

## Post-compulsory VET sector participation: Who benefits?

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Using data from the Longitudinal Surveys of Australian Youth (LSAY) the labour market status, hours worked and income earned by young people (to age 24) who had participated in VET sector programs have been examined. VET programs considered are apprenticeships, traineeships and non-apprenticeship VET sector (TAFE) courses. VET sector participants are compared with school leavers who enter the workforce without undertaking any form of post-school education or training. The outcomes for young people who either completed or did not complete their VET programs are compared. Young men benefit most from apprenticeship programs and young women from traineeships. Young men benefit substantially more from apprenticeship programs than do any other combinations of gender and course type. There is a net benefit to program completion, but it is not uniformly distributed. Possible implications for career advisors and for policy makers are discussed.

The vocational education and training (VET) system has increasingly become an important pathway in the transition from compulsory schooling to work. Demand from 15 to 19 year-olds for VET offerings grew by 50 per cent between 1991 and 2000 (NCVER, 2002). In 2001, almost 20 per cent of the Longitudinal Surveys of Australian Youth (LSAY) sample who had been in Year 9 in 1995 (the Y95 LSAY cohort) had commenced a non-apprenticeship TAFE course, and of this group, about 83 per cent had completed Year 12 (McMillan *et al.*, 2005, p. 12). Of the same cohort, almost 21 per cent had commenced an Australian Apprenticeship, and of these, 60 per cent had completed Year 12 (Ainley & Corrigan, 2005, pp. 8, 10). The VET sector thus provides a significant pathway for both school completers and school non-completers. Of policy interest is the extent to which the VET sector equips young people with the skills that are required in the labour market and prepares them for lifelong education and training.

This study investigates the pathways young Australians take between the compulsory years of schooling and entry into the labour market that involve study in the Australian vocational education and training (VET) system. The three dominant pathways through the VET sector are apprenticeships, traineeships and non-apprenticeship VET courses.

This paper reports on aspects of a broader project (Curtis, forthcoming) that examined the characteristics of VET sector participants, their completion rates in those programs and the outcomes that followed their participation. It focuses upon selected outcomes that have followed participation in VET sector programs.

### Post-school Pathways

Having left school, young people may choose to enter the workforce directly, to enter into an Australian Apprenticeship (apprenticeship or traineeship), enrol in a non-apprenticeship VET (typically a TAFE) course, or go to university. Young people do not make simple choices among these alternatives – they may begin one program, either complete that or withdraw from it then undertake an alternative one. The complexity of post-school pathways undertaken by recent school-leavers is revealed in Lamb and McKenzie (2001) and Curtis (2006). The main post-school pathways are shown in Figure 1.

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In the multivariate analyses that follow, the outcomes for VET sector participants are compared with those of the no post-school study group. This group is of policy interest because, in a climate of skills shortages and knowing that people with low skill levels may be marginalised in the labour market (de Broucker, 2005), this group might be encouraged to engage with the VET sector in order to enhance their skills and their future labour market prospects. Not all young people who lack post-school qualifications fare poorly in the labour market. Marks (2005) has shown that young people who make successful initial forays into the labour market tend to continue to enjoy success. However, it is worth noting that the labour market has been buoyant and one can only speculate about the relative prospects of vocationally qualified and experienced employees compared with experienced ones in changed economic circumstances.

