

Longitudinal Surveys of Australian Youth

Research Report 52

VET Pathways Taken by School Leavers

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Acronyms

ABS	Australian Bureau of Statistics
ACER	Australian Council for Educational Research
ANTA	Australian National Training Authority
AQF	Australian Qualifications Framework
ASCED	Australian Standard Classification of Education
ASCO	Australian Standard Classification of Occupations
AVETMISS	Australian Vocational Education and Training Management Information Statistical Standard
DEST	Department of Education, Science and Training
DEWR	Department of Employment and Workplace Relations
ENTER	Equivalent National Tertiary Education Rank
FOS	Field of Study
LSAY	Longitudinal Surveys of Australian Youth
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NCVER	National Centre for Vocational Education Research
NILF	Not in the Labour Force
SES	Socioeconomic Status
TAFE	Technical and Further Education
VET	Vocational Education and Training

EXECUTIVE SUMMARY

This report examines the vocational education and training (VET) pathways pursued by young people since leaving school. It investigates the characteristics of those who pursue VET, their persistence in those programs, and the labour force and related outcomes that they experience following their VET participation.

The investigation uses data collected as part of the Longitudinal Surveys of Australian Youth (LSAY) program. It is based on survey data collected annually since 1995 from young people who were in Year 9 at school at that time (the Y95 cohort). Their progress through school, into any post-school education they had undertaken by 2001 (when their modal age was 20 years) and their participation in the workforce to 2004 (when their modal age was 23 years) are analysed.

The three types of VET programs investigated are apprenticeships, traineeships and non-apprenticeship VET courses. In addition, the pathways of two other groups are considered: those who entered university; and those who chose not to undertake any formal education or training after leaving school (the 'no post-school study' pathway). Outcomes that are examined include employment status, unemployment, job satisfaction, weekly hours worked and earnings.

Participation in Post-school Education and Training

About 80% of the cohort had commenced post-school education and training by 2001 (when the vast majority were aged 20). Approximately 42% of the Y95 cohort had commenced at least one VET program by 2001. Of the latter, about half had participated in apprenticeships or traineeships and half in non-apprenticeship VET. The proportion commencing VET was higher for early school leavers (around 58%) than Year 12 completers (38%).

Characteristics Related to VET Participation

Just over 10% of young people commenced an apprenticeship (20% of males, but only 3% of females). Thus, the 'prototypical' apprentice is a male. He is most likely to be an early school leaver who intended to undertake an apprenticeship. He is very unlikely to be from a non-English speaking background. When in Year 9, he demonstrated below average literacy skills but higher numeracy skills than cohort members who do no post-school study or training. The apprenticeship pathway is a particularly important one for young people from regional locations.

Of the 10% of the cohort who commenced traineeships, 59% were taken by young women. Net of other factors, school completion is positively associated with traineeship participation compared with the no post-school study pathway. However, there is no definitive prototypical trainee. Trainees are more likely to be female than male, less likely to be among the top 25% in literacy or numeracy (who are more likely to enter higher education), and less likely to be from a high SES background than others. The traineeship pathway is a particularly important one for Indigenous young people and for those in rural and remote locations.

Almost one-quarter of respondents had commenced a non-apprenticeship VET program by 2001. These programs are offered over a wide range of AQF levels, from Certificate I to Advanced Diploma. Diploma and higher level qualifications made up 42% of these courses, higher certificates 32% and lower certificates 18%. Non-apprenticeship course participants who did not complete Year 12 at school are most likely to enrol in lower certificate programs. Diploma and above level programs are the most common for school completers. Just over 8% of respondents did not know the level of the qualification they were taking.

On most socio-demographic variables, there are relatively weak relationships with the level of qualification attempted. There are, however, substantial differences in the social backgrounds of the young people who do no post-school study, those who pursue VET pathways, and those who go to university. Thus, while there are differences in the sociodemographic backgrounds of young people who follow the major post-school routes, pathways within VET provide socially equitable access to post-school education and training.

There is no typical non-apprenticeship VET course participant. Perhaps these programs could be described as egalitarian in that their distinguishing characteristic is their broadly representative client base.

Completion of VET Programs

The completion rate of apprenticeships and traineeships is approximately 83%, and of non-apprenticeship programs about 73%. Completion rates for non-apprenticeship courses vary by program level, with lower certificate courses having a completion rate of 83% compared with 65% for diploma level programs.

The reasons for discontinuation of programs vary by program type. Apprentices report leaving because of conflict with supervisors and peers, and because they find they do not like the type of work. Trainees who leave do so for health and personal reasons or because they find better work or are dissatisfied with their off-the-job training. Non-apprenticeship VET course participants leave because they want to get jobs or apprenticeships or because they find the courses do not meet their expectations.

Outcomes Subsequent to VET Programs

Young people who participate in apprenticeships and traineeship programs experience better outcomes than those who do no post-school study. Participation in, but non-completion of, non-apprenticeship VET courses, however, is *not* associated with better outcomes than for those with no post-school education.

While *participation* in most types of VET program is associated with more favourable outcomes than those experienced by those who do no post-school study, *completion* of those programs does appear to confer additional labour force advantages.

Completers of VET programs experience on average a 10 percentage point bonus in access to full-time study or work compared with non-completers and a 7 percentage point reduction in being unemployed or out of the labour force. These more favourable outcomes cannot be uniquely attributed to program completion rather than the prior characteristics of those who tend to complete. However, it should be noted that these better outcomes are also evident after controlling for the different characteristics of the individuals who choose these programs, their educational achievements at school, and the fields of study of their programs.

Males who complete apprenticeships experience the best labour market outcomes of VET participants. Full-time employment among former apprentices is high, at more than 90%, and their earnings are higher than those reported by other VET participants and those who do no post-school study. The fields in which apprentices undertake their training and work no doubt account for some of the differences in labour market outcomes. Female apprenticeship completers experience less favourable outcomes than their male counterparts, but this is attributed to the fields of work that they undertake.

The full-time employment rate among former trainees is over 80% with a further 7% in part-time work. This outcome is superior to that experienced by young people who do no post-school study.

The full-time employment rate among young people who complete non-apprenticeship VET courses is 78%, with 9% in part-time work and 5% pursuing further study. These outcomes are also superior to those of cohort members who do no post-school study. Non-apprenticeship VET participants have less labour market experience than the no post-school study group, but they have some advantages. They represent a higher SES profile and they are much more likely to have completed Year 12.

Low Academic Achievers and Outcomes following Lower Level Certificate Programs

Both male and female low academic achievers experience superior full-time employment outcomes compared with those who do no post-school education and training. Females in the lowest quartile of academic achievement who do no post-school study have a full-time employment rate of 49%. Those who undertake lower certificate programs have a full-time employment rate of 73%. The full-time employment rate of males in the lowest achievement quartile who do no post-school study is 72%. For those who do a lower certificate program, the full-time employment rate is 92%, a 20 percentage point advantage. This advantage is largely associated with lower certificate apprenticeships and traineeships; more modest and diverse outcomes are associated with lower certificate non-apprenticeship programs. This suggests that lower certificate programs can provide a good pathway into the labour market for less academically oriented young people. Lower certificate non-apprenticeship courses, as an alternative to Year 12 completion, are advantageous for males, but not so for females.

VET Pathways Taken by School Leavers

1. INTRODUCTION

The VET system has increasingly become an important pathway in the transition from school to work. Demand from 15 to 19 year-olds for VET offerings grew by 50% between 1991 and 2000 (NCVER, 2002). In 2001, almost 20% 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 VET course, and of this group, about 83% had completed Year 12 (McMillan, Rothman, & Wernert, 2005, p. 12). Of the same cohort, almost 21% had commenced an Australian Apprenticeship, and of these, 60% had completed Year 12 (Ainley & Corrigan, 2005, pp. 8, 10). VET thus provides significant pathways for both school completers and school non-completers. Of policy interest is the extent to which VET 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 and that involve study in the VET system. The three dominant pathways through VET are apprenticeships, traineeships and non-apprenticeship VET courses.

Definitions

Australian Apprenticeships comprise both apprenticeships and traineeships. They combine practical work with structured training and lead to nationally recognised qualifications. Until the late 1990s apprenticeships were well known and had been more common than traineeships (Brooks, 2004, p. 9). Since that time, the number of traineeships has grown very rapidly and traineeships are now rather different in character from their original conception (Cully, 2006). At the time when many of the Y95 cohort members entered these forms of training, the earlier conceptions of apprenticeship and traineeship are most relevant, and it is convenient to distinguish between apprenticeships and traineeships for this group. For this cohort of young people, apprenticeships and traineeships represent alternative VET pathways, and have been treated separately in this report. Where they are referred to jointly, they are called Australian Apprenticeships. Where reference is made to them separately, they are identified as apprenticeships or traineeships.

Courses considered in this report to be non-apprenticeship VET programs are those leading to a formal qualification recognised under the Australian Qualifications Framework (AQF) that are not linked to Australian Apprenticeships. Most enrolments in these courses occur in TAFE institutes, but many are also offered by business colleges and other registered training providers. Short, informal training and leisure courses and VET courses offered through schools have been excluded from this category in this report. Unlike Australian Apprenticeships, they are courses that do not involve contracts of employment, although many students work part-time or full-time while studying. The term “non-apprenticeship” is used in this report to distinguish between these courses and Australian Apprenticeships.

THE VET PATHWAY IN CONTEXT

Upon leaving school, young people make choices about their future activities. Many go to university, many commence non-apprenticeship VET courses, others undertake apprenticeships or traineeships, some enter the labour market directly, and a small proportion engage in a range of non-labour market activities. The choices that young people make in selecting a particular pathway are constrained by the availability of places, competition for those places, young people’s achievements and interests, and their life circumstances.

While it is known that many young people take multiple pathways in their transitions from school to adult life (see, for example, Lamb & McKenzie, 2001), a simplified set of pathways, shown in Figure 1, is used to place the pathways involving VET in context. Figure 1 is also a simplified representation of reality because many young people engage in more than one activity at one time. Many young people who study also work on a part-time basis. Further, Australian Apprenticeships involve contracts of employment as well as contracts of training, so participants have both labour market exposure and gain experience in it during their training.

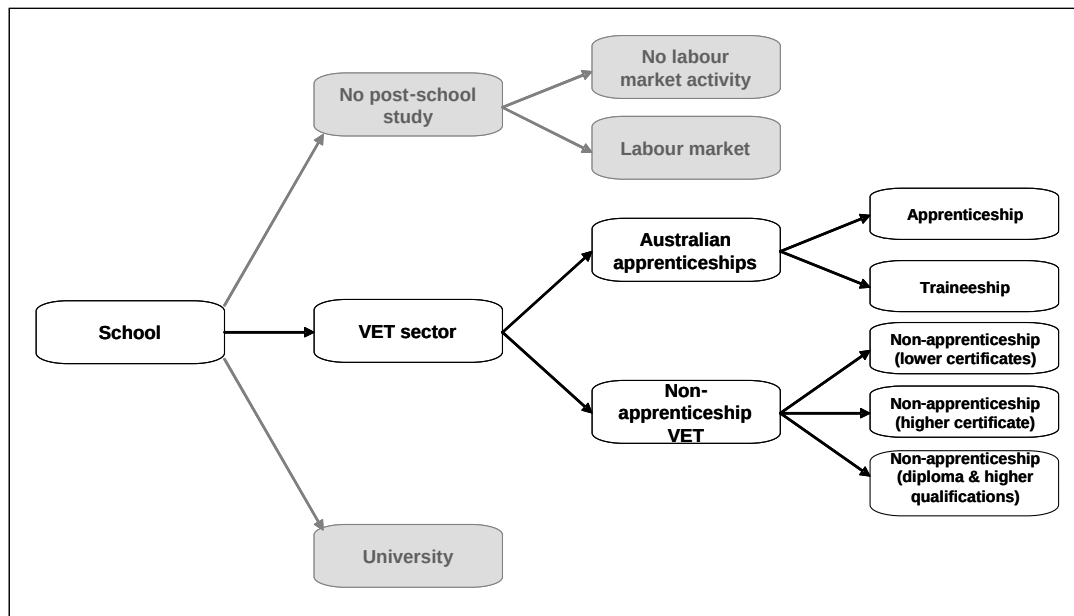


Figure 1 Pathways available to young people and examined in this report

In the present study, young people's post-school pathways were classified initially according to whether, by 2001, they had commenced a higher education program, any VET program, or had not undertaken any formal post-school education or training program. The latter group includes those who are employed or who are seeking work and those who are not in the labour force. Of those who had commenced an education or training program, some had begun more than one program, and their study may have been of different types and in different sectors.

Participants and Programs

The characteristics of individuals who undertake VET are compared with the characteristics of those who do no post-school study and of the young people who enter higher education. The attributes of both individuals and VET programs that are associated with completion of those programs are examined, and reasons for non-completion are identified. The outcomes that are associated with VET programs are a focus of the study. Outcomes investigated include labour force status, weekly hours worked and earnings, job-related training involvement and job satisfaction.

Three main aspects of VET programs are explored. They are the type of program, the level of the program and the field of study of the course. Three program types are identified, namely apprenticeships, traineeships and non-apprenticeship VET courses. Program levels are classified according to the levels prescribed in the AQF. The levels have been categorised as lower level certificates (AQF level I and II qualifications), higher certificates (AQF level III and IV certificates) and diploma and above qualifications (including diplomas, advanced diplomas and associate degree programs). Twelve broad fields of study are recognised in the ASCED classification and they are used in this study (ABS, 2001).

At the 2004 data collection, the modal age of the 1995 Year 9 cohort was 23 years. By this age, the majority of respondents had the opportunity to participate in post-school study and had entered the labour market. Approximately 20% of the cohort did not participate in post-school study, 40% enrolled in VET and just over 40% undertook university study. A small proportion of the cohort (3%) took courses that are not part of formal post-school education or training sectors. There is some double counting of young people who commenced more than one program in VET, higher education or both.

Most young people commence their VET study in the year after leaving school (McMillan *et al.*, 2005). Other pathways include those from school-to-work-to-VET or from school-to-higher education-to-VET (Harris, Sumner, & Rainey, 2005). In order to accommodate these and the many other pathways that involve VET study, VET courses commenced by 2001, that is, within three years of the modal school completion year, are considered. This enables school completers who entered a VET course after some delay to be included. Thus, the outcomes of multiple pathways through VET into the labour market can be assessed. Outcomes are considered only for VET participants, although the no post-school study group was analysed for comparison. Those young people who had undertaken university study were excluded from analyses of outcomes as they are considered in detail by Marks (2007).

PREVIOUS RESEARCH

Several aspects of this study have been the subject of recent LSAY reports, in particular those by Ainley and Corrigan (2005) and McMillan, Rothman and Wernert (2005). This study consolidates findings on participation in, progress through, and outcomes subsequent to the various VET pathways. The study also extends the findings from earlier investigations in two ways. First, it examines outcomes to the end of 2004 when the great majority of respondents had completed their post-school study and had begun to establish themselves in the labour force. Second, it examines a broader range of outcomes including labour force status, earnings and involvement in subsequent education and training activity.

Much research on VET participation and its outcomes is based on cross sectional data and provides detailed accounts of participation and completion rates and on short-term labour force outcomes. Other studies using longitudinal data sources have traced the multiple pathways from school to the labour market, for example Lamb and McKenzie (2001) and Lamb (2001). Other research, for example Ryan (2002), has examined other data sources from which long term influences of education and training on labour force participation and earnings have been evaluated. This project builds upon those findings and examines a range of medium term outcomes for the 1995 Year 9 cohort associated with different VET pathways as they move from school to adult life.

Types of VET Courses Undertaken after Leaving School

Ainley and Corrigan (2005) reported on participation in apprenticeship programs, and McMillan *et al.* (2005) used LSAY data to study the involvement of the 1995 Year 9 cohort in non-apprenticeship VET courses. These studies have provided a substantial body of information on the characteristics of those who undertake these types of VET programs. For example, Ainley and Corrigan found that Australian Apprenticeship participants were more likely to be male than female, low achieving rather than high achieving, to be English speaking rather than of a non-English speaking background, and to have parents from a skilled trade rather than other occupational categories. McMillan *et al.* found that non-apprenticeship course participants were more likely to be female than male, more likely to be school-completers rather than non-completers, and equally likely to be enrolled in an associate diploma or above qualification as in certificate qualifications. However, within both Australian Apprenticeships and non-apprenticeship VET programs, substantial differences were apparent in the distribution by gender and prior academic achievement by field of study. It is apparent that the background characteristics of participants in VET are quite heterogeneous.

VET Course Completion

Completion in VET is a more complex issue than in other education sectors. In VET, the focus on skill formation has led to the creation of course structures in which individuals may enrol in programs with the primary intention of gaining specific skills. Having gained the desired skills through the completion of one or more units of competency or modules, they may choose to discontinue their course. However, discontinuation also occurs because individuals may find that a course is unsuited to them for a wide range of reasons. Some reasons may be personal, but participants may find that the course did not equip them with the skills they had anticipated. Thus, in addition to an examination of the extent of discontinuation in VET courses, reasons for that discontinuation are investigated.

