 | 66.2 |

[7] Pre-1994 indenture data is not strictly comparable with the post-1994 COT collection data. In addition, because a substantial number of apprentices did not disclose their age the rate of decline in 15-19 year old apprentices is a derived estimate.

| | | | | | | |
|---|---|---|---|---|---|---|
| Ages 15-19 | 0.0 | 0.5 | 5.3 | 37.5 | 20.9 | 35.8 |
| All Ages | 0.0 | 0.5 | 4.9 | 34.6 | 19.8 | 40.2 |
| 20 and over | 0.0 | 0.6 | 3.8 | 26.3 | 16.7 | 52.6 |

Source: NCVER data, Contracts Of Training (COT)

**Table 9: Trainee commencements, by highest school level completed, by age, 1996**

| Highest school level | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 |
|---|---|---|---|---|---|---|
| Age 15 | 0.4 | 8.3 | 39.1 | 51.8 | 0.4 | 0.0 |
| Age 16 | 0.1 | 2.3 | 17.0 | 73.3 | 6.6 | 0.7 |
| Age 17 | 0.1 | 1.0 | 7.7 | 50.1 | 20.7 | 20.5 |
| Age 18 | 0.0 | 0.4 | 3.6 | 23.0 | 14.4 | 58.5 |
| Age 19 | 0.0 | 0.4 | 3.1 | 18.1 | 14.0 | 64.5 |
| Ages 15-19 | 0.1 | 0.8 | 6.0 | 32.0 | 14.6 | 46.5 |
| All Ages | 0.2 | 1.5 | 6.3 | 30.5 | 14.6 | 46.9 |
| 20 and over | 0.3 | 2.0 | 6.5 | 29.4 | 14.6 | 47.2 |

Source: NCVER data, Contracts Of Training (COT)

## Apprentices and Trainees and the Labour Market

There have been substantial changes in the occupational choice of indentured 15-19 year olds since 1990 which has occurred largely because of shifts in occupational demand in the labour market. Although there was a decline in the ratio of apprentices in training to tradespersons in the 1980s up to about 1986[8], the decline had been arrested by the late 1980s[9]. Between 1986 and 1994 a constant relationship between the number of apprentices in training and the number of tradespersons employed across all trades was observed even though there was a relative decline in demand for trade skills over the period (Dandie, 1996). For every ten tradespersons there was just over one apprentice in training and apprenticeship numbers in service industries grew while apprenticeships contracted in manufacturing industries from 1986 to 1994 (Stromback, 1996).

The distributions of contracts-of-training commencements by ASCO occupational grouping for 1989-90, 1995 and 1996 for the 15-19 year age cohort are shown in Table 10. In 1990 the 'building' and 'vehicle' trade groups accounted for 20 per cent and 15 per cent of apprenticeship commencements respectively. The 'building' trade declined to 14 per cent of all

[8] R. Sweet, 1996

[9] S. Dandie, 1996

commencements in 1995, and further declined to 10 per cent of commencements in 1996.

**Table 10: Contracts of training commencements by 15-19 year olds by ASCO groups (Per cent).**

| | 1990 | 1995 | 1996 |
|---|---|---|---|
| Managers and Administrators | 0.0 | 0.8 | 1.2 |
| Professionals | 0.0 | 0.0 | 0.2 |
| Para-Professionals | 0.0 | 1.0 | 1.4 |
| MetalFitt/Mach | 8.1 | 5.7 | 5.5 |
| Other/Metal | 9.6 | 6.1 | 4.8 |
| Electrical | 12.9 | 8.8 | 6.9 |
| Building | 20.4 | 14.0 | 10.4 |
| Printing | 3.2 | 1.5 | 0.9 |
| Vehicle | 14.9 | 12.9 | 10.6 |
| Food | 10.4 | 10.3 | 9.1 |
| Horticulture | 3.4 | 1.8 | 1.4 |
| Miscellaneous | 17.0 | 10.6 | 8.6 |
| *Hairdressing* | *7.5* | *6.0* | *5.2* |
| *Other* | *9.4* | *4.5* | *3.5* |
| Clerks | 0.0 | 11.1 | 13.8 |
| Salespersons & Personal Service Workers | 0.0 | 11.0 | 17.1 |
| Plant/Machine Operators & Drivers | 0.0 | 0.7 | 0.9 |
| Labourers and Related Workers | 0.0 | 3.8 | 7.2 |
| Total | 100.0 | 100.0 | 100.0 |

1990 data is for apprentices only

Source: NCVER Data, COT collection

The 'vehicle' trade group dropped to 13 per cent of all commencements in 1995, and further declined to 10 per cent of commencements in 1996.