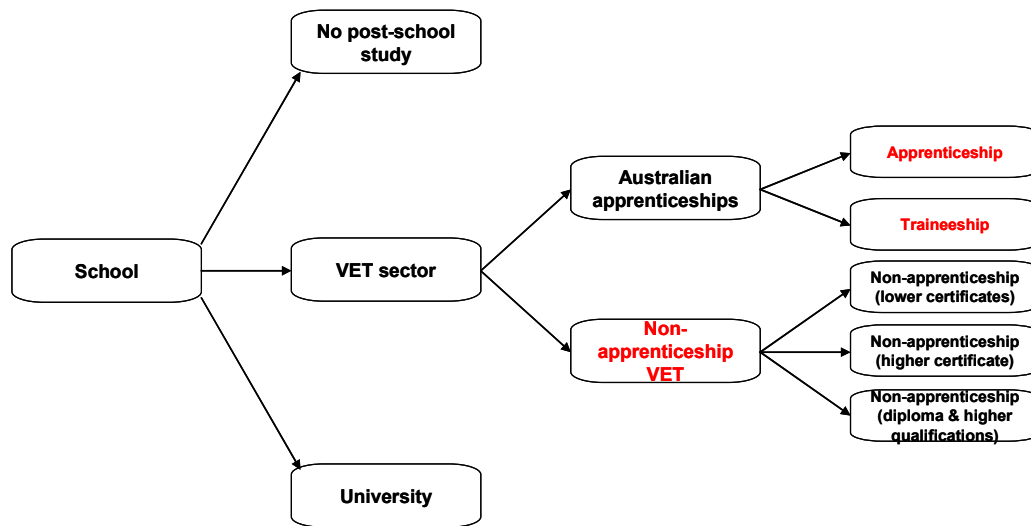


Figure 1: Main post-school pathways followed by young people

## Data and Methods

The data used in this study were collected from a representative sample of 13,630 young people who were in Year 9 in 1995 and referred to as the Y95 cohort. They were selected as one of the cohorts of the Longitudinal Surveys of Australian Youth (LSAY) program which is a joint research program conducted by the Department of Education Science and Training and the Australian Council for Educational Research. The sample was selected in two stages. Initially, approximately 300 schools were selected to be representative of the states and territories, of school sectors (government, Catholic and independent) and of locations (metropolitan, regional, and rural and remote). Within those schools, individual students were sampled. Young people completed a questionnaire and some achievement tests (in literacy and numeracy) in 1995. In 1996, they completed a mailed questionnaire and since that time they have been surveyed by telephone interviews. Those interviews have sought demographic data and information on their education, training and work activities and other dimensions of their lives.

Sample attrition was such that in 2001 there were 6,876 active participants and in 2004 when outcomes were examined, 4,660 individuals remained. Some sub-groups were over-sampled initially and sample weights are used to accommodate both the original sampling and subsequent attrition.

Some young people left school in 1996, although the modal school leaving year was 1998 when most of the cohort completed Year 12. About 70 per cent of those who left school before completing Year 12 and 90 per cent of school completers undertook some form of post-school education or training. Because of the various years in which young people left school and the possibility of them undertaking a range of activities between leaving school and commencing a VET sector program, course commencements to 2001 were included in the analyses. Further, in order to allow time for the completion of VET sector programs, outcomes experienced by 2004 were considered.

Using the demographic data provided by individuals and information on their education, training and work activities each year, variables were constructed to represent their commencement of VET sector

programs, their progress through those programs and the outcomes that they experienced subsequent to their participation.

Data were cross-tabulated to show relationships between demographics, participation, completion status and outcomes. In order to explore the effects of particular variables net of the influences of others, logistic regression methods have been employed.

### **Who Participates?**

Approximately 20 per cent of the cohort undertook no post-school study. Eleven per cent entered apprenticeships, 10 per cent traineeships, 24 per cent enrolled in TAFE (or equivalent) courses and 42 per cent university courses. Note that these figures total more than 100 per cent and this is a result of multiple course commencements. Up to four post-school programs for each individual were tracked through the survey of this cohort.