Numerous studies have investigated VET course completion. Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS) data have been used to report both course completion (graduation) and module completion rates. Karmel (2007, p. 16) noted that completion rates based on administrative data sources underestimate completions. Some students complete the required units but are not informed of their eligibility for the award of a qualification; some students report completions that are not recorded in the data, and the very large proportion of part-time students leads to longer times to completion that are not fully accommodated in the data. Foyster, Hon and Shah (2000) modelled student flows through TAFE courses and reported that almost half of all module or unit enrolments resulted in partial course completion and that a little over one-quarter of all enrolments led to a completed qualification, with fewer than one-quarter of enrolments having led to non-completion. They noted that if course completion is used as the sole criterion of success at either the student or system level, the influence of VET course provision on skill formation is underestimated.

Ainley and Corrigan (2005) found that the rate of discontinuation of study among Australian Apprenticeships was approximately 17% and that of those who discontinued, 16% switched to another course. They estimated the completion rate at 83%, but indicated that, for several reasons, this may be an overestimate of completion and that a sample attrition corrected completion rate was 'likely to be a little less than 80%' (p. 27). By contrast, Ball and John (2005, p. 7) reported much higher rates of discontinuation, ranging from 40 to 45%, for commencements in the period 1995 to 1999. McMillan *et al.* (2005) reported a slightly higher rate of discontinuation among non-apprenticeship participants, compared with apprentices and trainees, but non-apprenticeship courses are typically longer and this is consistent with the finding of Foyster *et al.* (2000) that length of course is correlated positively with discontinuation. Ball and John (2005, pp. 17-18), however, found a more complex relationship. In some industry areas, longer periods of training were associated with higher completion rates, while in others an inverse relationship was apparent. Some of the differences in the findings of these studies may be due to the various data sources and methods of estimation, but substantial differences may be attributable to quite complex interactions of many factors, including personal characteristics of participants, aspects of the training, the industry in which apprentices work and labour market conditions.

One of the key performance measures used to assess the VET system is the 'load pass rate' (ANTA, 2003, pp. 115-117). This statistic summarises the proportion of enrolments at the unit or module level that lead to successful completion. While reporting only course completion may understate the influence of VET on skills formation, reporting module completion may not provide adequate information on the impact of VET study on labour force outcomes and individual skill acquisition. Completing a small number of modules may not provide a sufficient skill base to enable individuals to find employment related to the field of study. An alternative measure of completion, used by Resch and Hall (2002) in the United States, may provide a useful option in the Australian context. They distinguished between graduation (completion of all requirements for a qualification), completion (meeting the requirements of at least half of the specified units of a course and then finding employment in a job related to the field of study) and attrition. From LSAY data it is only possible to say whether respondents have completed a qualification and not that some level of partial completion has been achieved.

Labour Force Outcomes and Further Study Relating to VET Course Completion

The main source of information on labour force outcomes for VET courses is the annual Student Outcomes Survey managed by the National Centre for Vocational Education Research (eg, NCVER, 2004). That survey tends to show high levels of employment following both course and module completion. However, differences in the employment gain that follows training are apparent by level of qualification and field of study. The 2004 Student Outcomes Survey included information on slightly longer-term labour force engagement of VET graduates and module completers. Data on employment status showed that for both graduates and module completers there had been a 20 percentage point increase in employment from a time six months before their training, which occurred during 2001, to September 2004. A more detailed analysis of young people's activities before training is not presented and no comparison is made with the employment outcomes that can be attributed to greater experience in the labour force. Dockery, Koshy and Stromback (2005) observed that it is necessary to take a longer view of the influence of education and training programs, and this study is able to do that.

Ryan (2002) examined the labour force outcomes of VET diplomates compared with school completers who had undertaken no post-school study. He found that these VET graduates enjoyed similar rates of full-time employment to those found for university graduates. University graduates have been shown to experience very low unemployment and to receive higher salaries than other members of their cohorts (Marks & Fleming, 1998; Marks, 2007). People who have completed apprenticeships, especially traditional apprenticeships, have very favourable labour force outcomes (NCVER, 2004). Stanwick (2005) examined outcomes for those who commenced lower level certificate courses and found that the returns to these programs were rather marginal. Dockery *et al.* (2005), who investigated traineeships, many of which are undertaken at lower certificate levels, found more encouraging returns. Their analysis took a longer-term view and it appears that the lower level training in conjunction with labour force experience provides more favourable returns than labour force experience alone.

There is a need to examine the outcomes for specific groups of young people making a transition from school to work. Lower certificates may be undertaken as part of Australian Apprenticeships, but are also a non-apprenticeship pathway into further education and work for school non-completers and for those with low academic achievement. Outcomes following lower certificate participation for these groups are investigated in this project.

Marks (2005), using LSAY data from the Y95 cohort, argued that with the exception of apprenticeships for males, VET participation did not result in substantial gains over the experiences of young people who did no post-school study and that experience in the labour force was as valuable as VET program participation.

Labour Force Outcomes of VET Completers and Non-completers

Few studies have compared the labour force outcomes of VET course completers and non-completers. The results of the Student Outcomes Survey (NCVER, 2004) showed some consistent differences between course completers and module completers. Course completers were more likely to have shown a greater gain in employment status than were module completers overall, and in all fields of study other than agricultural and environmental studies, and education. At all qualification levels, course completers showed greater employment gains than module completers. On all individual characteristics, including age, gender, indigenous status, disability status and location, course completers revealed greater gains in employment status than did module completers. In this investigation, a longer-term view of the outcomes comparing completers and non-completers is provided.

RESEARCH QUESTIONS AND SCOPE OF THE REPORT

Four sets of research questions are addressed:

1. Which school-leavers choose which VET pathways?
 - What education and background characteristics are associated with choosing various VET pathways? In particular, which early leavers and which Year 12 completers choose VET and which VET pathway do they choose?
 - How important is the VET pathway for various groups in comparison to other pathways? To what extent is the VET pathway used by school leavers in general and by early leavers and Year 12 completers in particular? Which groups, such as regional and Indigenous students, appear to make lesser or greater use of the VET pathway?
2. How many people complete VET courses and what individual characteristics and other factors influence completion?
 - Of the young people who commenced a VET course by 2001, how many completed that qualification?
 - What individual and course-related factors influence the completion of a VET course?
 - What reasons do non-completers give for their decisions?
3. What are the outcomes, in terms of employment status, earnings, participation in further training and job satisfaction, of VET course participation?
 - Do outcomes differ by course level (lower certificate, higher certificate, or diploma), course type (traineeship, apprenticeship and non-apprenticeship VET), and field of study?
 - Do outcomes differ by VET course completion status? If so, how do they differ?
4. What is the net employment benefit of VET course participation, and how does this differ by course and participant characteristics?
 - Are these outcomes related to socio-demographic factors?
 - What is the net benefit of completing VET courses and does this differ by course level and type and the characteristics of participants?
 - How effective are lower-level VET courses (up to Certificate II) at improving the outcomes of the lower-performing school leavers?

DATA AND METHODS

The data used for this report are based on responses from a sample of the cohort of young people who were in Year 9 in 1995 (the Y95 LSAY cohort, N=13 631). For analyses of participation in the VET sector, data on course commencements up to 2001 were used (N=6876). For later analyses on the outcomes of VET pathways, data up to the 2004 survey were used (N=4660). Because of designed over- and under-sampling in various jurisdictions and by some individual characteristics, and due to non-random sample attrition, weighted frequencies are reported in subsequent tables, unless otherwise indicated. Details are provided in Appendix 1, and a ‘map’ of the variables examined is provided in Figure 2.

Approximately 80% of young people in the survey had completed Year 12 at school. Eighty per cent% of young people surveyed undertook some form of post-school education and training. Approximately 10% entered apprenticeships, a further 10% commenced traineeships, 20% began non-apprenticeship VET courses (most in TAFE institutes, but some with private VET providers) and 40% undertook higher education courses.

Structure of the Report and a Guide to Key Findings

Chapter 2 addresses Research Question 1 and documents the characteristics of those young people who undertake the three VET program types, those who go to university and those who do no formal education or training after leaving school. These analyses show that there are significant differences in the characteristics of the young people who pursue the various pathways available to them.

Background characteristics	School experience	Post-school study	Outcomes
Sex	School sector	None	Labour market status
Yr 9 achievement	School completion	Apprenticeship	
Post-school intent	VET in school	Traineeship	Participation in formal and informal training
Parent occ.		Non-app'ship course	
Parent ed.		University course	Job satisfaction
SES (ANU3)		Level of study	
Language background		Field of study	Hours & Income
Indigenous status		Completion status	
Location			

Figure 2 Variables examined in the report

In Chapter 3, the proportions of commencers who complete VET programs are recorded. The characteristics of those who do not complete are identified and reasons for non-continuation of programs are summarised. Completion is found to be relatively high, but to vary by VET pathway, with Australian Apprenticeships having relatively high completion rates.

A range of outcomes that follow participation in each of the VET pathways is presented in Chapter 4. The outcomes examined are labour force status in 2004, experience of unemployment during 2004, number of hours worked per week and weekly gross earnings, participation in formal and informal job-related training, and job satisfaction. Substantial differences are reported in weekly earnings and access to full-time employment by pathway and by field of study.

In Chapter 5, the analysis of outcomes is extended to examine the benefits of course completion. Young people who completed Australian Apprenticeships experienced less unemployment and higher earnings than non-completers.

The 'net benefit' to VET participation is explored in Chapter 6. The key outcome variable used is full-time engagement (in study or work), and net benefit is examined by program type and level. In this chapter, the outcomes associated with participation in lower level certificate programs are a particular focus, especially for early school leavers and lower academic achievers.

The findings from the analyses are summarised in Chapter 7 and some implications explored.

2. CHARACTERISTICS OF VET PARTICIPANTS

This chapter presents information on the characteristics of the young Australians who become involved in education and training in the VET sector. In later chapters, program completion and its effects are investigated.

Post-school Education and Training Participation

As part of the 2001 survey of the Y95 cohort, respondents were asked about their participation in up to four post-school education and training programs up to and including 2001. Of the 6876 people who responded, four out of five had undertaken some form of post-school study. Types of post-school study have been classified for this report into five categories: a short course or one not leading to a recognised qualification; a higher education course, most commonly a bachelor degree; and any of three types of VET program, namely an apprenticeship, a traineeship, or a non-apprenticeship course.

While most respondents who undertook a post-school education or training program began only one such program, 19% of respondents commenced more than one. Subsequent programs may have been of the same type as the first, such as two traineeships, or they may have been of different types and in different sectors, such as a degree and a subsequent apprenticeship. Because of this participation in programs of different types, the percentages of enrolments in the various post-school program types sum to more than 100 in some tables. Further detail on multiple post-school program commencements is presented in Appendix 2.

PARTICIPANTS IN POST-SCHOOL EDUCATION AND TRAINING

By age 20, approximately 20% of young people had not participated in any further education and training after leaving school. These young people are referred to as the ‘no post-school study’ group. Approximately 42% of the cohort enrolls in university courses, 12% embarks on apprenticeships, 10% on traineeships and 24% on non-apprenticeship VET programs. Of the young people who enrol in non-apprenticeship VET courses, 42% enrol in diplomas, 32% in higher certificates, 18% in lower certificates and 8% do not know the level of their qualification.

Participation in various post-school education and training programs by selected individual characteristics is shown in Table 1, and by school-related characteristics in Table 2. The tables facilitate comparisons of participation in various types of post-school programs by the selected characteristics. Participation in short or non-award courses is low, typically below 3%, and varies little across categories. Data on short course participation are presented for completeness, but will not be discussed further.

Table 1 and Table 2 show the proportions of young people of particular characteristics who pursue the various post-school pathways (that is, row percentages in the tables). Alternative views in which the proportions of each pathway contributed by young people of given characteristics (column percentages) are shown in Table 42 (socio-demographic characteristics) and Table 43 (school-related characteristics) in Appendix 4.

Table 1 Participation in post-school education and training pathways for selected socio-demographic characteristics (as a percentage of young people with those characteristics)

Characteristic	Sample %	Non-VET pathways			VET pathways			
		No post-school study	Short course	Higher ed. course	Apprenticeship	Traineeship	Non-app VET	Any VET program
<i>Sex</i>								
Female	51	19	3	47	3	11	27	39
Male	49	22	3	35	20	8	21	45
<i>Indigenous status</i>								
Indigenous	2	26	4	22	14	24	25	54
Non-indigenous	98	20	3	42	12	9	25	42
<i>Location of residence</i>								
Metropolitan	55	18	3	46	10	7	26	40
Regional	24	24	2	37	14	12	21	43
Rural or remote	21	22	3	34	14	14	24	46
<i>Parent's occupational type</i>								
Professional or paraprof	24	13	3	59	8	7	20	32
Manager or administrator	22	15	3	47	11	10	24	42
Clerical or personal service	17	18	4	40	11	11	26	44
Tradesperson	20	23	3	32	18	10	25	48
Plant or machine operator	4	28	2	32	7	11	31	45
Labourer	13	25	3	33	10	12	26	46
<i>Parent's education</i>								
Incomplete Secondary	24	27	2	32	11	11	25	43
Completed secondary	22	22	3	38	11	12	25	44
Trade or technical qual	20	19	2	38	16	10	25	46
Higher education qual	34	10	3	64	8	7	19	32
<i>SES quartile</i>								
High SES	13	10	3	68	6	6	19	28
Mid-high SES	23	15	2	52	9	9	23	37
Low-mid SES	37	20	4	37	15	11	25	47
Low SES	27	26	3	32	11	11	26	45
<i>Language background</i>								
English	89	21	3	40	12	10	24	43
Other than English	12	16	3	51	5	5	28	36
<i>Country of Birth</i>								
Australia	90	21	3	40	12	10	25	43
OS English speaking	3	17	4	42	10	10	26	43
OS Non-English speaking	7	13	3	62	3	3	23	28
<i>All</i>	<i>100</i>	<i>20</i>	<i>3</i>	<i>41</i>	<i>12</i>	<i>10</i>	<i>24</i>	<i>42</i>

Notes: The figures in shaded cells sum to more than 100% across rows because some individuals undertook programs in more than one category. Similarly, the figures within the Apprenticeship, Traineeship and Non-apprenticeship VET course sum to slightly more than the figure in the 'Any VET program' cells because some individuals undertook more than one type of VET program.

Post-school Pathways Chosen by Participants

No Post-school Study Pathway

The characteristics that most distinguish the young people who, having left school, take no further part in education and training include the socioeconomic-related variables parent's education, SES, school sector and school completion status. Fewer than 10% of the children of parents with a university qualification or who are in the highest SES quartile do no post-school study, compared with a cohort average of 20%. Over one-quarter of Indigenous young people cease their formal education upon leaving school.

One-quarter of the young people who had attended government schools but fewer than 10% of those who had attended independent schools do no further education. Sixteen per cent of school completers, but more than twice that proportion (38%) of school non-completers, do no further study or training. There are also differences by achievement with 11% of the highest achievement quartile, but one-third of the lowest quartile, not engaging in post-school programs.

Several other factors are less strongly associated with no post-school study. Young people who live outside major cities are less likely to pursue further education and training than their metropolitan peers. Males are less likely than females to undertake further study, but young people from non-English speaking backgrounds are much more likely to pursue post-school study programs.

Table 2 Participation in post-school education and training pathways for selected school-related characteristics (as a percentage of young people with those characteristics)

Characteristic	Sample %	Non-VET pathways			VET pathways			
		No post-school study	Short course	Higher ed. course	Apprenticeship	Traineeship	Non-app VET	Any VET program
<i>Achievement quartile</i>								
Lowest quartile	25	32	3	15	16	11	31	54
Second quartile	25	23	3	32	13	11	29	49
Third quartile	25	16	3	49	11	11	22	39
Highest quartile	25	11	2	68	7	6	15	25
<i>School sector</i>								
Government	68	24	3	33	13	11	26	46
Catholic	20	14	2	53	9	7	24	38
Independent	13	10	3	66	7	6	19	29
<i>Year level attained</i>								
Year 10 or less	12	38	4	1	29	14	22	59
Year 11	9	37	4	4	25	14	24	57
Year 12	80	16	2	51	8	9	25	38
<i>Any VET in School</i>								
No VET study	76	16	2	54	7	8	22	35
Some VET study	24	26	3	22	15	12	31	54
<i>All</i>	<i>100</i>	<i>20</i>	<i>3</i>	<i>41</i>	<i>12</i>	<i>10</i>	<i>24</i>	<i>42</i>

Notes: The figures in shaded cells sum to more than 100% across rows because some individuals undertook programs in more than one category. Similarly, the figures within the Apprenticeship, Traineeship, and Non-apprenticeship VET course sum to slightly more than the figure in the 'Any VET program' cells because some individuals undertook more than one type of VET program.

University Study

Despite the fact that university entrants account for over 40% of the cohort, their characteristics are quite marked. Setting aside Year 12 completion, which with few exceptions is a requirement, the major characteristics that are associated with a greater likelihood of university commencement are having university educated parents, having parents in professional or managerial occupations, having above average SES, having attended a non-government (especially independent but also Catholic) school, and having a non-English speaking background.

Characteristics associated with a low likelihood of entering university are being an Indigenous young person, being in a below average achievement group, or having undertaken VET subjects at school.¹

¹ Some limitations on this variable, in particular its under-reporting, are discussed in Appendix 1.

Apprenticeships

Take up of apprenticeships is noticeably greater than the average for those who did not complete Year 12, males, those from medium-low SES families and where one parent is in a technical or trade occupation, those from government schools, in the low achievement quartile, and having undertaken VET in school subjects. Take up is also higher than average in regional and rural and remote areas. On the other hand, take up is much less than average among those who attended non-government schools, from high SES families and where one parent is university educated, and those from non-English speaking backgrounds.