The development of traineeships has expanded the occupations available through contracts of training. By 1995, 11 per cent of 15-19 year olds commencing a contract were in the 'clerks' and 'salespersons and personal service workers' occupational groups. These occupational groups expanded further to account for 14 per cent and 17 per cent of commencements in the 15-19 year age cohort in 1996.

There is a difference in occupations apprentices are being trained in across ages in the 15-19 year age cohort. The distributions of apprenticeship and

traineeship commencements of 15 to 19 year olds in 1996 across ASCO groups are shown in Tables 11 and 12.

Over half of 15 year old apprentices are training in the 'hairdressing' and 'miscellaneous' occupational groups. The 'vehicle', 'building', 'miscellaneous' and 'food' trades are the dominant occupations training 16 to 19 year old apprentices.

**Table 11: Apprenticeship commencements by age by ASCO group, 1996 (Per cent)**

| | Age 15 | Age 16-17 | Age 18-19 |
|---|---|---|---|
| Managers and Administrators | 0.5 | 0.3 | 0.4 |
| Professionals | 0.0 | 0.0 | 0.0 |
| Para-Professionals | 1.1 | 0.4 | 0.5 |
| MetalFitt/Mach | 4.7 | 9.2 | 9.4 |
| Other/Metal | 7.6 | 8.8 | 7.7 |
| Electrical | 4.7 | 9.4 | 14.3 |
| Building | 19.1 | 17.8 | 17.7 |
| Printing | 0.4 | 1.0 | 2.1 |
| Vehicle | 15.6 | 19.7 | 17.2 |
| Food | 17.4 | 14.8 | 14.9 |
| Horticulture | 0.4 | 1.7 | 2.6 |
| Miscellaneous | 28.6 | 16.5 | 12.7 |
| Hairdressing | 21.0 | 10.2 | 7.2 |
| Other | 7.6 | 6.3 | 5.5 |
| Clerks | 0.0 | 0.0 | 0.0 |
| Salespersons & PersonalService Workers | 0.1 | 0.4 | 0.5 |
| Plant/Machine Operators & Drivers | 0.0 | 0.0 | 0.0 |
| Labourers and Related Workers | 0.0 | 0.0 | 0.0 |
| Total | 100.0 | 100.0 | 100.0 |

Source: NCVER data, COT collection

**Table 12: Traineeship commencements by age by ASCO group, 1996 (Per cent)**

| | Age 15 | Age16-17 | Age 18-19 |
|---|---|---|---|
| Managers and Administrators | 0.0 | 0.7 | 0.6 |
| Professionals | 0.6 | 0.4 | 0.4 |
| Para-Professionals | 0.9 | 2.6 | 3.0 |

| | | | |
|---|---|---|---|
| Clerks | 24.0 | 30.6 | 36.3 |
| Salespersons & Personal Service Workers | 43.8 | 42.4 | 41.4 |
| Plant/Machine Operators & Drivers | 1.9 | 2.2 | 2.1 |
| Labourers and Related Workers | 28.7 | 21.0 | 16.2 |
| Other | 0.0 | 0.1 | 0.0 |
| Total | 100.0 | 100.0 | 100.0 |