The odds of participation in various post-school pathways by background characteristics, relative to undertaking no post-school study, are shown in Table 1. Relative to undertaking no post-school study, the key observations are that males are much more likely than females to enter apprenticeships, but less likely to undertake other types of program. Apprenticeships and traineeships are important pathways for non-metropolitan youth, but metropolitan youth are more likely than others to enrol in TAFE and university courses. Having parents with university level education is advantageous in accessing all post-school education and training pathways. Traineeships are an important pathway for Indigenous young people, most likely because of the use of traineeships in conjunction with community development programs. Of particular interest is the influence of literacy and numeracy achievement on post-school program participation. Unsurprisingly, higher than average achievement in both literacy and numeracy is associated with university enrolment. The effect of achievement in these domains is not significant in either TAFE course or traineeship participation, but for apprentices a rather interesting pattern is apparent. Participation in apprenticeships is associated with lower than average literacy achievement but higher than average numeracy achievement.

As the focus of this paper is on outcomes following VET sector participation, those young people who had participated in higher education courses were excluded from further analyses.

### **Completion of VET Sector Programs**

The completion rates in the three types of VET sector program were 84 per cent for apprenticeships, 83 per cent for traineeships and 73 per cent for TAFE or similar courses. These rates are higher than those reported administrative data (Ball & John, 2005). They report completion rates of just over 70 per cent for 15 to 19 year-olds in the mid to late 1990s, although people who moved from one field of study to another were considered to be non-completers. In the current study, such individuals who completed their second program are classified as completers. Further, the LSAY interviews are conducted late in the year. If a young person began an apprenticeship early in the year, but discontinued it after a short time, they may neglect to report the commencement. There is some evidence to support this possibility. First, the NCVET data show that most withdrawals occur early in the program and common reasons given (in LSAY interviews) for non-completion are not liking the type of work and not getting on with the boss or co-workers.

There is some interest in comparing the outcomes of completers and non-completers of VET sector programs.

### **Outcomes**

The outcomes that were considered in the project were:

- labour market status in 2004 (full-time work, part-time work, full-time study, unemployed, not in the labour force (NILF));
- experience of unemployment over the 12 months to the 2004 interview;
- earnings and hours worked;
- participation in further education and training; and
- job satisfaction.

**Table 1 Odds ratios for participation in post-school education and training pathways compared with no participation**

	Type of post-school program			
	Apprenticeship	Traineeship	Non-apprentice VET course	University course
<b>Sex</b> (Ref: Female)				
Male	5.22**	0.57**	0.63**	0.57**
<b>Indigenous status</b> (Ref: Non-indigenous)				
Indigenous	2.04	2.65*	0.96	1.73
<b>Location</b> (Ref: Metropolitan)				
Regional	1.53**	1.21	0.71**	0.80
Rural	1.21	1.60**	0.91	0.94
<b>Birth country</b> (Ref: English-speaking)				
Non-English speaking	0.10**	0.51	1.02	2.29**
<b>Parent occupation</b> (Ref: Professional)				
Managerial	1.47	1.44	1.37	1.03
Clerical	1.16	1.29	1.35	0.95
Trades	1.27	0.95	0.98	0.61*
Labourer / Machine operator	0.81	1.17	1.15	0.64*
<b>Parent education</b> (Ref: University)				
Incomplete Year 12	0.59**	0.49**	0.48**	0.43**
Completed Year 12	0.68*	0.70	0.62*	0.55**
Technical qualification	0.93	0.68	0.70	0.58**
<b>School</b> (Ref: Government)				
Catholic	1.33	1.07	1.45*	2.24**
Independent	1.05	1.01	1.56*	2.58**
<b>PS study intent</b> (Ref: No PS study intent)				
Post-school study intention	1.43**	1.27	1.59**	3.50**
<b>School completion</b> (Ref: Incomplete)				
School completion	0.74	1.39*	2.79**	32.38**
<b>Year 9 achievement</b>				
Reading	0.79**	0.89	0.95	1.32**
Mathematics	1.19	1.12	0.98	1.85**
Intercept <sup>a</sup>	-1.74** (0.38)	-0.72 (0.37)	-0.43 (0.32)	-4.97** (0.44)

Notes: Nagelkerke's  $R^2 = 42.6\%$

Parameters: non-significant ( $p > 0.10$ ) grey text; marginally significant ( $0.05 < p < 0.10$ ) black text.