Overall, 85% of all apprenticeship participants were male and three-quarters had attended government schools. Almost two-thirds were below average in academic achievement but half had completed Year 12. Interestingly, 54% came from outside metropolitan areas, even though non-metropolitan youth accounted for 45% of the sample.

Traineeships

Only one characteristic strongly differentiates trainees from other young people in the survey. Indigenous young people's uptake of traineeships is 2.5 times the cohort rate. Other factors that are positively but weakly related to traineeship participation include having attended a government school, being from a non-metropolitan area and being a Year 12 non-completer.

Factors that are negatively, but weakly, associated with traineeships include having university-educated parents in professional occupations, being from the highest SES quartile, being in the highest achievement quartile and having completed Year 12 at school. One factor with a relatively strong relationship is language background. The uptake of traineeships by people with a language background other-than-English is one-third the average cohort rate.

Most trainee participants were school completers (71%) and were female (60%), but these figures are different from the comparable cohort proportions of 80% and 51% respectively. Although one-third of trainees had taken VET subjects at school (see Table 43), only one-quarter of all individuals reported doing these subjects, so VET-in-schools appears to be related positively to subsequent traineeship participation.

Non-apprenticeship VET Courses

The take up of non-apprenticeship VET courses is much the same across all characteristics. However, young women are more likely than young men to enrol in them. Those who took VET subjects while at school and young people whose parents were plant or machine operators were slightly more likely to take these courses than the cohort average.

A few factors were negatively but weakly related to the uptake of these programs. Young people whose parents were university educated and in professional occupations, who were in the highest achievement quartile, or who had attended independent schools were somewhat less likely than the cohort average to undertake these courses.

The relatively weak associations between individual characteristics and enrolment in non-apprenticeship VET courses indicate that these programs accommodate a broad spectrum of individuals. However, non-apprenticeship VET courses span a wide range, from AQF Level 1 certificates to advanced diplomas and associate degrees. It is useful to examine the characteristics of the young people who take lower certificate, higher certificate and diploma level qualifications in non-apprenticeship VET courses. These data are shown in Table 3. This table shows the distribution of young people of particular characteristics across the various AQF levels of non-apprenticeship VET courses (row percentages); an analogous table (Table 44 in Appendix 4) shows the composition of the various levels by individual characteristics (column percentages).

Table 3 Participation in levels of non-apprenticeship VET courses by selected characteristics (as a percentage of the young people with those characteristics)

		Diploma	Higher certificate	Lower certificate	Certificate level unknown	Total
<i>Sex</i>	Female	41	34	17	8	100
	Male	43	29	19	10	100
<i>Indigenous status</i>	Indigenous	29	33	21	17	100
	Non-indigenous	43	32	17	8	100
<i>Location of residence</i>	Metropolitan	48	31	14	7	100
	Regional	38	33	20	9	100
	Rural or remote	29	33	27	12	100
<i>Parent's occupation</i>	Professional or paraprofessional	49	28	15	8	100
	Manager or administrator	41	35	16	9	100
	Clerical or personal service	42	33	18	7	100
	Tradesperson	42	35	12	10	100
	Plant or machine operator	34	34	25	7	100
	Labourer	49	32	14	5	100
<i>Parent's education</i>	Did not complete secondary school	39	37	17	7	100
	Completed secondary school	43	32	18	8	100
	Trade, technical qualification	38	30	21	11	100
	Higher education qualification	46	35	15	4	100
<i>SES quartile</i>	High SES	47	28	16	10	100
	Mid-high SES	49	31	13	7	100
	Low-mid SES	40	34	16	10	100
	Low SES	43	34	17	6	100
<i>Language background</i>	English	41	33	18	9	100
	Other than English	54	32	8	6	100
<i>Country of Birth</i>	Australia	41	33	18	9	100
	OS English speaking	49	32	19	0	100
	OS non-English speaking	65	23	7	4	100
<i>Achievement quartile</i>	Lowest quartile	37	32	22	9	100
	Second quartile	41	32	19	8	100
	Third quartile	46	31	14	9	100
	Highest quartile	47	34	11	8	100
<i>School sector</i>	Government	38	34	20	9	100
	Catholic	54	28	10	9	100
	Independent	49	30	15	6	100
<i>Year level attained</i>	Year 10 or less	13	33	39	15	100
	Year 11	21	28	32	20	100
	Year 12	48	32	13	6	100
<i>VET in School</i>	No VET study	47	32	14	7	100
	Some VET study	45	33	16	7	100
<i>All participants</i>		42	32	18	9	100

Note: Row total may not sum to 100 due to rounding

Diploma and higher qualifications made up 42% of courses, higher certificates 32% and lower certificates 18%, with 9% of respondents not knowing the level of the qualification they were taking. There were some differences in the level of course taken by young people on a number of characteristics. The most obvious differences were between Year 12 completers and non-

completers, with the modal course level for non-completers being lower certificates, while almost half of all school completers enrolled in courses leading to diploma and higher qualifications. For Indigenous participants and for young people from rural and remote areas, higher certificates were the most common course level, followed by diploma level programs. Children of plant or machine operators were equally likely to enrol in higher certificate or diploma level programs, while for all other parental occupational groups, diploma programs were the most common.

On all other characteristics, diploma programs were the most common, but there were some differences in the proportions of enrolments by achievement quartile and SES quartile, with lower achievers and low SES individuals somewhat less likely than high achievers to commence diploma programs. Respondents from a non-English speaking background, although less likely than others to commence VET programs, were much more likely to enrol in diploma level courses.

Thus, while non-apprenticeship VET programs cater equitably to the needs of a diverse cohort, those needs are met differentially through the provision of programs at many levels.

The associations between individual characteristics and post-school pathways outlined in this section and presented in Table 1 are bivariate relationships. Some of these factors are likely to be correlated, and in order to assess those factors that, net of the influences of others, reveal the strongest relationships, it is necessary to undertake multivariate analysis. This is described below.

Education and Training Pathways for School Non-completers

Previous research has shown that early school leavers have a more difficult transition into the labour market than school completers (Lamb, Dwyer, & Wyn, 2000; McMillan & Marks, 2003). The question now is: 'To what extent does the VET pathway provide an avenue into the labour market for school non-completers?'

In order to explore VET as a pathway for school completers and non-completers,² participation in various post-school pathways for both groups has been tabulated against selected individual characteristics (see Table 41 for more details). Participation in post-school education and training is much more common among school completers than non-completers. Approximately 84% of completers participate in some form of post-school study, whereas just under 60% of non-completers embarked upon a post-school education and training program within the first few years after leaving school.

Apprenticeship commencements are much more common among school non-completers than completers on all characteristics tabulated. This is especially so for males who are much more likely than females to enter an apprenticeship. This pathway is particularly important for male non-completers, of whom almost 40% choose apprenticeships as their avenue into the labour market. The apprenticeship pathway is also important for young non-completers from middle SES families, who are more likely to take this path than are non-completers from either low or high SES families. Non-completers whose parents have either a technical or higher education qualification are also likely to take this route into the labour market.

Traineeships are an important pathway for school non-completers, although the effect is not as pronounced as it is for apprenticeships. Traineeships are a preferred path for young women rather than young men. Traineeships are also important for Indigenous Australians, whether they complete

² Information on the factors associated with school completion is presented Appendix 3. The characteristics most strongly associated with school non-completion are: being Indigenous; having been born in an English speaking country; having attended a government school; having no intention to undertake post-school education or training; and being in a lower achievement quartile. Other factors also associated with school non-completion are: being male; coming from a non-metropolitan location; having parents in manual occupations; and having parents with other than a higher education.

school or not. One in five Indigenous school completers and more than a quarter of Indigenous non-completers enter a traineeship.

Overall participation in non-apprenticeship VET courses does not vary according to whether Year 12 was completed or not, but some variation is observed when participation is disaggregated by gender. Female non-completers are slightly more likely to enrol in a non-apprenticeship course than female completers, but the situation is reversed for males. This is likely to be a result of the much greater probability of male non-completers taking an apprenticeship pathway.

MULTIVARIATE ANALYSIS OF POST-SCHOOL PATHWAYS

The bivariate tabulations above show that many factors are associated with the alternative post-school pathways available to young people. Because of correlations among the characteristics of survey respondents, it is likely that effects attributed to one characteristic may be the result of a correlated factor. In order to separate the effects of related influences, it is necessary to undertake multivariate analyses.

Although the focus of this report is on VET pathways, it is necessary to retain both the no post-school study option and higher education study in the analyses because the selection of a particular post-school pathway is a matter of choice among the full range of options open to young people. Excluding these alternatives may bias the estimates of parameters reflecting preferences for the other choices.

The central concern in this chapter is with the identification of demographic and school factors associated with participation in forms of post-school education and training. Because the outcome variable has multiple categories – that is either participation in post-school study or not and then commencement of one of several options – multinomial logistic regression is able to provide answers to the research questions. This method makes relatively few assumptions about the distributional properties of the data, and since many variables of interest are categorical, it is the most robust of the methods available. The parameters of the multivariate model reveal the effects of the factors, net of other influences, associated with participation in the various education and training pathways compared with doing no further formal study. The methods are detailed in Appendix 1.

Influences on Participation in Post-school Education and Training Pathways

The model was developed based upon the characteristics presented in Table 1. However, it was extended to include some continuous variables that could not be summarised in that table. For example, rather than model achievement by assigning individuals to groups based on their achievement quartile, continuous variables for Year 9 reading and mathematics achievement were included. These variables contribute more information to the model than do the categorical variables based upon them. Standardised scores on these two variables were used in the regression models to facilitate interpretation of their parameters. One further factor was added to the model, namely post-school study intention, because the analyses reported by Khoo and Ainley (2005) showed that this is an important influence on subsequent participation.

The model was developed in stages. This was done because some characteristics are closely related and their joint inclusion may have led to model instability. For example, occupational groups are based in part on required skill levels, and these are related to educational attainment. In addition, SES was included in an intermediate model, and was introduced separately from occupational groupings because the SES indicator is based on occupational status. It is interesting to note, in contrast to the bivariate tabulations, that the continuous measure of SES was not significant in any of the models in which it was tested, and it was dropped from the final models. From this observation, it can be concluded that SES is associated with other variables, such as parental occupation and education, that have greater explanatory power than SES. In order to generate a

parsimonious model, variables whose parameters were non-significant were removed. The variables included in the final model are shown in Table 4.

In logistic regression, one level of each categorical variable, whether dependent or independent, becomes the reference category. Undertaking no post-school education and training was the reference outcome category. The reference categories for independent variables were: being female, non-Indigenous, from a metropolitan area, whose parent was a professional with a university education, who was born in an English speaking country (including Australia), having attended a government school, expressed no intention to undertake post-school study and who did not complete Year 12. The variables that were included in the final model are listed in Table 4. The net influence of a characteristic, with the effects of other variables controlled, is represented by a parameter for that characteristic. The parameter of most interest in logistic regression models is the odds of a person of the corresponding characteristic participating in some form of post-school education and training relative to a person from the reference category, all other things being equal. Where the odds are less than 1.0, a person is less likely than the reference group to participate. Where the odds are greater than 1.0, that person is more likely than someone from the reference category to undertake a post-school program. These odds are shown in Table 4.

The model is not comprehensive. The key purpose of the study was to examine how the characteristics of individuals and their school experience and attainment influenced their choices among post-school pathways. Thus, the model developed seeks to show how these factors influence choice. Variables have been included in the model where it was believed, on the basis of the earlier bivariate summaries and the literature in the field, they would contribute to an explanation of the patterns of participation in the various forms of post-school education and training. An on-balance judgement was made between comprehensiveness and explanatory power on one hand and parsimony and model stability on the other.

Even though almost 7000 people responded to the 2001 survey, some data were missing. Indeed, on a variable of considerable interest, parent's educational attainment, data were missing for 24% of cases. Complete data were available for the multinomial logistic regression analysis for approximately 67% of cases. The number of cases available for analysis constrains the complexity of the model that can be tested. How well the model reflects observed course participation is reflected in Nagelkerke's pseudo multiple R^2 , which was 42.6%. Given its constraints, the model accounts reasonably well for the observed pattern of post-school program participation.

Pathway Profiles

The results of the analysis can be interpreted by inspection of the columns of Table 4 for factors associated with different forms of post-school education and training compared with no post-school study. Inspecting the rows reveals any differential influences of individual characteristics on participation in the various post-school study options.

Table 4 Odds ratios for participation in post-school education and training pathways compared with no participation in education and training after leaving school

	Type of post-school program			
	Apprenticeship	Traineeship	Non-apprentice VET course	University course
<i>Sex</i> (Ref: Female)				
Male	5.22**	0.57**	0.63**	0.57**
<i>Indigenous status</i> (Ref: Non-indigenous)				
Indigenous	2.04	2.65*	0.96	1.73
<i>Location</i> (Ref: Metropolitan)				
Regional	1.53**	1.21	0.71**	0.80
Rural	1.21	1.60**	0.91	0.94
<i>Birth country</i> (Ref: English-speaking)				
Non-English speaking	0.10**	0.51	1.02	2.29**
<i>Parent occupation</i> (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 / operator	0.81	1.17	1.15	0.64*
<i>Parent education</i> (Ref: University)				
Did not complete 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**
<i>School sector</i> (Ref: Government)				
Catholic	1.33	1.07	1.45*	2.24**
Independent	1.05	1.01	1.56*	2.58**
<i>PS study intention</i> (Ref: No PS study intent)				
Post-school study intention	1.43**	1.27	1.59**	3.50**
<i>School completion</i> (Ref: Did not complete Year 12)				
Completed Year 12	0.74	1.39*	2.79**	32.38**
<i>Year 9 achievement</i>				
Reading	0.79**	0.89	0.95	1.32**
Mathematics	1.19	1.12	0.98	1.85**
<i>Intercept</i> ^a	-1.74** (0.38)	-0.72 (0.37)	-0.43 (0.32)	-4.97** (0.44)

Notes: Nagelkerke's $R^2 = 42.6\%$ Non-significant parameters ($p > 0.10$) are shown in grey text.Marginally significant parameters ($0.05 < p < 0.10$) are shown in black text.Significant parameters ($0.01 < p < 0.05$) are shown with a single *.Highly significant parameters ($p < 0.01$) are shown with a double *.^a The intercept parameter is an unstandardised figure. Its standard error is shown in parentheses.

Apprenticeships

Some of the factors that, from the bivariate tabulations, were associated with participation in apprenticeships have been confirmed in the multivariate analysis. Being male is the factor with the strongest positive association of undertaking an apprenticeship rather than doing no post-school study, while being from a non-English speaking background has the strongest negative association.

Coming from a non-metropolitan location was associated positively with apprenticeship commencement rather than taking no post-school education or training.

The influences of some factors appear to be different in the multivariate analysis to the earlier bivariate tabulations. The bivariate analyses showed that a greater proportion of young people who had attended government rather than non-government schools entered apprenticeships. However, in the multivariate analysis the likelihood of former Catholic and independent school students entering apprenticeships rather than doing no post-school study is statistically no different from that of government school students. The crucial difference in the multivariate analyses is that the effect of school sector is net of other influences and of entering an apprenticeship rather than doing no education or training. Relatively few former Catholic and independent school students cease their education after leaving school.

Another factor to show a similar change is parental education. Under the multivariate analysis, compared with children of university educated parents, the children of parents who had either not completed secondary school or who had done no post-school study were less likely to enter an apprenticeship rather than doing no post-school study.

In the bivariate analyses, achievement was based on the combined literacy and numeracy tests. In the multivariate analyses, these scores were modelled separately, and net of other factors, lower than average literacy performance was associated with apprenticeship participation rather than no post-school study, but a higher than average numeracy score was related to apprenticeship commencement.

In this analysis, no significant effect was apparent for parental occupation. In the bivariate tabulations above, a higher proportion of children of tradespersons entered apprenticeships compared with the cohort average (18% compared with 11%). However, the above tabulations did not take into account the confounding effects of other factors, including parents' education, which are related to their occupational categories. The present finding also stands in contrast to that reported by Ainley and Corrigan (2005) who found that young people whose fathers had a technical qualification were more likely to have commenced an Australian Apprenticeship. However, the analyses differ in several important respects.³

Traineeships

One factor that showed a similar and stronger influence on traineeship participation was Indigenous status. The odds ratio for Indigenous young Australians commencing traineeships is 2.65. Young people from rural locations were more likely than those from metropolitan ones to undertake traineeships rather than no post-school study. Sex is another factor whose influence was confirmed in the multivariate analysis, with males being less likely, with odds of 0.57, than females to undertake traineeships rather than doing no post-school study.

³ The Ainley and Corrigan analysis compared Australian Apprenticeships against all other outcomes combined, while this one contrasted apprenticeships with no post-school study. In the former analysis, combining groups has led to larger numbers within groups and therefore greater statistical significance for a given effect size. In this analysis, the estimated odds that children of tradespersons will commence an apprenticeship were greater than one (1.27), but in this case, the factor was not statistically significant. Despite the non-significance of this parameter, the effect remains of interest for two related reasons. First, young people whose parents had less than a university education are disadvantaged in access to all education and training pathways, as indicated by the odds ratios being less than 1.0 for all other categories of parental education and for all pathways. Second, many of these odds ratios are highly significant. The odds ratio for having a parent in a trade is greater than 1.0, albeit non-significant, suggesting that this influence substantially counteracts the influence of having a parent with other than a university education, but only for the apprenticeship pathway.