Source: NCVER data, COT collection

## Table 13: Apprenticeship commencements by age by ANZSIC industry group, 1996 (Per cent)

| | Age 15 | Age 16-17 | Age 18-19 |
|---|---|---|---|
| Personal & Other Services | 26.3 | 11.0 | 8.2 |
| Cultural & Recreational Services | 0.3 | 0.6 | 0.7 |
| Health & Community Services | 0.6 | 0.5 | 0.5 |
| Education | 0.0 | 0.1 | 0.3 |
| Govt. Administration & Defence | 0.3 | 1.0 | 1.4 |
| Property & Business Services | 6.6 | 15.6 | 16.0 |
| Finance & Insurance | 0.0 | 0.0 | 0.0 |
| Communication Services | 0.0 | 0.0 | 0.1 |
| Transport & Storage | 0.3 | 1.6 | 1.8 |
| Accommodation, Cafes & Restaurants | 4.4 | 4.4 | 5.5 |
| Retail Trade | 26.6 | 20.4 | 18.1 |
| Wholesale Trade | 2.5 | 0.6 | 1.0 |
| Construction | 14.7 | 13.4 | 14.1 |
| Electricity, Gas and Water Supply | 0.6 | 0.9 | 1.4 |
| Manufacturing | 15.6 | 25.9 | 26.7 |
| Mining | 0.6 | 2.9 | 2.3 |
| Agriculture, Forestry & Fishing | 0.6 | 1.0 | 1.8 |
| Total | 100.0 | 100.0 | 100.0 |

Source: NCVER data, COT collection

## Table 14: Traineeship commencements by age by ANZSIC industry group, 1996 (Per cent)

| | Age 15 | Age 16-17 | Age 18-19 |
|---|---|---|---|
| Personal & Other Services | 1.4 | 3.1 | 3.1 |

| | | | |
|---|---|---|---|
| Cultural & Recreational Services | 5.4 | 2.4 | 2.7 |
| Health & Community Services | 12.2 | 3.1 | 3.7 |
| Education | 0.0 | 1.3 | 2.1 |
| Govt. Administration & Defence | 2.7 | 13.4 | 23.4 |
| Property & Business Services | 14.9 | 19.0 | 13.1 |
| Finance & Insurance | 0.0 | 1.7 | 1.7 |
| Communication Services | 0.0 | 0.4 | 0.3 |
| Transport & Storage | 1.4 | 1.7 | 2.3 |
| Accommodation, Cafes & Restaurants | 1.4 | 2.4 | 2.7 |
| Retail Trade | 29.7 | 22.6 | 16.5 |
| Wholesale Trade | 4.1 | 3.7 | 3.1 |
| Construction | 1.4 | 4.1 | 4.4 |
| Electricity, Gas and Water Supply | 0.0 | 0.3 | 0.3 |
| Manufacturing | 13.5 | 14.7 | 17.6 |
| Mining | 0.0 | 0.6 | 0.7 |
| Agriculture, Forestry & Fishing | 12.2 | 5.6 | 2.4 |
| Total | 100.0 | 100.0 | 100.0 |

Source: NCVER data, COT collection

Trainees were training predominantly in the 'salespersons and personal service workers', 'clerks' and 'labourers and related workers' occupational groups across all ages in the 15 to 19 age cohort in 1996.

The industry groupings of apprentice and trainee commencements aged 15 to 19 in 1996 are shown in Tables 13 and 14[10]. This data is indicative only as not all States report ANZSIC industry codes for registered apprentices and trainees.

Apprentices of all ages in the 15-19 year cohort in 1996 were represented predominantly in the 'manufacturing', 'construction', 'retail trade' (particularly 15 year olds) and 'property and business service' industry groupings.

Trainees were training predominantly in the 'retail trade' (particularly 15 year olds), 'government, administration and defence' and 'property and business services' sectors in 1996.

### Forecast sectoral employment growth

In order to assess if apprentices and trainees are training in areas of likely employment growth in the economy it is useful to consider the relative share

[10] Comparable 1990 data is not available.

of employment across ANZSIC industry groups experienced during 1996 and the forecast changes to the employment distribution to 2000-01.

The 1995-96 relative share of employment across ANZSIC industry groups, the forecast employment share across ANZSIC industry groups in 2000-01, and the 1995 and 1996 distribution of reported apprentices and trainees commencements by ANZSIC industry groups for age cohorts 15-19 years and 20 years and over are shown in Table 15.