Significant ( $0.01 < p < 0.05$ ) single \*; highly significant ( $p < 0.01$ ) double \*.

<sup>a</sup> The intercept parameter is an unstandardised figure. Its standard error is shown in parentheses.

Outcomes were examined by program type (apprenticeship, traineeship or TAFE course); by program level (lower certificate, higher certificate, diploma or above); and by field of study. Here only employment status and earnings are reported by program type.

### Labour Market Status

The labour market status of young people in 2004 who had engaged either in no post-school study or one of the three types of VET sector programs are shown in Table 2. Note that this table records the outcomes of people who had participated in the VET programs, whether they had completed them or not. These outcomes are the labour market activities reported by young people at the 2004 interview. That is, it is a snapshot of their labour market activity.

**Table 2 Labour market status in 2004 by type of main course and sex**

Sex	Type of course	N	Full-time study (%)	Full-time work (%)	Part-time work (%)	Un-employed (%)	NILF (%)
Female	No PS study	404	2	60	14	7	18
	Apprenticeship	60	3	72	15	2	8
	Traineeship	182	3	76	8	4	8
	Non-app VET	467	5	70	11	4	11
	Total	1113	4	67	12	5	13
Male	No PS study	436	2	78	8	9	4
	Apprenticeship	374	1	94	2	1	1
	Traineeship	145	2	87	6	0	5
	Non-app VET	336	4	82	7	5	2
	Total	1291	2	84	6	5	3
All	No PS study	840	2	69	11	8	11
	Apprenticeship	433	2	91	4	1	2
	Traineeship	327	2	81	7	2	6
	Non-app VET	805	5	75	9	4	7
	Total	2405	3	77	9	5	7

Note: Row percentages may not sum to 100 due to rounding.

### ***Cross-tabulations of Labour Market Status by Post-school Pathway***

Two-thirds of young people were engaged in full-time work late in 2004. For VET sector program participants, the rate of full-time employment is greater than that of the no post-school study group. This outcome does not mean that the improved employment outcome is a direct result of their VET sector programs, as it is possible that young people who are more likely to be employed are also more likely to enter these programs. However, as Marks (2005) showed, early post-school employment is associated with continued access to employment and that there is a general movement from part-time into full-time employment. Those young people who do not move into post-school study have the opportunity to enter full-time employment. Apprentices and trainees enter into contracts of employment and training, and so they have labour market exposure. TAFE course participants may work on a part- or full-time basis, but this is not a requirement of their programs, so in general they may not have the same level of labour market exposure as the no post-school study group.

There are differences in the levels of unemployment with members of the no post-school study group being more likely to be unemployed than is the case for participants in any of the VET sector programs. It is difficult to interpret the proportions of young people who are not in the labour force. Some young people may have withdrawn from the labour market after frustration at not being able to find work. Hillman (2005), however, has shown that two-thirds of the young women out of the labour force are involved in caring for children or home duties. It must be noted that the incidence of NILF is particularly high among young women who did no post-school study.

In comparing the outcomes of males and females, it is apparent that males experienced higher levels of full-time employment in all categories of post-school activity. Females have higher level of part-time employment than males.

Male apprentices have a particular advantage compared with no post-school study males, experiencing a 16 percentage point gain in access to full-time employment. Not only is there a possibility that the young men who pursue the apprenticeship alternative have characteristics that make them more likely to be employable, the fields of study that are typical of apprenticeships may lead into industries where jobs are readily available. Females who pursue traineeships have a similar (16 percentage point) advantage in access to full-time employment compared with no post-school study females.

### ***A Multivariate Model of Labour Market Outcome***

In an effort to separate possible confounding influences of background factors and type of VET sector program on labour market outcomes, a logistic regression model of labour market success, dichotomised as access to full-time employment or not, was developed. Further, because of labour market segmentation by gender, separate models were developed for males and females. Details of

these models are available in Curtis (forthcoming). One disadvantage of these models is their sole reliance on full-time employment as an index of labour market success. It would be possible to develop a more complex index taking into account part-time employment and detailed activities of the NILF group. Nonetheless, the models are informative, even if they could be more refined.