Some of the factors that are different in the multivariate compared with the bivariate analyses include school sector. Parent's occupation was found not to exert a significant influence, net of other factors, but parent's education did. Young people whose parents were not university educated were less likely than the children of university educated parents to enter traineeships rather than to take no post-school study.

Non-apprenticeship VET

The bivariate analyses showed that few factors influenced participation in non-apprenticeship VET courses. When the influences of factors were isolated in the multivariate model, being male and coming from a regional location, compared with being female and from metropolitan locations, both had negative relationships with enrolling in non-apprenticeship VET courses rather than doing no post-school study.

Former students of Catholic and independent schools were significantly more likely than former government school students to enrol in non-apprenticeship courses rather than doing no post-school study. The multivariate analysis shows that, net of other factors, school completion is associated positively and significantly with non-apprenticeship commencement compared with no post-school study.

The occupational status of young people's parents was found not to influence enrolment in these courses, while parent's education did. Young people whose parents were university qualified were more likely than all others to undertake non-apprenticeship courses rather than do no post-school study.

School achievement in literacy and numeracy were found not to be related to the decision to commence non-apprenticeship courses relative to doing no post-school study, other factors equal.

University Courses

For completers, commencements of university courses were included in the multivariate analyses. Many factors were associated with university course commencement compared with no post-school study. None of these factors is surprising. Both school completion and high early secondary achievement are associated positively with university enrolment. Having a non-English speaking background is associated positively and significantly with university commencement rather than doing no post-school study. However, being male and coming from a regional or rural location were associated negatively with university entrance. Young people whose parents had other than a university education were less likely than those with university educated parents to enter higher education. Having parents in trades or labouring occupations were also, and independently, associated with a reduced likelihood of enrolling in a university course.

Influences on Post-school Pathways

Some of the factors modelled in the multinomial logistic regression analysis have pervasive influences over participation in all post-school pathways, while the analysis revealed that others operate differently between post-school alternatives. These findings are summarised briefly below.

Sex: Sex is a factor with differential influences on various post-school pathways. Males are more likely than females to enter apprenticeships, but are less likely than females to commence traineeships, non-apprenticeship VET courses or higher education programs.

Indigenous status: For Indigenous young people, traineeships are a significant pathway from school to work. For other pathways, the odds associated with being an Indigenous Australian are non-significant. However, in a multivariate analysis, the effects are net of all others. In a separate bivariate tabulation (see Table 5), it was shown that the parents of Indigenous young people were less likely to have completed secondary school or to have gained a higher education qualification.

Part of the relative position of Indigenous young people can be attributed to their parents' educational attainment. Thus, in considering the situation of Indigenous young people, their standing on other factors needs to be taken into account. It is likely that, in the multivariate modelling, Indigenous disadvantage in access to post-school education and training, as seen in their over-representation in no post-school study and their under-representation at university derives largely from background characteristics such as parental education and that Indigenous status, of itself, is non-significant for pathways other than traineeships.

Table 5 Parents' educational attainment and Indigenous status

	N	Parents' educational attainment				Total (%)
		Incomplete secondary (%)	Completed secondary (%)	Technical qualification (%)	Higher education (%)	
Non-Indigenous	4970	23	22	20	35	100
Indigenous	97	39	22	24	16	100

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

Location: Young people from non-metropolitan locations are less likely to enrol in a non-apprenticeship VET or university course but those from regional centres are more likely to enter apprenticeships and those from rural and remote locations are more likely to enter traineeships. These outcomes may reflect the study and job opportunities open to young people outside metropolitan areas. Most non-apprenticeship VET institutes, and all but a few universities, are located in large population centres, so attending these institutions requires rural or remote students to travel or leave home. This places a financial barrier in the way of participation. While apprenticeships are available in small to medium enterprises, many traditional apprenticeships are available in medium to large enterprises, and these tend to be located in larger population centres. Thus, apprenticeships seem to be relatively more available to young people from regional centres than they are to those from more remote locations, and may be preferred as an alternative to other pathways that involve relocation. Traineeships, which are most common in more dispersed industries such as retailing, may be more commonly available in rural and remote locations relative to other options. While most non-metropolitan young people continue to reside in the areas where they were first contacted for the LSAY program, those who do move report that education and training are the most common activities that follow a movement to a metropolitan location (Hillman & Rothman, 2007, pp. 12 & 17).

Language background: Being born in a country where English is not the dominant language is associated with a much lower likelihood of entering an apprenticeship and a much higher likelihood of enrolling in a university course compared with people born in an English speaking country. Although the influence of coming from a non-English speaking country is statistically very strong, this variable subsumes many subtleties, including the differences among first language spoken. Marjoribanks (2004) elaborated many of these nuances in showing that family SES, gender, region of birth, and aspiration for post-school study interacted in complex ways to influence educational attainment. The effect of being born in a non-English speaking country, although statistically strong, is not homogeneous.

SES factors: Compared with young people whose parents have a higher education qualification, all other respondents were less likely to pursue any of the post-school education and training options rather than doing no post-school study. This effect is most pronounced for university study, is strong for non-apprenticeship VET courses, less stark for apprenticeships, and, in relation to traineeships, only significant for those young people whose parents did not complete secondary school. A relationship between the level of parental education and access to post-school education and training pathways is evident. Those young people whose parents had the lowest levels of education had the least likelihood of participating in any of the forms of post-school education, and as the level of parental education increased, the degree of disadvantage relative to university educated parents declined. This finding suggests a strong intergenerational transfer of educational capital.

School completion: School completion operates differentially on the various post-school pathways. For university entry, it is generally a requirement. It is strongly facilitative of non-apprenticeship VET course commencement and is associated significantly with entering traineeships. However, school completers are less likely than early leavers to undertake apprenticeships. In this sense, apprenticeships appear to provide a particularly clear pathway into the labour market for school non-completers.

Early academic achievement: Standardised reading literacy and numeracy scores were used in this analysis. The odds associated with scores one standard deviation from the cohort average are not significantly different from 1.0, so the likelihood of commencing a traineeship or enrolling in a non-apprenticeship VET course is not influenced by early secondary achievement in the two domains tested. However, their influences on apprenticeship commencement are interesting. Apprentices have a significantly low Year 9 reading scores but their Year 9 numeracy scores were above average, the latter effect being marginally significant.

SUMMARY

By age 20:

- 80% of young people commence some formal post-school education and training.
- Approximately 42% commence a VET course and 41% commence a university course.
- In the case of VET participants, 12% of young people undertake apprenticeships, 10% enter traineeships and 24% enrol in non-apprenticeship VET qualifications.
- Apprenticeships are taken predominantly by males (85%) who did not complete Year 12.
- Most traineeship participants are female (60%).
- Traineeships are an important pathway for Indigenous young people who are 2.5 times more likely than non-Indigenous youth to pursue this option.
- Non-apprenticeship qualifications are characterised by the diversity of backgrounds of their participants. The programs themselves are diverse in terms of their AQF levels. Over 40% of non-apprenticeship VET programs are at the diploma level or above, 30% are higher certificates, and 20% lower level certificates. Almost one person in 10 participating in non-apprenticeship VET programs does not know the level of his/her qualification.
- Although non-metropolitan youth generally have more limited access to post-school education and training programs, apprenticeships are an important pathway for regional young people and traineeships for those from rural and remote locations.
- Parental education exerts a strong influence on young people's post-school pathways. Young people with university educated parents are much more likely than others to undertake some form of post-school study, and that is likely to be a higher education course.
- Apprenticeship participation substantially counteracts the disadvantage of not having university-educated parents for children of tradespersons.

3. COMPLETION OF VET PROGRAMS

The previous chapter was concerned with identifying those factors associated with commencement of VET programs, namely apprenticeships, traineeships and non-apprenticeship courses. In this chapter, the focus is on the completion rates for these programs, the characteristics of individuals and course-related factors associated with completion, and the reasons for non-completion.

WHAT PROPORTION OF YOUNG PEOPLE COMPLETE VET PROGRAMS?

Table 6 shows the completion status (completed, continuing, deferred or withdrawn) by 2004 of courses commenced by 2001. The table shows completion status for individuals' first courses, then for any subsequent courses, and finally for participation in up to four programs. Relatively few people commenced a third or fourth VET program. Approximately 83% of young people who commenced apprenticeships or traineeships have either completed them or are continuing with them. For later commencements, there is a smaller completion rate and, as might be expected, a greater rate of continuation. For apprenticeships and traineeships relatively few deferrals occurred. Among non-apprenticeship VET programs, just less than three-quarters of all commencers persisted in their courses, with a little over one-quarter having chosen to withdraw from or defer their studies. People shown as deferrals have deferred from courses commenced by 2001 and had not resumed them by 2004.

Table 6 Completion status by 2004 of VET courses commenced by 2001

	First course		Subsequent courses		First or subsequent courses	
	N	%	N	%	N	%
<i>Apprenticeship</i>						
Completed	345	79	45	69	390	78
Continuing	14	3	10	15	24	5
Deferred	4	1	0	0	4	1
Withdrawn	71	16	11	16	82	16
Total	435	100	66	100	501	100
<i>Traineeship</i>						
Completed	313	84	93	76	406	82
Continuing	1	<1	3	3	4	1
Deferred	3	1	2	1	5	1
Withdrawn	56	15	24	19	80	16
Total	373	100	122	100	496	100
<i>Non-apprenticeship VET</i>						
Completed	737	73	263	71	1000	72
Continuing	11	1	1	<1	12	1
Deferred	56	6	23	6	79	6
Withdrawn	203	20	86	23	290	21
Total	1007	100	373	100	1380	100
<i>All VET</i>						
Completed	1395	77	402	72	1797	76
Continuing	26	1	14	3	40	2
Deferred	63	4	24	4	88	4
Withdrawn	331	18	121	22	451	19
Total	1815	100	561	100	2376	100

The expected completion rate for Australian Apprenticeships, computed as the sum of reported completers plus those continuing on the assumption that they will all complete, is 83%. This figure is higher than those reported from the national apprentice and trainee contracts of training data collection managed by NCVER. For example, Ball and John (2005, p. 10) reported completion rates of approximately 70% for apprenticeships commenced in the mid to late 1990s – the period of most relevance to the LSAY Y95 cohort. Karmel (2007, pp. 16-17) reported even lower rates of completion for 2002 to 2003, but also noted the under-reporting of completions in administrative data sources. Clearly, completion rates have fluctuated substantially over time.

In part, the discrepancy between LSAY reports of completion and those derived from administrative data sources might be explained by an under-reporting by LSAY participants of commencements that lasted only a short time. Ball and John (2005, p. 10) found that approximately 20% of Australian Apprenticeship commencers withdrew from their programs within six months and that almost three-quarters of all non-completers had withdrawn in the first year. Since LSAY interviews are annual, it is possible that some survey participants may have neglected to report programs that were commenced but discontinued after a short time. Ainley and Corrigan (2005, pp. 26-27), who reported a 74% apprenticeship completion rate to 2003 (with a further 10% continuing), also noted the possibilities that individuals may complete their training to their own satisfaction, but not achieve certification, and that there may be a degree of attrition bias in LSAY not fully compensated by sample weights. These possibilities would lead to an overestimation of completion compared with estimates based on the NCVER administrative data. The estimate to 2004 is 78% completion with a further 5% continuing. If the current attrition rate is applied to those who are continuing, it might be expected that the final completion rate would be approximately 82%.

Caution is urged in interpreting completion rates from any source. LSAY focuses just on young people, whereas administrative data are a census of all participants, but it is clear that there are shortcomings in that source with acknowledged under-reporting. Similarly, it seems likely that LSAY participant responses generate an over-estimation of completion. A reasonable but low estimate of the apprenticeship completion rate is 70% (Ball & John, 2005) and a reasonable but high estimate is 82%, suggesting that a figure between these two will better reflect reality.

Traineeships, which generally are of shorter duration than apprenticeships, have a slightly higher completion rate (82%) than apprenticeships. They also have a lower proportion of continuing programs, but the same overall attrition rate, suggesting that their final completion rate, based on the self-report information from the LSAY interviews, will be approximately 83%.

The completion rate from non-apprenticeship courses, at 72%, is lower than the rate for Australian Apprenticeships. The attrition from non-apprenticeship VET programs is 27%, suggesting that the final completion rate from these programs will be approximately 73%.

The comments made above in relation to the under- and over-estimation of completion rates for apprenticeships apply equally to traineeship and non-apprenticeship data sources.

FACTORS INFLUENCING PERSISTENCE IN VET PROGRAMS

Only a very small proportion, less than 1%, of those LSAY respondents who commenced Australian Apprenticeships deferred their training, and relatively few—less than 5%—were still undertaking that training by the age of 23 years. The great majority have completed it, while 16% have withdrawn. Among non-apprenticeship course participants, few people are continuing (less than 1%), but almost 6% have deferred. For the purposes of subsequent analyses, rather than focus on all four categories of completion status, it is convenient to dichotomise this into those who persisted and those who did not persist with their training. By adding continuing enrollees to those who have completed to form a measure of persistence, it is likely that some currently enrolled individuals will later withdraw, and therefore completion may be overestimated. However, by

combining deferred individuals with those who have withdrawn, non-persistence may be overstated, as some currently deferred individuals will no doubt return to their programs and complete them. On balance, it seems likely that these two sources of mis-estimation will cancel each other, and that the estimates of persistence are likely to be reasonable, especially given the small proportions of people in the continuing and deferred categories in the year 2004.

Individual Characteristics and Persistence

Although completion rates of VET programs, especially Australian Apprenticeships, are reasonably high, factors associated with persistence are of interest to policy makers and practitioners. In this section, persistence is based on the proportion of commencers who either completed their course or who remain enrolled. Factors that might operate at the individual level have been divided into the background characteristics of individuals (shown in Table 7) and those that are school-related factors (shown in Table 8). These tables show the number of young people in each category who commenced each type of VET program and the proportion of them who persisted.

In contrast to the relationships between individual characteristics and course commencement (see Table 1), individual characteristics exert quite weak influences on persistence. There are some exceptions to this generalisation. Females' persistence in apprenticeships (60%) is lower than that of males (87%). Those whose parents have higher education qualifications and young people from low SES families are less likely to persist in apprenticeships than others. Indigenous young people are more likely to persist in Australian Apprenticeships, but less likely to persist in non-apprenticeship courses than non-Indigenous young people. Young people from rural and remote locations are more likely than their metropolitan peers to persist in all forms of VET, with the exception of regionally based young people in traineeships. Individuals who were born in non-English speaking countries are less likely than others to persist in VET programs, but the numbers of these individuals in Australian Apprenticeships are low.

Some of the apparent influences may not be attributable directly to the observed attribute. For example, females' lower persistence in apprenticeships may have more to do with the fields of training that they pursue or even the conditions that prevail in their workplaces. The lower persistence of females may be a matter of concern, especially if young women were leaving fields of training that are traditionally 'male-typed', such as engineering or building. Alternatively, they may have entered fields that have low employee retention rates and that, too, may be a matter of some concern. In order to investigate this attrition, the fields of training commenced by the young women who subsequently left and their reasons for leaving were investigated.

Of the young women who commenced apprenticeships and then left, one had been in an enterprise that closed. Twenty-eight had left by choice, and 22 of these had been in the food and hospitality group and two had been in the management and commerce category. Food and hospitality has a rather low persistence rate of 67% and commerce 60%. The relatively low persistence of female apprentices therefore appears to be related to the fields of training that they entered. Their reasons for leaving were similar to the reasons given by most apprentices – with interpersonal conflict at work and dislike for the type of work being relatively common reasons for leaving.

Table 7 Relationship between individual background factors and program persistence by type of VET program

Background factor	Apprenticeship		Traineeship		Non-app VET		All VET	
	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)
<i>Sex</i>								
Female	70	60	281	84	799	73	1150	75
Male	429	87	213	81	579	74	1221	80
<i>Indigenous status</i>								
Non-Indigenous	460	82	443	82	1263	74	2166	77
Indigenous	12	92	25	100	29	59	66	80
<i>Location of residence</i>								
Metropolitan	237	80	196	81	825	71	1258	74
Regional	147	83	157	80	271	77	575	79
Rural or remote	115	89	141	88	284	77	540	82
<i>Parent occupation</i>								
Prof/Managerial	152	86	163	84	516	73	831	77
Clerical	69	84	91	89	221	70	381	77
Trades	133	84	92	78	244	72	469	77
Labour	62	76	88	88	213	78	363	80
<i>Parent education</i>								
Incomplete Yr 12	79	85	94	85	242	74	415	78
Completed Yr 12	75	87	100	86	254	73	429	78
Trade qualification	106	82	78	82	218	76	402	79
Higher education	85	71	101	85	295	73	481	75
<i>SES quartile</i>								
High SES	24	88	36	81	131	76	191	79
Mid-high SES	75	88	86	81	291	70	452	75
Low-mid SES	212	86	185	83	487	72	884	78
Low SES	124	72	141	86	335	76	600	77
<i>Language of birth country</i>								
English	471	83	450	83	1219	74	2140	78
Not English	11	64	15	87	118	62	144	65
<i>All</i>	499	83	494	83	1378	73	2371	77

Notes: Columns labelled 'N' show the number of commencements in each category and Persistence shows the percentage of them who continued in the program. Percentages do not sum across rows or columns. The rightmost column and the lowest row provide summaries of persistence by individual contextual factors and by course type respectively. The total N in this table (2371) differs from Table 6 (2376) because of missing data on some socio-demographic variables, most commonly parental education.