Forecasts of employment shares of ANZSIC industry groups to 2000-01 were obtained using the Murphy MM2 econometric model software and August 1997 forecasting assumptions. The Murphy MM2 model is an econometric model of the Australian economy integrated with the 18 ANZSIC industry divisions.

The forecasts suggest that employment in the 'manufacturing', 'retail trade', 'health and community services', and 'government administration and defence' sectors will decline relative to other industry sectors. Industry sectors that are forecast to increase their employment share relative to other sectors include 'property and business services', 'construction', 'accommodation, cafes and restaurants', and 'finance and insurance'.

A high proportion of apprentices and trainees in the 15 to 19 year age cohort (indicative figures suggest over 40 per cent) are training in the 'manufacturing' and 'retail trade' sectors. Employment share forecasts suggest that both these sectors are likely to experience relative decline in their share of employment to 2000-01. Sectors forecast to expand that currently have an under-representation of apprentices and trainees in the 15 to 19 year age cohort include 'wholesale trade', 'accommodation, cafes and restaurants' and 'finance and insurance'. The introduction of New Apprenticeships and User Choice in 1998 should facilitate the expansion of apprentice training into new industries. The Federal Minister for Schools, Vocational Education and Training recently unveiled new traineeships in communications and information technology; multimedia, graphic design, TV production and the music industry; environment and forestry work; property management and sales; tourism and hospitality; sport and recreation in addition to traineeships in more traditional industries[11].

**Table 15: Contracts of training commencements, employment shares and employment forecasts by ANZSIC industry groups*.**

| ANZSIC Industry Group | Employ-ment share | Employ-ment share forecast* | Ages 15-19 | Ages 20 and over | Ages 15-19 | Ages 20 and over |
|---|---|---|---|---|---|---|
| | 1995/96 | 2000/01 | 1995 | | 1996 | |

[11] Media release, Federal Minister for Schools, Vocational Education and Training, 20 August 1997.

| | | | | | | |
|---|---|---|---|---|---|---|
| Agriculture, Forestry & Fishing | 5.1 | 5.4 | 2.2 | 3.6 | 2.2 | 4.7 |
| Mining | 1.0 | 1.1 | 1.7 | 1.5 | 1.7 | 1.3 |
| Manufacturing | 13.3 | 11.8 | 22.3 | 20.8 | 22.1 | 22.6 |
| Electricity, Gas and Water Supply | 1.0 | 0.7 | 1.2 | 0.9 | 0.8 | 0.7 |
| Construction | 7.2 | 7.8 | 11.7 | 12.1 | 10.0 | 8.6 |
| Wholesale Trade | 6.0 | 6.4 | 1.4 | 1.0 | 1.9 | 1.3 |
| Retail Trade | 14.7 | 14.4 | 20.4 | 13.3 | 19.2 | 12.0 |
| Accommodation, Cafes & Restaurants | 4.6 | 5.4 | 4.0 | 4.0 | 4.0 | 3.5 |
| Transport & Storage | 4.7 | 4.7 | 2.2 | 1.8 | 1.9 | 1.1 |
| Communication services | 1.9 | 1.8 | 0.2 | 0.2 | 0.2 | 0.4 |
| Finance & Insurance | 3.8 | 4.0 | 0.9 | 0.4 | 0.7 | 0.4 |
| Property & Business services | 9.5 | 10.5 | 14.3 | 11.2 | 15.1 | 12.3 |
| Govt. Administration & Defence | 5.2 | 4.8 | 5.8 | 9.6 | 8.7 | 10.4 |
| Education | 7.0 | 6.4 | 0.7 | 1.9 | 0.8 | 1.8 |
| Health & Community Services | 9.1 | 8.7 | 1.7 | 2.8 | 1.8 | 5.9 |
| Cultural & Recreational Services | 2.2 | 2.1 | 0.8 | 0.6 | 1.4 | 2.7 |
| Personal & Other Services | 3.8 | 3.9 | 8.3 | 14.5 | 7.5 | 10.3 |

* As not all states report ANZSIC industry codes for registered apprentices and trainees this data should be treated as indicative only. ** Employment share forecasts obtained using Murphy MM2 model software.