The factors that were significant in labour market success for females were Year 12 completion, above average numeracy achievement. Factors that militated against labour market success were living in non-metropolitan locations and having parents with other than a university qualification. Net of these (and other factors) completion of traineeships and non-apprenticeship VET courses had significant odds ratios of 2.3 and 1.8 respectively. The odds ratio for apprenticeships was non-significant.

The only non-VET program factor that was significant in labour market success for males was Year 12 completion. Surprisingly, given the influence of numeracy on apprenticeship participation, numeracy proved not to have a net significant influence. This factor appears to operate through apprenticeship participation. Living in non-metropolitan locations was not significant for males but having parents with other than a university qualification did reduce access to full-time employment. Net of these (and other factors) completion of apprenticeships and non-apprenticeship VET courses had significant odds ratios of 11.0 and 1.7 respectively. The odds ratio for traineeship participation was non-significant. The very high odds ratio for apprenticeship shows the very strong influence of this pathway for males.

### Weekly Earnings

Median weekly earnings, bounded by their inter-quartile ranges, and median weekly hours worked are plotted for males and females against four post-school pathways in Figure 2. There is little variation in hours worked, although the skewness is in opposite senses for males and females. Differences are, however, observed by type of post school program and gender.

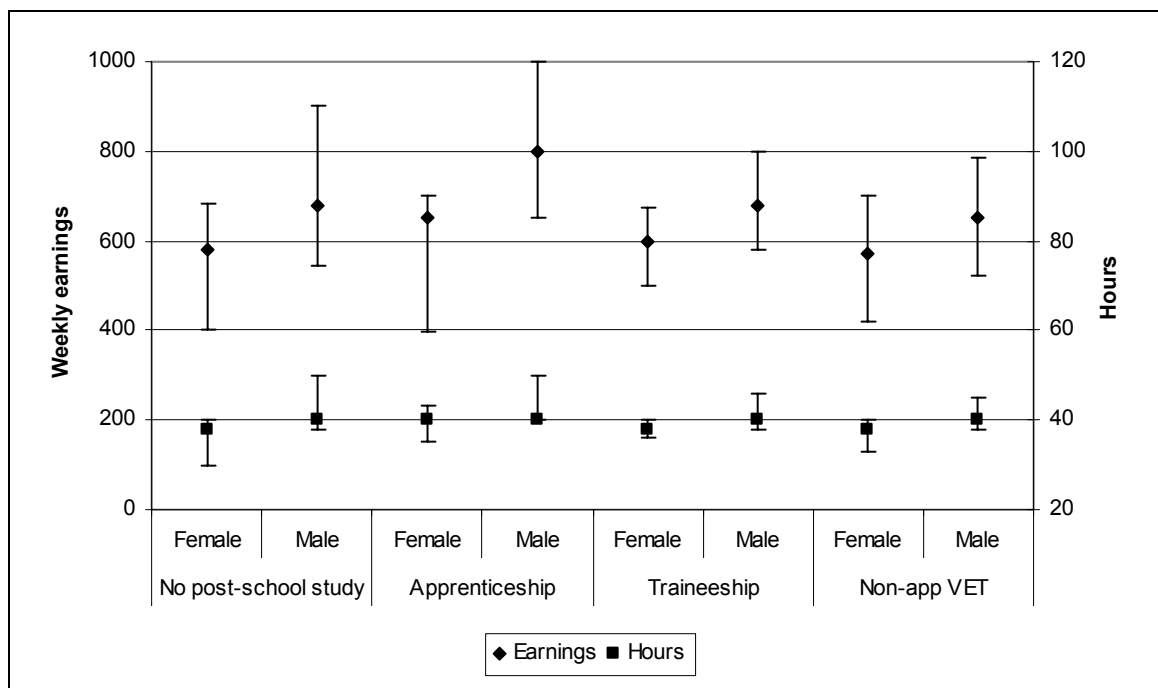


Figure 2: Weekly gross earnings and hours worked by program type and sex

Weekly earnings are negatively skewed for females and positively skewed for males, reflecting in part their hours of work. However, male earnings are consistently higher than female earnings. Females who had participated in apprenticeships report slightly higher earnings compared with females who had done no post-school study and for those who undertook traineeships or TAFE courses. A similar pattern is apparent for males. The earnings advantage of former apprentices compared with males who did no post-school education or training was \$150 per week.

Some caution is required in interpreting these results. Those young people who have undertaken TAFE courses are likely to have less labour market exposure than the other groups, and labour market experience is associated with increases in earnings.

Earnings are also associated with field of study. Employment following programs in engineering and related technologies and building and architecture attracts higher incomes than other fields and these are sectors in which a greater proportion of males work.