As seen in relation to individual characteristics (Table 7), there are generally weak relationships between individuals' school-related factors and their persistence in the types of training that they undertake (see Table 8). Individuals who attended independent schools are less likely than others to persist in apprenticeships, but slightly more likely to persist in traineeships. Those who did some VET in school have higher persistence in subsequent apprenticeships (88%) compared with those who did no VET in school (77%). An inverse but smaller effect of VET in school is apparent for young people who undertook traineeships. School completion has no influence on persistence in apprenticeships, a small positive influence on persistence in traineeships, but a negative relationship with persistence in non-apprenticeship VET courses.

Table 8 Relationship between school-related factors and program persistence by type of VET program

	Apprenticeship		Traineeship		Non-app VET		All VET	
	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)
<i>Achievement quartile</i>								
Lowest	182	85	151	83	458	76	791	79
Second	131	82	136	82	419	73	686	76
Third	112	80	133	85	295	71	540	76
Highest	76	84	74	78	195	73	345	77
<i>Post-school study intent</i>								
No post-school study intent	93	88	70	84	174	76	337	81
Post-school study Intent	407	82	425	82	1205	73	2037	77
<i>School sector</i>								
Government	393	84	392	82	995	73	1780	77
Catholic	72	83	60	82	241	75	373	78
Independent	35	71	41	93	145	72	221	76
<i>School completion</i>								
Non-completer	226	83	135	80	241	78	602	80
Completer	274	83	359	84	1138	72	1771	76
<i>VET in School</i>								
No VETiS	217	77	279	86	854	73	1350	76
Some VETiS	136	88	127	82	378	73	641	78
<i>All</i>	499	83	494	83	1378	73	2371	77

Notes: Columns labelled 'N' show the number of commencements in each category and Persistence shows the percentage of them who continued in the program. Percentages do not sum across rows or columns. The rightmost column and the lowest row provide summaries of persistence by individual characteristics and by course type respectively.

Persistence and Field of Study

VET programs may be characterised by the type of course, the level of the course and the field of study or training. In this analysis, 12 fields of study are used. The fields of study and the number of commencements in these areas by course type are shown in Table 9.

Notable in the table is the variation in commencements by field of study and course type. There are very few Australian Apprenticeships in the natural and physical sciences, information technology, education, society and culture, creative arts and mixed field categories. Among the Y95 cohort, there are very few commencements in mixed field programs, in education or in the natural and physical sciences. VET education programs — for example, the Certificate IV in Assessment and Workplace Training — tend to be taken by older individuals who are already in or plan to undertake training roles within enterprises.

Persistence varies by both field of study and program type (see Table 9). Mixed field courses had the highest persistence, but this was based on only eight commencements. 'Creative arts' was another field of study with high persistence. Both are non-apprenticeship courses only, which is an interesting finding given that non-apprenticeship courses overall have a 10 percentage point lower persistence rate compared with Australian Apprenticeships. Building, education, and society and culture non-apprenticeship courses have persistence rates about 10 percentage points lower than average for this course type. In contrast, building apprenticeships have a persistence rate of a little over 90%. Traineeships in the agriculture and environment field of study also have persistence rates in excess of 90%. Some of these differences may be explained by the levels of courses in these fields, and by implication the length of these programs. The reasons given by those who withdraw from their programs may also shed some light on these differences.

Table 9 Program commencements and persistence by field of study and program type

Field of study	Apprenticeships		Traineeships		Non-app VET		All VET	
	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)
Natural & physical sciences	0	na	0	na	32	75	32	75
Information technology	0	na	6	100	131	68	137	69
Engineering & related tech	200	87	47	70	100	76	347	82
Architecture & building	161	91	10	70	97	61	268	80
Agriculture & environment	21	81	41	90	57	79	119	83
Health	4	na	42	79	162	74	208	74
Education	0	na	7	100	14	64	21	76
Management & commerce	5	60	182	91	348	74	535	79
Society & culture	1	na	21	76	72	64	94	66
Creative arts	0	na	0	na	110	87	110	87
Food & hospitality	108	67	135	77	219	73	462	73
Mixed field	0	na	0	na	8	100	8	100
<i>All fields of study</i>	<i>500</i>	<i>83</i>	<i>491</i>	<i>83</i>	<i>1350</i>	<i>73</i>	<i>2341</i>	<i>77</i>

Notes: Columns labelled 'N' show the number of commencements in each category and Persistence shows the percentage of them who continued in the program. Percentages do not sum across rows or columns. The food and hospitality category also includes retail and personal services classifications. The mixed field group includes prevocational and basic skills courses.

Persistence and AQF Program Level

Past research has reported an inverse relationship between program length and persistence (Foyster *et al.*, 2000). In this study of the Y95 LSAY cohort, overall completion rates for VET courses and for non-apprenticeship VET courses seem to support this finding. In particular, persistence among diploma (and higher) enrollees was a rather low 65%. However, a more complex picture emerges when persistence is examined for different program types. Among Australian Apprenticeships, persistence is greater for higher certificates than for lower certificates (see Table 10). This more complex relationship is consistent with the findings reported by Ball and John (2005, pp. 17-18).

Table 10 Program commencements and persistence by program level

Program level	Apprenticeship		Traineeship		Non-app VET		All VET	
	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)	N	Persistence (%)
Diploma	0	na	0	na	590	65	590	65
Higher certificate	156	86	189	93	448	78	793	83
Lower certificate	209	79	234	79	217	83	660	81
Certificate level unknown	69	80	39	72	125	79	233	78
Qualification unknown	67	88	32	69	0	na	99	82
<i>All qualifications</i>	<i>501</i>	<i>83</i>	<i>494</i>	<i>83</i>	<i>1380</i>	<i>73</i>	<i>2375</i>	<i>77</i>

Notes: Columns labelled 'N' show the number of commencements in each category and Persistence shows the percentage of them who continued in the program. Percentages do not sum across rows or columns.

An interesting observation from the LSAY data is that about 27% of apprentices and 14% of trainees either did not know what qualification they would receive on completion or, if they knew it was a certificate program, did not know the level of that certificate. For those taking non-apprenticeship VET courses, about 9% did not know the level of their certificate courses. This lack of knowledge about their training programs does not seem to have influenced persistence for apprentices, but trainees who were not aware of the level of their qualification had a substantially lower persistence rate than those who did know. The modal year for commencements of VET

programs for this cohort was 1999. Apprenticeship commencements had been relatively stable during the late 1990s, but rapid growth had occurred in traineeship commencements during that period (Brooks, 2004, p. 9). This suggests that many employers were new to this form of training and this may be related both to difficulties in interacting with the system and to trainees' lack of awareness of this aspect of their training, leading in turn to lower persistence. Certainly at about that time ANTA had recognised that the VET system was not well understood by key stakeholders (ANTA, 2000).

REASONS FOR NON-CONTINUATION OF VET PROGRAMS

Survey participants who had withdrawn from a program were offered a range of possible reasons and asked to indicate which applied to them. They could nominate as many as they wished. Then they were asked to indicate the main reason for withdrawal. Response options differed between Australian Apprenticeships and non-apprenticeship VET courses, so these are analysed separately.

Among Australian Apprenticeship commencements, approximately 17% discontinued their programs, and of those taking non-apprenticeship VET courses, approximately 27% deferred or withdrew from their courses. Approximately 70% of those who withdrew provided reasons for their decisions. Given the small numbers who provided reasons for their choices, it is not possible to undertake analyses for different individual characteristics or fields of study.

Reasons for Non-continuation among Apprentices and Trainees

Of the 87 apprentices who discontinued their contracts of training, four stopped because the enterprises in which they worked closed. Of the remaining 83 individuals, 59 provided reasons for their decisions. On average, they gave three reasons. The extent to which each reason influenced apprentices' choices is shown in Table 11 as a share of the total number of reasons endorsed.

Among apprentices, not liking the type of work was the most cited reason for discontinuation. Interpersonal conflict in the workplace and concern about job prospects in the industry were also endorsed more often than other possible explanations. Experiencing study difficulties or transport problems were not major concerns for the young people.

Twelve trainees reported that they ceased their training because of redundancy or enterprise failure. Of the other 72 trainees who discontinued, 51 provided reasons for their decision. They too endorsed around three reasons each for their choices. Trainees expressed a somewhat different profile of reasons for discontinuation compared with apprentices. Concern about job prospects in the industry was the most commonly cited reason for withdrawal, but low pay was also a significant concern. As for apprentices, study difficulties or problems with transport had little influence on decisions to discontinue contracts of training. Interpersonal workplace conflict was of less concern to trainees than it was to apprentices. The main reasons are shown in Table 12.

Among apprentices who discontinued their contracts of training, several reasons appear to have dominated their decisions. Interpersonal conflict in the workplace and not liking the type of work were prominent. 'Health and personal problems' was also cited frequently as a factor in the decision to stop their programs. Low pay was not a major factor, but in a relatively buoyant labour market, it appears that it was easy for these young people to leave their training for a 'better' job.

Trainees who discontinued their training programs expressed less clear-cut reasons for their decisions. The rather general category 'health and personal problems' was the most commonly cited reason. Being offered a 'better' job was a frequently cited reason while dissatisfaction with off-the-job training was also a significant factor.

Table 11 Reasons for non-continuation given by apprentices and trainees

Reason suggested during interview	Relative influence (%) on discontinuation by	
	Apprentices	Trainees
Someone offered you a better job	11	11
The pay was too low	9	17
You were not happy with the job prospects in the industry	13	18
You basically did not like the type of work	14	9
You did not get along with your boss or other people at work	14	7
You were not happy with the on-the-job training	8	11
You were not happy with the off-the-job training	11	11
You found the study too difficult	5	1
You had problems with transport or access	4	6
Because of health or personal problems	12	9
<i>All reasons</i>	<i>100</i>	<i>100</i>

Table 12 Main reason for non-continuation by apprentices and trainees

Reason suggested during interview	Percentage giving reason for discontinuation	
	Apprentices	Trainees
Someone offered you a better job	12	16
The pay was too low	7	6
You were not happy with the job prospects in the industry	3	6
You basically did not like the type of work	20	12
You did not get along with your boss or other people at work	22	8
You were not happy with the on-the-job training	3	4
You were not happy with the off-the-job training	0	14
You found the study too difficult	2	0
You had problems with transport or access	3	4
Because of health or personal problems	20	18
Some other reason	7	14
<i>All reasons</i>	<i>100</i>	<i>100</i>

Reasons for Non-continuation among Non-apprenticeship VET Participants

The possible reasons for discontinuing a non-apprenticeship VET course are shown in Table 13. The table shows the relative frequency of each reason as a percentage of the all reasons given. Of cohort members who commenced non-apprenticeship courses, 27% discontinued that study. Four reasons emerged as important influences. Losing interest and finding that the course was not what had been expected were endorsed most frequently, while wanting a job or apprenticeship was also an influential factor. Previous research in both the VET and higher education sectors has found that learners who worked more than about 10 hours per week were more likely to discontinue their studies (Applegate & Daly, 2005; McMillan, 2005; McMillan *et al.*, 2005), and respondents in this study reported that juggling work and study commitments was a factor in their decisions to leave their courses.

Table 13 Reasons for discontinuation given by non-apprenticeship course participants

Reason suggested during interview	Influences on decisions by non-apprenticeship participants (%)
You had problem juggling work and study commitments	13
You wanted to get a job, apprenticeship or traineeship	15
Financially, you could not afford to continue	9
You just lost interest or you never really wanted to study	16
The course turned out to be not what you wanted	16
It would not have led to a good job or career	7
You had been getting poor results	6
The study load was too heavy	5
You never really intended to complete the course	3
Because of problems with transport or access	4
Because of health or personal problems	8
<i>All reasons</i>	<i>100</i>

The main reasons for discontinuation nominated by non-apprenticeship VET course participants were wanting a job, an apprenticeship or a traineeship (see Table 14).

Table 14 Main reason for discontinuation of non-apprenticeship courses

Reason given by participants during interview	Main influence on decisions by non-apprenticeship participants (%)
You had problem juggling work and study commitments	14
You wanted to get a job, apprenticeship or traineeship	20
Financially, you could not afford to continue	8
You just lost interest or you never really wanted to study	15
The course turned out to be not what you wanted	15
It would not have led to a good job or career	2
You had been getting poor results	2
The study load was too heavy	1
You never really intended to complete the course	1
Because of problems with transport or access	3
Because of health or personal problems	10
Some other reason	10
<i>All reasons</i>	<i>100</i>

The desire among non-apprenticeship course participants to find paid work warrants more detailed investigation. If financial concerns were implicated in this decision, a greater endorsement of the next reason, 'Financially, you could not afford to continue', might be anticipated. This is not observed, so the need for immediate income appears not to underlie this desire. If it is postulated that getting a job was an expression of concern about career prospects arising from their course, a greater endorsement of 'It would not have led to a good job or career' could be expected. Again, this is not observed. A loss of interest in the course and unmet expectations of their courses remain significant factors in students' decisions to cease their courses, so seeking a job may be a viable alternative to persisting with a course that has not engaged them.

SUMMARY

- The expected completion rate of apprenticeships and traineeships derived in this study is approximately 83%, but is more likely to be around 77% after taking into account possible attrition bias.
- The expected completion rate of non-apprenticeship VET courses is approximately 73%.
- Non-completion of non-apprenticeship programs is related to the level of the program, with lower level course participants more likely to complete (83%) and diploma and above participants less so (65%). This is likely to be related to the lengths of the programs.
- The socio-demographic and school-related characteristics of VET program participants appear to be largely unrelated to the decision to discontinue programs.
- Many former apprentices reported leaving their training because of conflict with peers or supervisors in the workplace (22%) or dissatisfaction with the type of work (20%).
- Trainees who discontinued their contracts cited health or personal problems (18%) or being offered better jobs (16%) as the most common reasons.
- Non-apprenticeship VET course participants indicated that wanting to get a job or apprenticeship, unmet course expectations and a loss of interest in the course were major reasons for withdrawing from their courses.

4. OUTCOMES ASSOCIATED WITH VET PARTICIPATION

This chapter examines key education and labour force outcomes by age 23 of young people who had participated in VET by age 20. Not all of these had completed the VET program and some had withdrawn. The next chapter examines differences in outcomes between completers and non-completers.

The outcomes analysed are:

- education and labour force status;
- experience of unemployment;
- weekly gross earnings and hours worked;
- participation in further training and development; and
- job satisfaction.

These outcomes were assessed on information provided by participants in VET programs in the 2004 survey. By 2004, the modal age of these young people was 23 years and most had been out of school for five years. School non-completers had been out of school for up to seven years.

In order to relate outcomes exclusively to VET pathways, all individuals who had commenced a university course were removed for the analyses reported below. For comparison purposes, those young people who had not commenced any post-school study or who had undertaken only short training programs that did not lead to a qualification were retained. This comparison group enabled the issue of any net benefit to VET participation to be investigated.

Most young people had commenced only one post-school program but some had commenced more than one. Where more than one program had been commenced, one was designated as the main program for the analyses. The main program was the highest level program that had been completed. Where no program had been completed the highest level program commenced was designated as the main program.

EDUCATION AND LABOUR FORCE STATUS

An individual's main education and labour force status was classified into one of five groups, namely full-time study, full-time work, part-time work⁴, unemployed (and seeking work), or not in the labour force (NILF). Seventeen individuals who reported that they were working more than 30 hours per week and were enrolled on a full-time basis in a course were classified as full-time students. All other categories were exclusive. Because male and female pathways and labour markets appear to be distinct, outcomes are tabulated by sex.

Education and Labour Force Status by Type of VET Program

Table 15 shows the labour force status of young people who either undertook no formal post-school study ('No PS study') or commenced an apprenticeship, a traineeship or a non-apprenticeship VET course.

The overall full-time employment rate for this sample of young people is 77%. Those who did no post-school study suffer a relative penalty of 8%, with a full-time employment rate of 69%. Those who undertook some form of VET study fared rather better than this, with apprentices being particularly advantaged with 91% being in full-time employment. Those whose main VET program was a traineeship experienced almost a 12 percentage point gain in full-time employment compared with the no post-school study group.

⁴ Those few instances where respondents were involved in both part-time work and part-time study were classified in the 'part-time work' group.

The male full-time employment rate was 84%, which compares favourably with that of females at 67%. However, the female labour force profile is quite different from the male pattern. Females experience greater part-time employment than males (12% compared with 6%), similar levels of unemployment, but a much higher proportion are not in the labour force (13% compared with 3%). Females who undertake no post-school study appear to fare substantially less well and much of this is attributable to the 18% of this group of young women who, by 2004, were not in the labour force. However, it should be noted that approximately two-thirds of young women who were out of the labour force were either caring for children or nominated home duties as their main activity (Hillman, 2005, p. 14). The finding that young women without post-school qualifications fare less well than males is established in Australia and elsewhere and reflects more opportunities for relatively low-skilled males, for example in construction, than for low-skilled females (Blau, Ferber, & Winkler, 2005; Lamb & Rumberger, 1999).