Source: ABS Cat No. 1350.0, NCVER data, COT collection.

# Factors affecting uptake of apprenticeships and traineeships

### Returns to the individual from apprentice training

Perceived lifetime earnings of an occupation are an important factor affecting career choice. Dockery and Norris using 1991 census data investigate the lifetime returns to individuals from undertaking an apprenticeship based on earnings foregone during the term of the apprenticeship and the stream of lifetime earnings of tradespersons. The findings indicate quite high rates of

return for most of the male dominated trades but low or negative returns for some female dominated occupations, such as hairdressing. Recent UK research using General Household Survey data supports the findings of positive rates of return to males from vocational education. For men with no qualifications other than vocational qualifications, positive rates of return for all vocational qualifications were estimated in the UK study (Steadman and Green, 1996). While perceived lifetime earnings are an important factor influencing career and educational choices other factors also influence educational choices for the 15 to 19 year age group.

One hypothesis as to why people undertake education and training is the so called 'screening hypothesis' (Norris, 1996) which suggests that people undertake education and training to signal their abilities to potential employers. A number of UK studies have demonstrated that a vocational qualification at any level offers an individual a better probability of finding employment compared to an individual with no qualifications. UK labour force survey data, for example, indicated an unemployment rate of 30 per cent for young people under 26 having no qualifications[12]. Overseas research points to positive returns to vocational education at entry level and in the initial years of work. Research found that holders of vocational qualifications received a wage premium in their early years in the job market over those with no qualifications[13].

The relatively high proportion of course enrolments of 15-19 year olds that lead to a qualification further supports the 'screening hypothesis' as a motivation for young people undertaking vocational education. Around 70 per cent of all course enrolments of 15-19 year olds in 1996 were in courses leading to a qualification with a further 15 per cent leading to a statement of attainment or certificate of competency or proficiency. This compares with only a little over half of all course enrolments in the VET student population as a whole leading to a qualification with a further 16.5 per cent leading to a statement of attainment or certificate of competency or proficiency.

### Apprenticeship training and firm size

At the firm level, the current or expected level of output has been found to be the major factor influencing recruitment decisions including recruitment of apprentices. Other relevant factors include the state of the labour market for tradespersons, the capacity of the firm to adequately supervise apprentices and the degree of specific as opposed to general skills required by the firm. Because award conditions stipulate a maximum number of apprentices to tradespersons, training costs may be lower for large firms (Dockery, 1996).

Group training schemes by pooling both apprentices and employers have assisted small firms overcome some of these problems. Group training schemes manage and monitor the employment of apprentices and trainees by

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[12] Steadman and Green, 1996 page 11

[13] *Ibid*, page 11

small employers and other employers who are unable to provide the full range of experiences required in training by rotating apprentices and trainees among host employers. A survey conducted by Group Training Australia in 1996 (Dench McClean Associates) found that 53 per cent of host employers of group scheme apprentices had less than five employees, and that 89 per cent of host employers had less than 50 employees. The survey estimated that almost 14 per cent of apprentices and about 12 per cent of trainees were in group training schemes in 1996.

Group training arrangements cannot, however, overcome all differences between large and small firms. Large firms may be able to organise work so that there is a clear delineation between skilled and unskilled jobs, whereas small firms may use apprentices to work alongside tradespersons undertaking the largely unskilled requirements of the job. Evidence from Germany suggests that small firms do not train apprentices as an investment but use them as a source of cheap labour (Steedman and Green, 1996).

In addition, the expenditure per employee, the training hours provided per employee and the proportion of employers providing training *per se* on average is less for firms with few employees. Large companies and public sector agencies (with at least 100 employees) spend almost four times as much on structured training as small enterprises with less than 20 employees. Firms with between 1 and 4 employees on average provided 1.7 hours of training per employee in the September quarter of 1996, compared to firms with 100 or more employees who provided an average of 6.5 hours of training per employee (see Table 16).