### **The Net Benefit to Program Completion**

While most young people completed the program that they commenced, completion in the VET sector is not as simple a consideration as it is in higher education. In some occupations, certification is a requirement for employment, but many participants in the sector undertake training in order to develop particular skills, and having achieved this aim, they may cease their program involvement. For this reason, there is some interest in examining the outcomes of completion of qualifications rather than mere participation in them.

### ***Program Completion and Labour Market Status***

The labour market status of males and females by post-school pathway and completion status is shown in Table 3. Overall, there is a net benefit to completion of approximately 13 percentage points. The advantage to males is less pronounced, but their employment rates are quite high. For females, the benefits to program completion are quite varied. Females who completed TAFE courses enjoyed a benefit compared with non-completers of 14 percentage points, but female apprenticeship completers have a lower full-time employment rate than non-completers. Two other factors need to be considered. First, part-time employment among female apprenticeship completers is quite high (22%). Second, the areas in which high proportions of females undertake apprenticeships, service industries such as hairdressing and hospitality, tend to provide part-time opportunities.

**Table 3 Labour market status of completers and non-completers by main course type**

Sex	Type of course	Completion status	Full-time study	Full-time work	Part-time work	Un-employed	NILF
Female	No PS study		2	60	14	7	18
	Apprenticeship	Incomplete	4	75	4	4	13
		Complete	3	70	22	0	5
	Traineeship	Incomplete	0	68	8	4	20
		Complete	3	78	8	4	6
	Non-app VET	Incomplete	5	59	11	5	20
Complete		5	73	10	3	8	
Male	No PS study		2	78	8	9	4
	Apprenticeship	Incomplete	0	85	12	0	4
		Complete	1	96	1	1	1
	Traineeship	Incomplete	0	89	11	0	0
		Complete	2	87	6	0	6
	Non-app VET	Incomplete	2	76	10	8	3
Complete		5	84	6	4	1	
All	No PS study		2	69	11	8	10
	Apprenticeship	Incomplete	3	80	9	1	7
		Complete	1	93	3	1	1
	Traineeship	Incomplete	0	79	7	2	12
		Complete	3	82	7	2	5
	Non-app VET	Incomplete	4	66	11	6	13
Complete		5	78	9	4	5	

Note: Row percentages may not sum to 100 due to rounding.

### ***Program Completion and Earnings***

Weekly earnings are plotted by post-school program type and completion status in Figure 3. The most striking observation is the earnings benefit to completion enjoyed by apprenticeship completers. This largely reflects male employment as over 80 per cent of apprentices are males, and the engineering

and building industries provide much of their employment. Modest benefits follow completion of traineeships.