Table 15 Education and labour force status in 2004 by main program type in 2001 and sex

Sex	Type of program	N	Education and labour force status, 2004					Total (%)
			Full-time study (%)	Full-time work (%)	Part-time work (%)	Unemployed (%)	NILF (%)	
<i>Female</i>	No PS study	404	2	60	14	7	18	100
	Apprenticeship	60	3	72	15	2	8	100
	Traineeship	182	3	76	8	4	8	100
	Non-app VET	467	5	70	11	4	11	100
	<i>Total</i>	<i>1113</i>	<i>4</i>	<i>67</i>	<i>12</i>	<i>5</i>	<i>13</i>	<i>100</i>
<i>Male</i>	No PS study	436	2	78	8	9	4	100
	Apprenticeship	374	1	94	2	1	1	100
	Traineeship	145	2	87	6	0	5	100
	Non-app VET	336	4	82	7	5	2	100
	<i>Total</i>	<i>1291</i>	<i>2</i>	<i>84</i>	<i>6</i>	<i>5</i>	<i>3</i>	<i>100</i>
<i>All</i>	No PS study	840	2	69	11	8	11	100
	Apprenticeship	433	2	91	4	1	2	100
	Traineeship	327	2	81	7	2	6	100
	Non-app VET	805	5	75	9	4	7	100
	<i>Total</i>	<i>2405</i>	<i>3</i>	<i>77</i>	<i>9</i>	<i>5</i>	<i>7</i>	<i>100</i>

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

In this analysis, 5% of those who undertook non-apprenticeship VET programs went on to further study in 2004. Stanwick (2006) found that almost one-third of diploma level course graduates who were less than 25 year old went on to further study.⁵ In an earlier study of lower certificate participants, Stanwick (2005) found that relatively few participants (about 10%) in these programs went on to further study. The estimate in the present study is lower, in part because it includes certificate enrollees, but mainly because only courses commenced by 2001 were considered in order to assess the outcomes of those courses.

For males, apprenticeships provided the greatest access to full-time employment of all VET pathways. All three VET pathways provided greater access to employment than entering the labour market directly from school. For females, traineeships provided the most favourable labour force outcomes, followed by apprenticeships. As for males, all three VET pathways are associated with more favourable outcomes compared with direct entry to the labour market from school. From Table 15, it can be seen that females gain more from VET participation than males. An alternative description is that the penalty to non-participation in post-school education and training is greater for females.

⁵ The present estimate of further study is for 2004 only. No doubt some undertook study in 2002 and 2003, but this was not tracked in the present study.

Education and Labour Force Status by Program Level and Type

Three main levels of VET program were distinguished, namely diploma (and above) programs, higher certificate (certificate III and IV) programs and lower certificate (certificate I and II) qualifications. In the following analyses qualifications of unknown level and unknown qualifications were combined into a single group. Note that net employment rates for both males and females when tabulated by program level (Table 16) are greater than in Table 15 because the 'no post-school study' group is not represented in this analysis.

For apprenticeships and traineeships, no differences were found by level of qualification and for this reason the outcomes from these programs are not tabulated. Some differences in education and labour force status, however, are apparent for non-apprenticeship VET courses, and those outcomes are shown in Table 16. Whether full-time employment only or full- or part-time employment is considered, diploma level participants fare better than those who do higher certificates and they fare better than lower certificate participants. In contrast with Australian Apprenticeship participants, relatively few non-apprenticeship course participants did not know the level of their qualification, and the numbers are too small to enable definite conclusions to be drawn.

For females, the difference in access to full- and part-time employment between diploma and higher certificate programs is greater than the corresponding difference for males. This is likely to reflect different labour market structures for males and females, in which employment options are more readily available to lower-skilled males than to lower-skilled females.

Table 16 Non-apprenticeship VET participants to 2001: Education and labour force status in 2004 by level of VET program and sex

Sex	Course level	N	Education and labour force status, 2004					Total (%)
			Full-time study (%)	Full-time work (%)	Part-time work (%)	Unem-ployed (%)	NILF (%)	
<i>Female</i>	Diploma	202	6	77	7	1	7	100
	Higher certificate	145	3	66	12	5	14	100
	Lower certificate	82	7	52	17	7	16	100
	Level unknown	39	3	77	8	3	10	100
	<i>Total</i>	<i>468</i>	<i>5</i>	<i>69</i>	<i>10</i>	<i>4</i>	<i>11</i>	<i>100</i>
<i>Male</i>	Diploma	164	4	82	9	4	2	100
	Higher certificate	96	6	83	5	3	2	100
	Lower certificate	40	0	83	8	10	0	100
	Level unknown	34	3	79	3	12	3	100
	<i>Total</i>	<i>334</i>	<i>4</i>	<i>82</i>	<i>7</i>	<i>5</i>	<i>2</i>	<i>100</i>
<i>All</i>	Diploma	366	5	79	8	2	5	100
	Higher certificate	241	5	73	9	4	9	100
	Lower certificate	122	5	62	14	8	11	100
	Level unknown	73	3	78	5	7	7	100
	<i>Total</i>	<i>802</i>	<i>5</i>	<i>75</i>	<i>9</i>	<i>4</i>	<i>7</i>	<i>100</i>

Notes: Row percentages may not sum to 100 due to rounding. Greyed figures are based on small cell sizes ($n < 30$).

Labour Force Status by Field of Study

For the purposes of this section, the 12 fields of study were collapsed to 9 because of the relatively small numbers of VET program commencements in the natural and physical sciences, education, and society and culture fields. These groups were combined with mixed field enrolments and are listed in Table 17 as 'other'.

Table 17 Education and labour force status by field of study of main course and sex

Sex	Field of study	N	Education and labour force status, 2004					Total (%)
			Full-time study (%)	Full-time work (%)	Part-time work (%)	Unemployed (%)	NILF (%)	
<i>Female</i>	InfoTech	21	5	81	5	0	10	100
	Engineering technologies	13	15	62	15	8	0	100
	Arch & Building	17	6	65	18	0	12	100
	Ag & Env	28	0	82	7	11	0	100
	Health	108	7	69	9	2	12	100
	Manage. & Commerce	217	3	77	8	4	8	100
	Creative arts	30	3	73	20	3	0	100
	Food & Hospitality	203	5	70	9	5	11	100
	Other	46	0	57	20	2	22	100
	<i>Total</i>	<i>683</i>	<i>4</i>	<i>72</i>	<i>10</i>	<i>4</i>	<i>10</i>	<i>100</i>
<i>Male</i>	InfoTech	54	7	74	7	7	4	100
	Engineering technologies	238	0	93	3	2	1	100
	Arch & Building	191	3	94	1	2	1	100
	Ag & Env	54	0	94	2	4	0	100
	Health	20	0	85	10	5	0	100
	Manage. & Commerce	101	6	76	10	0	8	100
	Creative arts	29	3	59	24	14	0	100
	Food & Hospitality	119	3	87	7	1	3	100
	Other	28	0	100	0	0	0	100
	<i>Total</i>	<i>834</i>	<i>2</i>	<i>88</i>	<i>5</i>	<i>3</i>	<i>2</i>	<i>100</i>
<i>All</i>	InfoTech	74	7	77	5	5	5	100
	Engineering technologies	250	2	92	4	2	1	100
	Arch & Building	208	3	92	2	2	1	100
	Ag & Env	82	0	89	5	6	0	100
	Health	129	7	71	9	2	10	100
	Manage. & Commerce	318	4	77	9	3	8	100
	Creative arts	60	5	65	22	8	0	100
	Food & Hospitality	321	4	77	8	3	8	100
	Other	74	0	73	12	1	14	100
	<i>Total</i>	<i>1516</i>	<i>3</i>	<i>81</i>	<i>7</i>	<i>3</i>	<i>6</i>	<i>100</i>

Note: Row percentages may not sum to 100 due to rounding. The 'Total' figures in this table are different from those in Table 15 because that table included all individuals whereas this table excludes the 'no post-school study' group.

The full-time employment rates for females and males are 67 and 84% (see Table 15). Both have similarly low levels of unemployment at about 4% and 3% respectively. About 10% of young women and 5% of young men who commenced VET programs were working on a part-time basis. Young women were much more likely to be out of the labour force than young men (10% compared with 2%).

Young women who commenced VET programs in information technology and in agriculture and environment tended to have more favourable employment outcomes. Those who commenced other programs (mostly society and culture) and engineering and related technologies⁶ courses had lower levels of full-time employment. However, the fields of study leading to lower rates of full-time employment also lead to relatively high levels of part-time employment (approaching 20%). Studies in health, food and hospitality, and 'other' are associated with relatively high levels of being outside the labour force. Young women who commenced programs in food and hospitality were more likely than most to be engaged in full-time study. It is possible that young people who intend to pursue

⁶ Note the relatively small number (13) of young women in engineering and related technologies programs.

further study take courses in this area in order to find readily available casual work to support them while they study.

Full-time employment outcomes were highest for young men who commenced VET programs in engineering and related technologies, architecture and building, and agriculture and environment. Creative arts was the only field of study associated with low levels of full-time employment for males. Information technology courses led to lower than average levels of full-time employment. They also had higher numbers of young men in full-time study, in part-time work and experiencing unemployment. Studies in management and commerce led to lower than average levels of full-time employment, higher levels of full-time study, higher than average rates of part-time employment, and surprisingly high levels (for males) of not being in the labour force.

The differences in the labour force profiles for young women and men who participate in VET support the contention that there are distinct labour markets for females and males.

EXPERIENCE OF UNEMPLOYMENT

Employment status at one point in time is a limited indicator of the benefit of education and training, especially during a period of labour market transition. Experience and duration of unemployment over a longer period provides a better picture of transition success. In the annual surveys, participants were asked how many weeks during the previous year they were not working but looking for work. This variable is highly skewed, as most young people experienced relatively little unemployment, so it was categorised into four groups: no experience of unemployment; less than four weeks of unemployment; more than four but less than 10 weeks of unemployment; and more than 10 weeks of unemployment.

Experience of Unemployment by Type of Program

Data on unemployment by program type and sex are shown in Table 18 and Figure 3. They do not include young people who were out of the labour force.

Table 18 Experience of unemployment in 2004 by type of program

Sex	Type of course	N	Experience of unemployment, 2004				Total (%)
			None (%)	Less than 4 weeks (%)	4 to 10 weeks (%)	More than 10 weeks (%)	
<i>Female</i>	No post-school study	410	81	6	6	7	100
	Apprenticeship	61	89	2	3	7	100
	Traineeship	184	83	7	2	8	100
	Non-apprentice VET	470	86	4	3	7	100
	<i>Total</i>	<i>1125</i>	<i>84</i>	<i>5</i>	<i>4</i>	<i>7</i>	<i>100</i>
<i>Male</i>	No post-school study	442	79	8	5	8	100
	Apprenticeship	374	92	2	4	2	100
	Traineeship	146	86	3	4	7	100
	Non-apprentice VET	337	75	7	9	9	100
	<i>Total</i>	<i>1299</i>	<i>83</i>	<i>6</i>	<i>5</i>	<i>6</i>	<i>100</i>
<i>All</i>	No post-school study	852	80	7	5	8	100
	Apprenticeship	435	91	2	4	3	100
	Traineeship	330	85	5	3	7	100
	Non-apprentice VET	807	82	5	5	8	100
	<i>Total</i>	<i>2424</i>	<i>83</i>	<i>5</i>	<i>5</i>	<i>7</i>	<i>100</i>

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

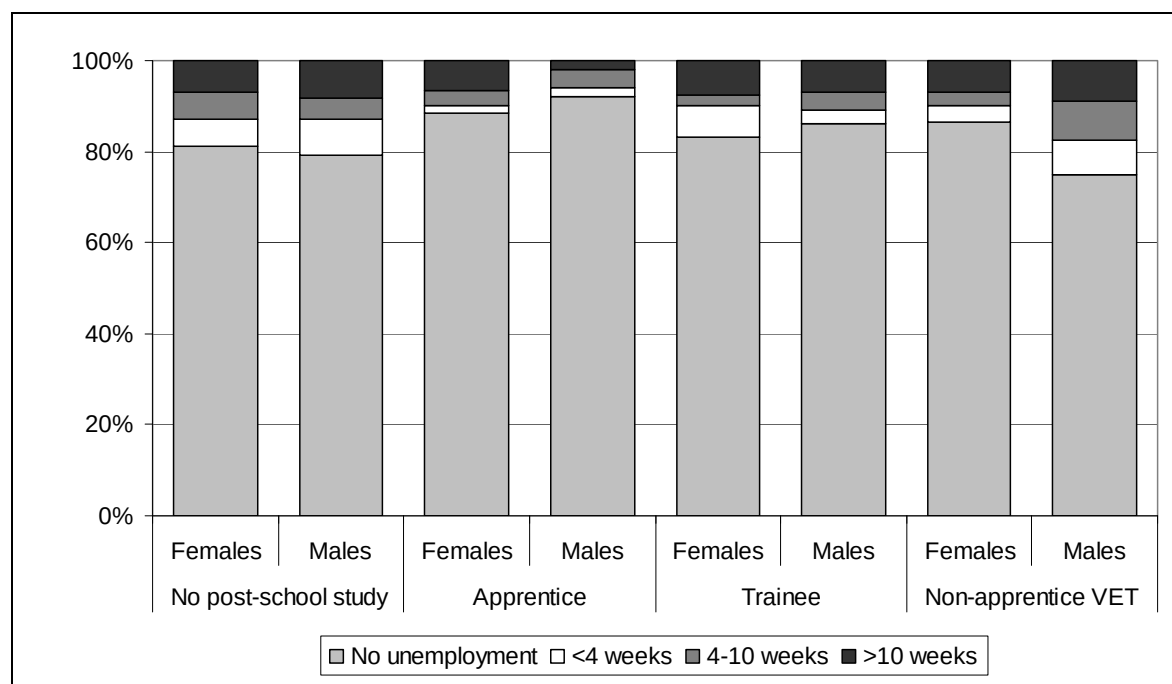


Figure 3 Experience of unemployment during 2004 by main program type and sex

Overall, 83% of VET participants who were in the labour force experienced no unemployment during 2004. For females, having participated in an apprenticeship provided some immunity against unemployment, while not having participated in any post-school study imposed a 3% penalty compared with the female average. There is little difference in the proportions of young women who experienced substantial unemployment (more than 10 weeks) by post-school program category. Traineeships provided a slight advantage compared with no post-school study, mainly by reducing moderate (4 to 10 weeks) unemployment.

Males who had participated in an apprenticeship experienced the lowest level of unemployment. Traineeship participation also conferred a benefit, although it did not prevent longer term unemployment compared with those who did not undertake any post-school study. For males, participation in non-apprenticeship VET programs was not helpful in minimising the experience of unemployment compared with those who had undertaken no post-school study. However, those young people who entered the labour market directly from school have had two to three years more time in that market than those who undertook non-apprenticeship VET study. The periods of unemployment experienced by non-apprenticeship VET participants may reflect their inexperience in the labour market. Marks (2005) has shown that over time, young people move from other activities into full-time employment and that, having achieved this status, they tend to persist in it.

Experience of Unemployment by Level of Program

Diploma level programs had more favourable outcomes for females, but less favourable outcomes for males compared with their respective averages. However, no other differences were apparent, and as noted in relation to labour force status and program level, any differences are likely to be attributable to program type and field of study rather than to program level directly. For these reasons no table showing these results is presented.

Experience of Unemployment by Field of Study

The experiences of females and males who participated in VET programs were similar. Most — around 85% — had experienced no unemployment during 2004. More males than females had experienced moderate (4 to 10 weeks) unemployment. However, there are differences in the experience of unemployment by field of study and sex, as shown in Table 19 and Figure 4.

Young women who undertook programs in information technology experienced virtually no unemployment. By contrast, only three-fifths of male information technology participants could make this claim. Almost one in 10 reported up to four weeks of unemployment over the year and one-fifth more than 10 weeks. Young women who had undertaken VET programs in agriculture and environment fared somewhat worse than average. Fewer than three-quarters experienced no unemployment, while 13% experienced up to four weeks of unemployment.

Table 19 Experience of unemployment in 2004 by field of study

Sex	Field of study	N	Experience of unemployment, 2004				Total (%)
			None (%)	Less than 4 weeks (%)	4 to 10 weeks (%)	More than 10 weeks (%)	
<i>Female</i>	InfoTech	20	100	0	0	0	100
	Engineering technologies	13	85	8	0	8	100
	Arch & Building	17	76	6	12	6	100
	Ag & Env	30	73	13	7	7	100
	Health	109	84	5	1	10	100
	Management & Commerce	217	87	4	2	8	100
	Creative arts	30	87	3	0	10	100
	Food & Hospitality	203	85	4	5	5	100
	Other	47	89	2	4	4	100
	<i>Total</i>	<i>686</i>	<i>86</i>	<i>4</i>	<i>3</i>	<i>7</i>	<i>100</i>
<i>Male</i>	InfoTech	54	61	11	9	19	100
	Engineering technologies	240	91	5	3	1	100
	Arch & Building	191	87	2	7	5	100
	Ag & Env	57	72	5	14	9	100
	Health	20	60	5	0	35	100
	Management & Commerce	100	87	4	4	5	100
	Creative arts	29	62	3	14	21	100
	Food & Hospitality	120	91	2	3	4	100
	Other	29	86	7	7	0	100
	<i>Total</i>	<i>840</i>	<i>84</i>	<i>4</i>	<i>6</i>	<i>6</i>	<i>100</i>
<i>All</i>	InfoTech	74	72	8	7	14	100
	Engineering technologies	253	91	6	3	1	100
	Arch & Building	208	86	2	7	5	100
	Ag & Env	87	72	8	11	8	100
	Health	129	81	5	1	14	100
	Management & Commerce	317	87	4	3	7	100
	Creative arts	59	75	3	7	15	100
	Food & Hospitality	323	87	3	4	5	100
	Other	76	88	4	5	3	100
	<i>Total</i>	<i>1526</i>	<i>85</i>	<i>4</i>	<i>4</i>	<i>6</i>	<i>100</i>

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

In both health and creative arts areas, 10% of females reported more than 10 weeks of unemployment over the year. In these two areas, a greater proportion of males reported longer periods of unemployment, with one-third of males in the health area reporting more than 10 weeks of unemployment during 2004. The health sector was reported as having skills shortages in 2004, although the demand appears to have been for registered nurses and health specialists, that is, for university qualified individuals (DEWR, 2005). Males who had undertaken studies in engineering and related technologies, architecture and building, management and commerce, and food and hospitality fared quite well with around 90% reporting no unemployment over the year.