## Importance of entry level training

Entry level training continues to be a critical source of skill acquisition to equip workers for their working life. The notion of continual skills upgrading of employees has not, as yet, become ingrained across industry sectors. The results of the ABS employer training expenditure survey conducted over the September quarter 1996 reveal that, with the exception of the 'government administration and defence' industry sector, less than half of all employers provided any training to their employees during the quarter (refer to Table 17). Less than 10 per cent of employers in the 'accommodation, cafes and restaurants' and 'cultural and recreational services' sectors undertook training during the quarter.

**Table 16: Training provided by employers by firm size, September quarter 1996**

| Number of employees | Expenditure per employee | Training per employee | Employers providing training |
|---|---|---|---|
| | $** | hours | % |
| 1 to 4 | 50.62* | 1.70 | 6.23 |
| 5 to 9 | 89.72 | 2.73 | 22.43 |

| | | | |
|---|---|---|---|
| 10 to 19 | 71.44 | 2.76 | 32.30 |
| 20 to 99 | 135.80 | 3.79 | 50.51 |
| 100 or more | 255.64 | 6.45 | 88.34 |

* The estimate has a relative standard error of between 25% and 40% and should be used with caution

** Includes the wages and salaries of employees during training

Source: Employer Training Expenditure Australia, July to September 1996, ABS Cat. No. 6353.0

The 'mining' sector provided employees with an average of 17 hours of training per employee during the quarter, compared with two hours of training per employee provided by employers in the 'accommodation, cafes and restaurants' sector (see Table 18). Employers with a permanent work force spent more on average on training during the period as did employers with a predominantly male work force. This suggests that casual workers and females are less likely to receive employer funded training than permanent workers and males.

## Conclusions

The major conclusions that can be drawn from this analysis of young peoples' participation in and outcomes from vocational education are as follows:

- Participation rates by 15-19 year olds in vocational education and training have remained unchanged over the 1990s but the training agreement arrangements and courses being undertaken by the group have changed.

- There has been a shift away from apprentices training in the vehicle and building occupational groups since 1990, consistent with the decline in demand for these skills in the labour market. The expansion of traineeships since 1990 has expanded entry level training notably in the 'clerks' and 'salespersons and personal service workers' occupational groups.
- A large proportion of apprentices and trainees in the 15-19 year age group are training in industries that are forecast to decline relative to other industry sectors to 2000-01.
- Research suggests that there are substantial advantages to individuals who undertake vocational education, particularly in the initial years of employment.
- Entry level training continues to be important because the notion of continual skills upgrading of employees has not as yet become ingrained across industries.

## Table 17: Employers providing training: per cent of industry group

| | |
|---|---|
| Cultural & Recreational Services | 10.0 |
| Accommodation, Cafes & Restaurants | 10.2 |
| Construction | 11.6 |
| Communication Services | 13.8 |
| Retail Trade | 14.2 |
| Transport & Storage | 16.0 |
| Property & Business Services | 18.5 |
| Health & Community Services | 19.8 |
| Wholesale Trade | 20.6 |
| Personal & Other Services | 21.3 |
| Manufacturing | 21.5 |
| Mining | 26.0 |
| Finance & Insurance | 26.1 |
| Education | 32.1 |
| Electricity, Gas and Water Supply | 47.8 |
| Govt. Administration & Defence | 81.0 |

Source: Employer Training Expenditure Australia, July to September 1996, ABS Cat. No. 6353.0

## Table 18: Training hours per employee

| | |
|---|---|
| Accommodation, Cafes & Restaurants | 2.4 |
| Cultural & Recreational Services | 2.8 |
| Retail Trade | 3.4 |
| Wholesale Trade | 3.5 |
| Health & Community Services | 4.1 |
| Property & Business Services | 4.1 |
| Construction | 4.2 |
| Manufacturing | 5.4 |
| Education | 5.9 |
| Govt. Administration & Defence | 6.0 |
| Finance & Insurance | 6.2 |
| *Transport & Storage | 6.1 |
| *Communication Services | 6.3 |
| Personal & Other Services | 9.7 |
| *Electricity, Gas and Water Supply | 10.4 |
| Mining | 17.1 |

Source: Employer Training Expenditure Australia, July to September 1996, ABS Cat. No. 6353.0

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