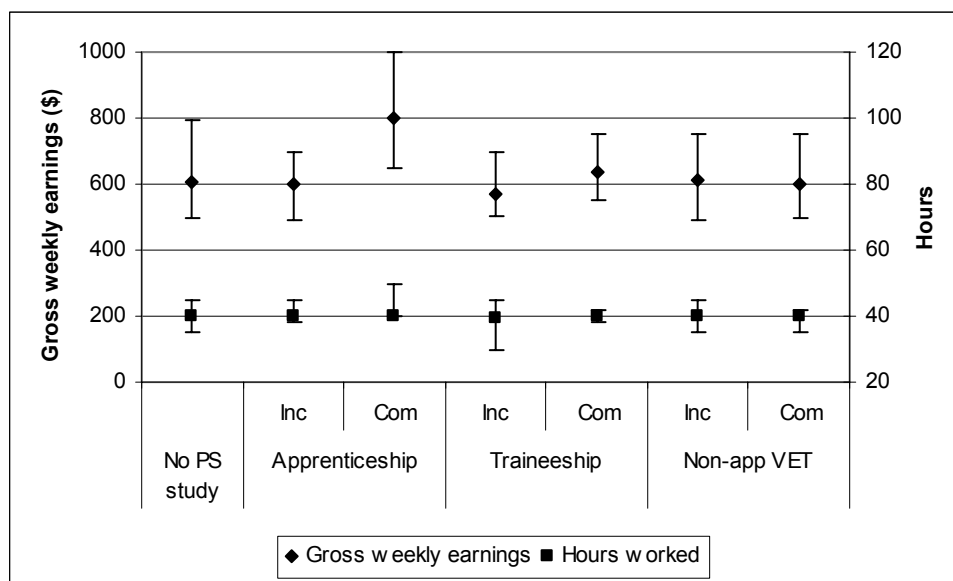


Figure 3: Earnings by post-school pathway and program completion status

### Summary of Findings and Implications

The VET sector programs considered in this paper are apprenticeships, traineeships and non-apprenticeship (TAFE) courses.

#### Summary of Findings

Approximately 42 per cent of the Y95 cohort had participated in at least one VET sector program by 2001. Just over half of these people enrolled in TAFE courses and approximately 10 per cent undertook apprenticeships and traineeships. Most apprenticeship participants were males, and about 60 per cent of traineeship participants were females. Twenty per cent of the cohort had done no formal post-school education or training by 2001. The no post-school study group is of policy interest because, given the skills shortages being experienced in Australia, this group might be encouraged to undertake some forms of VET sector programs.

Over 80 per cent of apprentice and trainee commencers completed their programs. For reasons discussed in the paper, this may be a slight over-estimate of completion status, but it does seem that three-quarters of commencers do complete. Approximately two-thirds of TAFE course commencers complete their programs.

Participants in all three types of VET sector program experienced greater access to full-time employment than did members of the no post-school study group. Because there may be differences in the employability of course commencers, this benefit cannot be attributed to these programs. However, the multivariate modelling that took into account individual background factors provided some support for the claim that these programs are advantageous. What this modelling showed is that apprenticeships are particularly advantageous for males and that traineeships are beneficial for females. TAFE courses provide favourable outcomes for both male and female participants.

Completion of VET sector programs is advantageous. Completion of apprenticeships is particularly beneficial for males, in terms of employment status and earnings. Female apprenticeship completers are not advantaged compared with non-completers in access to full-time employment, but they do experience high levels of part-time employment.

TAFE course completers have greater access to full-time employment, but do not gain a significant earnings return.

## Implications

The findings of this project have relevance to young people considering their post-school alternatives. Young males who are contemplating leaving school before completing Year 12 will have access to favourable employment and earnings if they pursue apprenticeships. However, school completion retains a net advantage, even for VET sector participants. For young women, apprenticeships do not confer significant advantages, but traineeships are a promising pathway.

Young people who complete TAFE program do have greater access to full-time employment compared with those who do no post-school study. Non-completion of these programs does not have this benefit.

Making this sort of information available to young people in early secondary schooling when they are formulating and refining their career decision-making may help them to identify promising post-school pathways.

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