Figure 4 Experience of unemployment during 2004 by main program field of study and sex

EARNINGS AND HOURS WORKED

Two related indicators of labour market success are weekly earnings and hours worked per week. The distributions of both indicators are skewed and are subject to a small number of extreme values. For this reason, median values for these indicators are reported rather than means, with their associated tests of significance.

Gross weekly earnings and hours worked are compared for people who undertook different types of VET courses and in different fields of study. Comparisons by course level are not presented, as differences among them are likely to be attributable to course type and field of study.

Earnings and Hours Worked by Main Program Type

There was little variation in the number of hours worked by those people who have either not commenced any form of post-school study or who have undertaken any of the three types of VET program. There were slight differences in the number of hours worked by females and males, with females typically having a median working week of 38 hours and males 40 hours. A further and more important difference lies in the skewness of the distribution of hours. Among females those who work less than the median number of hours tend to work substantially less. For males, the distribution is positively skewed. This characteristic of these distributions is reflected strongly in the distributions of earnings. These distributional characteristics are apparent in Figure 5. In that figure, the main symbol represents the median value, and the bars either side of it show the 25th and 75th percentiles of the distribution. For earnings, it is apparent that the bars above the median value are longer than those below it for males, while the reverse is true for females.

Male median earnings in each of the four course categories were greater than female median weekly earnings. However, the difference between female and male earnings of about 15% was not fully explained by the difference in the number of hours worked, which is about 5%. As was seen in previous sections, similar types of courses did not lead to similar types of work, so the differences in earnings may be attributable to differences in the work that was undertaken.

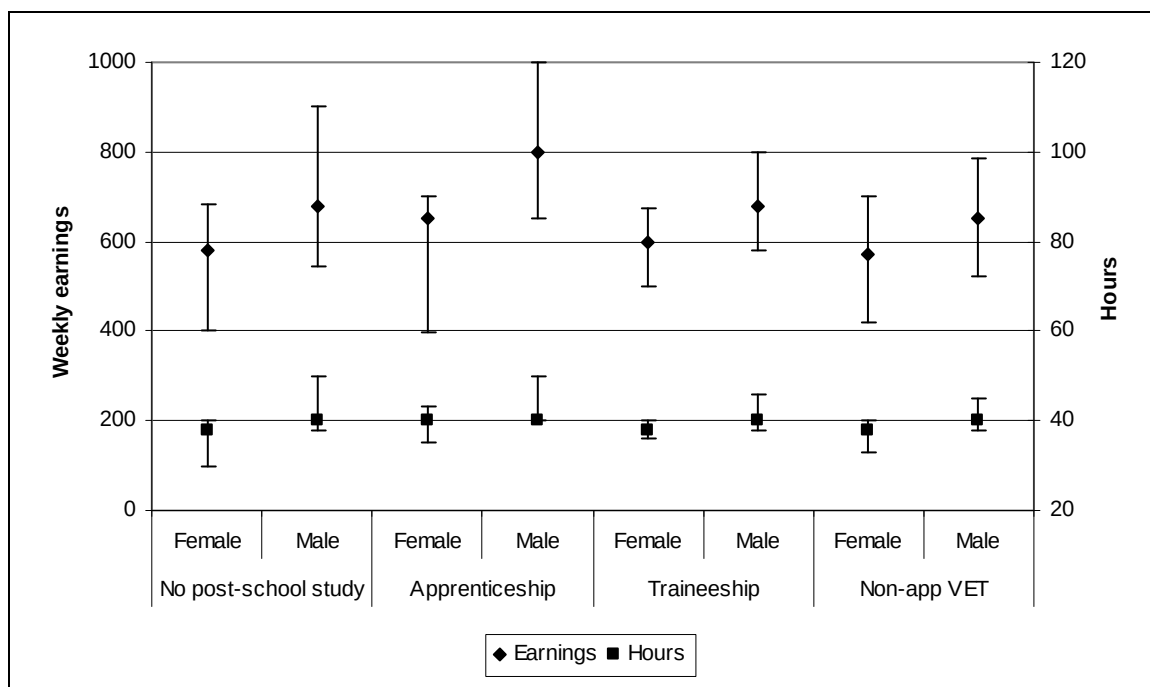


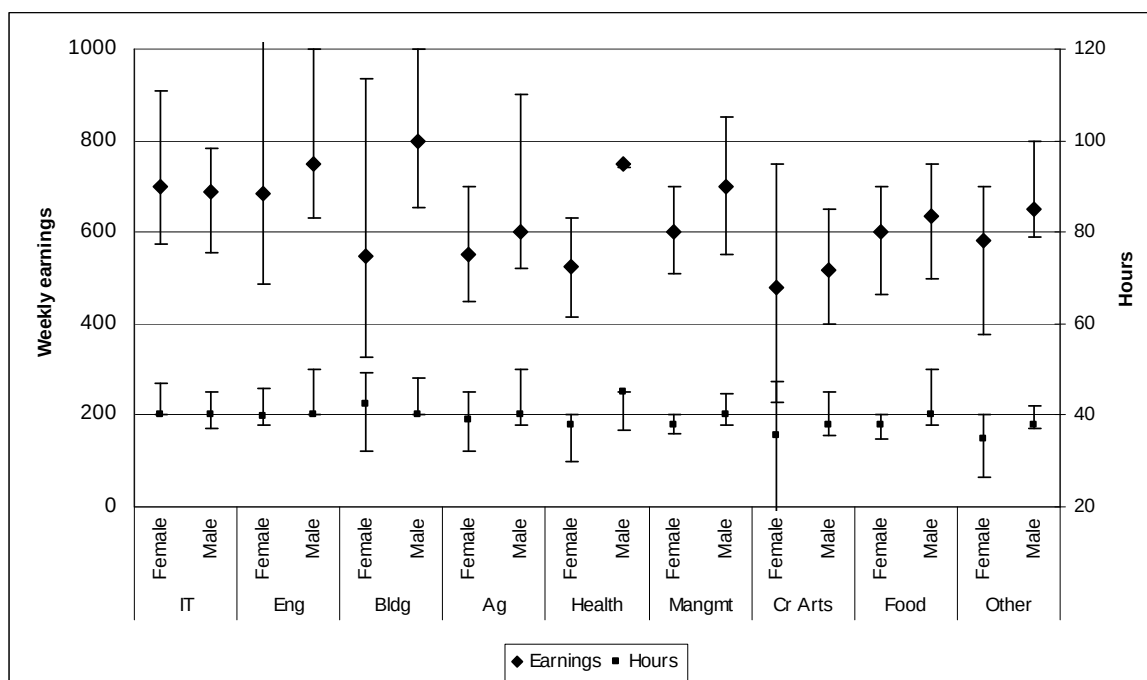
Figure 5 Post-school education participants in 2001: Median weekly gross earnings and hours worked in 2004 by program type and sex

The major interest in Figure 5 lies in the earnings reported by respondents in the four categories. Those who undertook apprenticeships earned more per week than the no post-school study group. This was particularly so for males who commenced apprenticeships. While young people who participated in traineeships did not earn as much as former apprentices, they received higher earnings than the reference group. However, those young people who commenced non-apprenticeship VET programs earned salaries comparable with the no post-school study group.

Earnings and Hours Worked by Main Program Field of Study

There was some variation in hours worked per week by field of study (see Figure 6). In the creative arts area, both males and females reported working fewer hours than did young people in other fields. This was particularly true for females, who worked a median 36 hours per week. This observation is consistent with the finding that part-time work was particularly common for both males and females who had commenced programs in this area (see Table 17).

In almost all fields of study, the median male gross weekly earnings was greater than that of females and the difference is not fully explained by hours of work, although in most fields females reported working fewer hours per week.



Note: Data points with very large inter-quartile ranges reflect small numbers of observations. See for example the responses for females in Engineering and related technologies and Building and architecture fields.

Figure 6 VET participants in 2001: Median weekly gross earnings and hours worked in 2004 by field of study and sex

PARTICIPATION IN WORKPLACE TRAINING

A preparedness to continue to enhance one's skills base may reflect a commitment to lifelong learning, and such a commitment can be developed through the programs that individuals undertake in their initial skills formation. In this context, participation in both formal and informal training in the workplace may be an indicator of the effectiveness of the earlier education and training programs that individuals have undertaken.

Information on individuals' participation in both formal and informal training activities was sought during annual interviews. In addition, respondents were asked to indicate the number of hours of formal training that they had undertaken during the year.

Participation in Formal and Informal Training by Type of Program

Training delivered in classrooms or other dedicated training facilities either on or off the job was defined as formal training. Informal training was mentoring or instruction provided incidentally or learning undertaken by the individual.

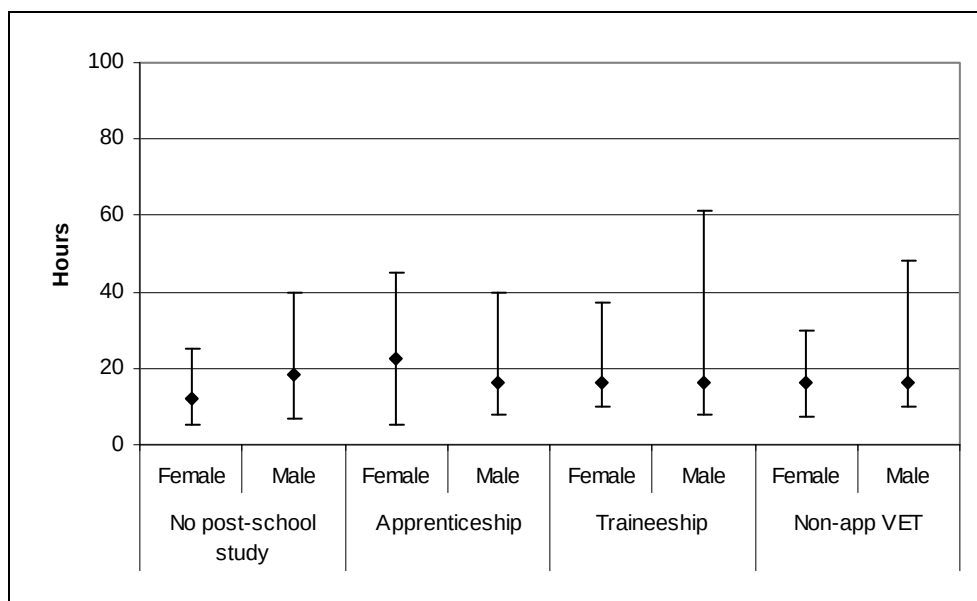
Overall, 40% of all individuals reported receiving some formal workplace-based training during 2004 (see Table 20). Only one-third of individuals who had commenced no formal post-school VET program reported participating in formal job-related training. By contrast, over 40% of those who had undertaken VET programs received this form of training. There were some differences by course type and sex. For example, over half of females who had undertaken apprenticeships reported participating in formal training while only 41% of former trainees did. Among males, only 40% of former apprentices took part in formal work-related training, whereas just over half of former trainees did so.

Table 20 Participation in formal and informal training in 2004 by main course type

Sex	Type of course	N	Formal work-based training			Informal work-based training		
			None (%)	Some (%)	Total (%)	None (%)	Some (%)	Total (%)
<i>Female</i>	No PS study	321	67	33	100	65	35	100
	Apprenticeship	53	47	53	100	66	34	100
	Traineeship	160	59	41	100	55	45	100
	Non-app VET	389	56	44	100	66	34	100
	<i>Total</i>	923	60	40	100	64	36	100
<i>Male</i>	No PS study	365	68	32	100	69	31	100
	Apprenticeship	313	60	40	100	66	34	100
	Traineeship	134	47	53	100	66	34	100
	Non-app VET	300	57	43	100	59	41	100
	<i>Total</i>	1112	60	40	100	65	35	100
<i>All</i>	No PS study	686	67	33	100	67	33	100
	Apprenticeship	366	58	42	100	66	34	100
	Traineeship	294	54	46	100	60	40	100
	Non-app VET	689	56	44	100	63	37	100
	<i>Total</i>	2035	60	40	100	64	36	100

Note: For each type of training, formal and informal, row totals sum to 100.

Informal training was less common than formal training. Again, approximately one-third of young people who had not undertaken any formal post-school VET programs participated in informal training. The proportion of individuals who had commenced VET programs receiving informal training during 2004 was slightly greater. There were no consistent differences between males and females in their participation in informal training. Because the distribution of hours tends to be skewed, median hours are reported. These data are shown by type of program in Figure 7.

**Figure 7 Median hours of formal training (bounded by 25th and 75th percentiles) during 2004 by program type**

In contrast to previous research which indicated that males tended to receive more hours of training than females, these data show that there are no consistent differences in the number of hours of formal job-related training undertaken by young men and young women who have participated in VET. The data also show no differences by the type of program, including no post-school study, undertaken by individuals.

Participation in Formal and Informal Training by Field of Study

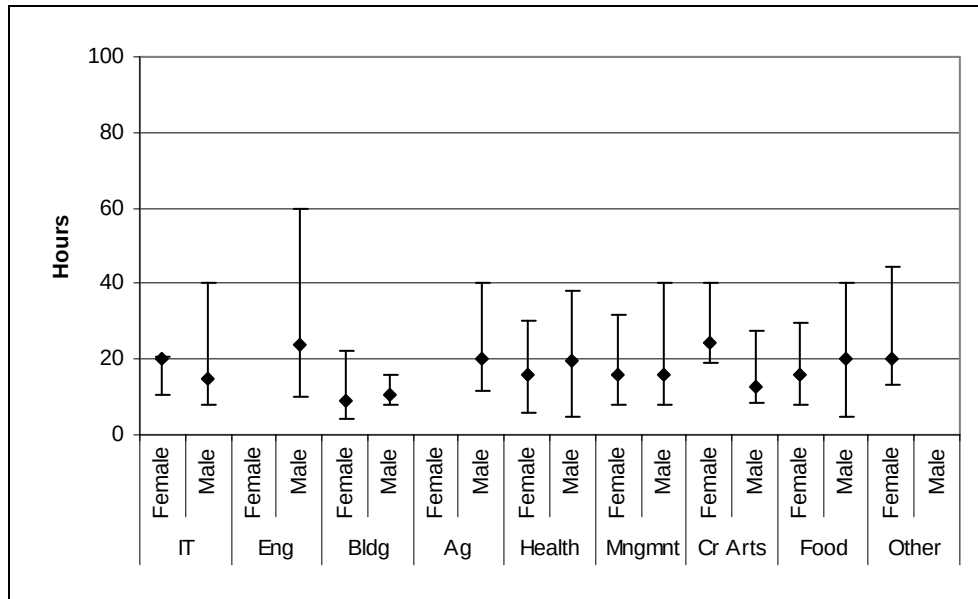
Although young men and women reported similar overall experiences of both formal and informal work-based training during 2004, there were differences by field of study (see Table 21). About one-fifth of young women who had commenced VET agriculture and environment programs and one-quarter who had taken information technology courses reported receiving formal job-related training. However, approximately half the young women who had commenced programs in engineering and related technologies, architecture and building, management and commerce, and 'other' reported participating in formal job related training.

Table 21 Participation in formal and informal training in 2004 by field of study

Sex	Field of Study	N	Formal training (%)			Informal training (%)		
			None	Some	Total	None	Some	Total
<i>Female</i>	InfoTech	19	74	26	100	83	17	100
	Engineering technologies	10	40	60	100	78	22	100
	Arch & Building	15	53	47	100	40	60	100
	Ag & Env	24	83	17	100	83	17	100
	Health	95	59	41	100	74	26	100
	Management & Commerce	194	53	47	100	56	44	100
	Creative arts	25	60	40	100	72	28	100
	Food & Hospitality	166	55	45	100	58	42	100
	Other	35	46	54	100	57	43	100
	<i>Total</i>	<i>583</i>	<i>56</i>	<i>44</i>	<i>100</i>	<i>62</i>	<i>38</i>	<i>100</i>
<i>Male</i>	InfoTech	50	58	42	100	55	45	100
	Engineering technologies	219	50	50	100	63	37	100
	Arch & Building	146	66	34	100	75	25	100
	Ag & Env	43	47	53	100	47	53	100
	Health	18	61	39	100	44	56	100
	Management & Commerce	93	58	42	100	71	29	100
	Creative arts	23	61	39	100	74	26	100
	Food & Hospitality	112	63	38	100	56	44	100
	Other	26	27	73	100	62	38	100
	<i>Total</i>	<i>730</i>	<i>56</i>	<i>44</i>	<i>100</i>	<i>64</i>	<i>36</i>	<i>100</i>
<i>All</i>	InfoTech	69	62	38	100	62	38	100
	Engineering technologies	229	49	51	100	63	37	100
	Arch & Building	161	65	35	100	72	28	100
	Ag & Env	67	60	40	100	59	41	100
	Health	113	59	41	100	69	31	100
	Management & Commerce	287	54	46	100	61	39	100
	Creative arts	48	60	40	100	73	27	100
	Food & Hospitality	278	58	42	100	57	43	100
	Other	61	38	62	100	59	41	100
	<i>Total</i>	<i>1313</i>	<i>56</i>	<i>44</i>	<i>100</i>	<i>63</i>	<i>37</i>	<i>100</i>

Note: For each type of training, formal and informal, row totals sum to 100.

The number of hours of training reported by males and females varied both by sex and by field of study. In some categories — for example, females in engineering and related technologies — the number of responses is low, so even though median values are reported rather than means (which are subject to extreme cases), the estimates should be regarded as broadly indicative rather than precise. These data are presented in Figure 8 and suggest that young people who took VET programs in architecture and building subsequently received fewer hours of formal training than their peers. There appears to be little variation in the number of hours of training experienced by young people who took programs in other fields of study. What is also apparent from Figure 8 is the considerable variation in the number of hours of training experienced by young people within all fields of study. This suggests that some enterprises provide considerable levels of work-based training while others provide little.



Note: Data for categories with small numbers of cases (eg Male Other) have been suppressed.

Figure 8 Median hours of formal training (bounded by 25th and 75th percentiles) during 2004 by field of study

JOB SATISFACTION

Job satisfaction was assessed by responses to nine questions. The first of these asked if the job respondents held was the one they wanted as a career and responses were affirmative, negative or undecided. The remaining eight items sought information about aspects of their work and work context. The questions were:

- How satisfied are you with ...
 - The kind of work you do?
 - Your immediate boss or supervisor?
 - Other people you work with?
 - The pay you get?
 - Opportunities for training?
 - The tasks you are assigned?
 - Recognition you get for tasks well done?
 - Your opportunities for promotion?

Response options were: Very satisfied, Fairly satisfied, Fairly dissatisfied and Very dissatisfied, or not applicable.

The eight items asking about satisfaction with aspects of their job were subject to Rasch scaling. These items were found to form a single coherent scale with excellent measurement properties, and a single job satisfaction score was computed for respondents to these items and was used in subsequent analyses. Since there is no natural metric for attitude scales such as this, scores were transformed to have an item mean of 50 and a standard deviation of 10.

Job Satisfaction by Main Course Type

There are differences in whether an individual's current job is part of a preferred career by both the type of program that young people undertook and sex (see Table 22). In order, people who undertook apprenticeships most frequently perceived their jobs as part of their careers, followed by former trainees, non-apprenticeship VET course participants, and finally those who did no formal post-school study. Approximately three-quarters of former apprentices believed that their jobs were part of their careers, while half of those young people who did no formal post-school study regarded their jobs as career-related.

Table 22 Current job as part of a preferred career by main course type

Sex	Type of course	N	Job as career, 2004			Total (%)
			Job related to career (%)	Job not related to career (%)	Unsure (%)	
<i>Female</i>	No PS study	307	48	47	6	100
	Apprenticeship	53	74	19	8	100
	Traineeship	157	62	34	4	100
	Non-app VET	395	58	38	4	100
	<i>Total</i>	<i>912</i>	<i>56</i>	<i>39</i>	<i>5</i>	<i>100</i>
<i>Male</i>	No PS study	380	52	43	5	100
	Apprenticeship	362	78	17	5	100
	Traineeship	135	63	30	7	100
	Non-app VET	312	59	35	6	100
	<i>Total</i>	<i>1189</i>	<i>63</i>	<i>32</i>	<i>5</i>	<i>100</i>
<i>All</i>	No PS study	687	50	45	5	100
	Apprenticeship	415	77	18	5	100
	Traineeship	292	63	32	5	100
	Non-app VET	707	59	37	5	100
	<i>Total</i>	<i>2101</i>	<i>60</i>	<i>35</i>	<i>5</i>	<i>100</i>

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

Overall, and in each course type, fewer young women than young men regard their current jobs as part of their careers. The difference is not great, at 7 percentage points, but it is consistent.

Figure 9 shows the mean scores for job satisfaction (with their 95% confidence intervals) for each type of course for both males and females. Differences in job satisfaction by both course type and sex are statistically highly significant, although the difference between males' and females' reported job satisfaction is small, with males overall being slightly more satisfied with their work. Differences between individuals on the basis of the types of courses that they undertook are more marked. Former apprentices are more satisfied with their work than are those young people who followed alternative pathways into work.

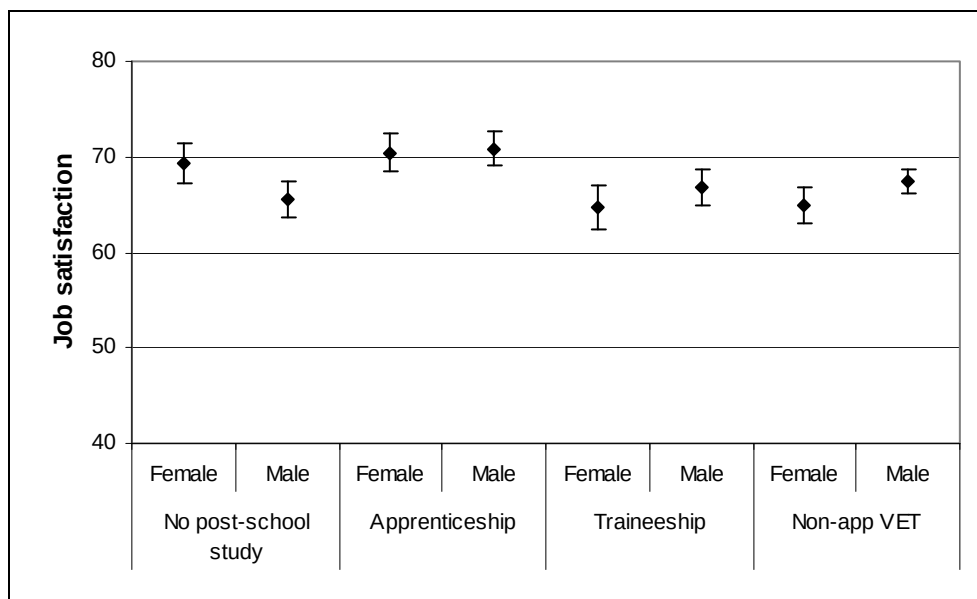


Figure 9 Mean job satisfaction by course type and sex

Job Satisfaction by Field of Study

More than three-quarters of young women who had undertaken courses in the information technology and the agriculture and environment fields perceived their current jobs as being related to their careers. Fewer than half of those whose courses had been in the architecture and building and the creative arts areas perceived their current jobs as being career-related (see Table 23).

More than three-quarters of young men whose courses had been in the engineering and related technologies, architecture and building, agriculture and environment, and health fields perceived their current jobs as being career related. The only fields of study where fewer than half of young men regard their present jobs as career-related are the creative arts and 'other'.

There are some interesting differences between males' and females' perception of their jobs as being career-related. Although there are relatively few females from information technology courses, they are much more likely than young men to perceive their jobs as career-related. This is an interesting finding, given that information technology has been seen as a predominantly male occupation. Young women who participated in architecture and building programs are much less likely than young men to perceive their current jobs as career-related.

Table 23 Current job as part of a preferred career by field of study

Sex	Field of study	N	Job as career, 2004			Total (%)
			Related to career (%)	Not related to career (%)	Unsure (%)	
<i>Female</i>	InfoTech	19	79	21	0	100
	Engineering technologies	9	56	44	0	100
	Arch & Building	13	46	46	8	100
	Ag & Env	25	76	16	8	100
	Health	93	59	39	2	100
	Management & Commerce	191	62	33	5	100
	Creative arts	30	43	50	7	100
	Food & Hospitality	166	62	33	5	100
	Other	36	58	42	0	100
	<i>Total</i>	<i>582</i>	<i>61</i>	<i>35</i>	<i>4</i>	<i>100</i>
<i>Male</i>	InfoTech	49	55	33	12	100
	Engineering technologies	231	76	19	5	100
	Arch & Building	180	79	17	4	100
	Ag & Env	55	80	16	4	100
	Health	19	79	21	0	100
	Management & Commerce	90	52	43	4	100
	Creative arts	24	46	50	4	100
	Food & Hospitality	113	60	33	7	100
	Other	29	45	48	7	100
	<i>Total</i>	<i>790</i>	<i>69</i>	<i>26</i>	<i>5</i>	<i>100</i>
<i>All</i>	InfoTech	68	62	29	9	100
	Engineering technologies	240	75	20	5	100
	Arch & Building	193	77	19	4	100
	Ag & Env	80	79	16	5	100
	Health	112	63	36	2	100
	Management & Commerce	281	59	36	5	100
	Creative arts	54	44	50	6	100
	Food & Hospitality	279	61	33	6	100
	Other	65	52	45	3	100
	<i>Total</i>	<i>1372</i>	<i>66</i>	<i>30</i>	<i>5</i>	<i>100</i>

Figure 10 shows the mean values of job satisfaction by the field of study undertaken and sex. Mean values are bracketed by their 95% confidence intervals. Analyses of variance of these data reveal that the differences between fields of study and between males and females are not statistically significant. This is not a surprising finding, as the figure indicates that there is considerable variation in individuals' job satisfaction within each category. The analysis did reveal that there was a significant interaction effect between field of study and sex. In some fields, such as building, males are more satisfied with their work than females, while in others, such as food and 'other', females are more job-satisfied than males.

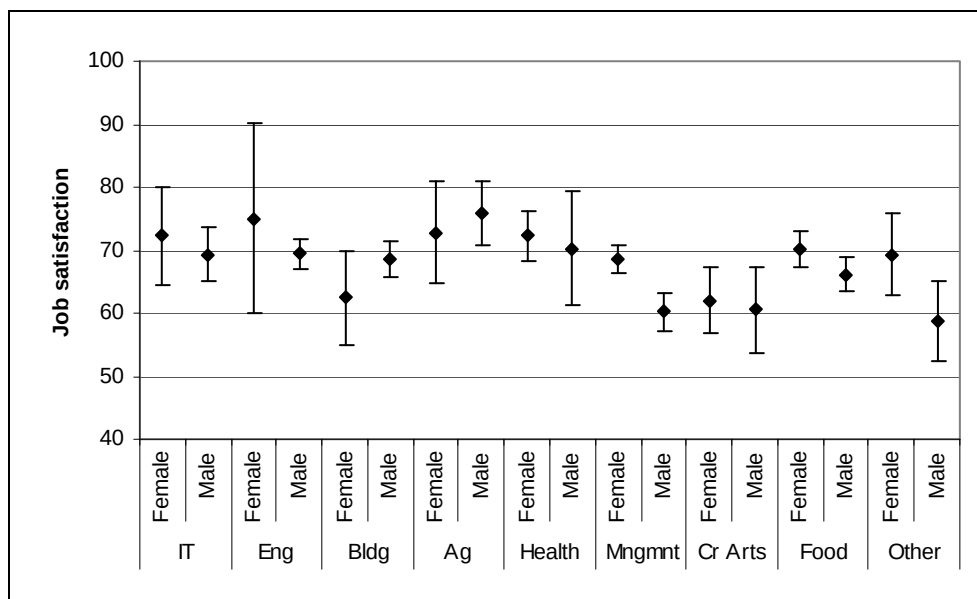


Figure 10 Mean job satisfaction by field of study and sex

SUMMARY

The key education and labour force status indicators examined were: earnings and hours worked; experience of unemployment; participation in further education and training; and job satisfaction. The levels of education and labour force status considered were: full-time study; full-time work; part-time work; unemployment; and not being in the labour force (NILF) at the 2004 interview.

These outcomes follow VET participation, but are not necessarily a direct result of that participation. Outcomes are also attributable to the characteristics of individuals (including their labour force experience), the fields in which their education and training were undertaken, and the labour market opportunities related to those fields. There is, however, a pattern of more favourable education and labour force outcomes following VET participation compared with those who did no post-school education and training.

Outcomes are considered separately for males and females because of labour market differences by gender.

Males

On most indicators, males who had participated in VET programs fared better in the labour force than those who had not. Apprenticeships are associated with particularly favourable outcomes.

- Former apprentices fare particularly well in access to full-time employment with 94% in full-time employment in 2004 and fewer than 2% being unemployed or out of the labour force.
- Males who participated in traineeships experienced favourable outcomes with 87% in full-time employment and only 5% out of the labour force.
- 82% of males who had been enrolled in non-apprenticeship VET courses were in full-time employment in 2004 and a further 7% were in part-time work, with 7% either unemployed or not in the labour force.

- These figures compare favourably with those who did no post-school education or training. For them the full-time employment rate was 78%, with 8% in part-time work and 13% either unemployed or not in the labour force.
- There was little variation in hours worked for males who had participated in the different VET pathways, but there were differences in gross weekly earnings. Former apprentices reported median weekly earnings of approximately \$800. The other groups reported median weekly earnings about \$150 below this level.
- 82% of males who had undertaken apprenticeships reported that their jobs in 2004 were part of their careers. This was higher than for other pathways, with 63% of former trainees, 59% of former non-apprenticeship VET course enrollees, and only 52% of those who did no post-school study saying that their 2004 jobs were career-related.

Females

Females who had participated in VET programs experienced more favourable outcomes than those who had done no post-school study.

- While the level of female employment is lower than that of males, there are variations related to the type of VET program pursued. Females are also more likely than males to be involved in part-time rather than full-time work.
- Former apprentices fare reasonably well in access to full-time employment with 72% in full-time employment and a further 15% in part-time work. About 10% were unemployed or not in the labour force.
- Females who participated in traineeships experienced favourable outcomes with 76% in full-time employment and a further 8% in part-time work. Twelve % were not in the labour force or unemployed.
- About 70% of females who had been enrolled in non-apprenticeship VET courses were in full-time employment in 2004 and a further 11% were working on a part-time basis. There were 15 % who were either unemployed or not in the labour force.
- Around 60% of females who did no post-school education or training were in full-time employment and a further 14% were working part-time. Eighteen % of females who did no post-school study were not in the labour force, and even if many of them were engaged in caring for children or home duties, it does seem that females who do not develop skills through post-school education or training are disadvantaged in the labour market.
- There was little variation in hours worked or in median weekly earnings for females who had participated in the different VET pathways. Female former apprentices reported slightly higher earnings (about \$650) than others (about \$600).
- Three-quarters of females who had undertaken apprenticeships reported that their jobs in 2004 were part of their careers. This was higher than for other pathways, with about 60% of former trainees and non-apprenticeship VET course enrollees making this statement. About half the young women in the survey who had not undertaken any post-school study said their jobs were part of their planned careers.

5. OUTCOMES EXPERIENCED BY VET COMPLETERS AND NON-COMPLETERS

Completion or non-completion of courses is an issue of interest to policy-makers and practitioners in the post-school sectors. A high level of program completion may be taken as an indicator of the high quality of programs and providers. However, especially in VET, non-completion, and more often partial completion, may indicate that individuals have achieved their desired goals and so non-completion need not be taken as a poor reflection of the quality of provision. However, non-completion may come at a cost to individuals. If individuals' labour force and other outcomes are compromised by non-completion rather than completion of qualifications, a case can be made that non-completion is a problem for individuals and for industry.

In this chapter, three main outcomes, by 2004, are compared for completers and non-completers:

- labour force status;
- weekly earnings and hours worked; and
- job satisfaction.

Since no information on partial completion is available in the LSAY data sets, only those respondents who reported that they had completed programs by the 2004 interview were counted as completers. All others were regarded as non-completers.

EDUCATION AND LABOUR FORCE STATUS OF COMPLETERS AND NON-COMPLETERS

For those young people who commenced more than one program, if one program was completed and another not, the completed program was used in analyses. If two programs were either both complete or both incomplete, the higher level program was used.

Outcomes Experienced by Completers and Non-completers by Type of Program

The labour force status at the time of the 2004 interview is represented in Table 24. The table has complete information on the five labour force status categories for all course types, including the comparison group no post-school study, for males, females and all respondents.

Chapter 4 showed that participation in VET of any type, except for lower certificates, was associated with higher likelihood of being in full-time employment. Tables 24 and 25 show that when broken down by whether the VET program was completed or not, the picture is slightly different.

Apprentices, whether they completed or not, experienced greater access to full-time employment than young people who did not undertake any post-school study. Apprenticeship completers did very well, with an overall rate of full-time employment of 93%. This is a 13 percentage point advantage over apprenticeship non-completers and a 24 percentage point advantage over the no post-school study group.

Traineeship completers experienced a 13 percentage point gain in access to full-time employment compared with those who did not commence any post-school study, while non-completers were 3 percentage points behind traineeship completers on this indicator. Non-apprenticeship VET program completers in aggregate have a modest advantage over the comparison no post-school study group of 9 percentage points, but non-completers of these qualifications suffer a slight disadvantage of 3 percentage points.

Table 24 Education and labour force status in 2004 of completers and non-completers by main course type

Sex	Type of course	Completion status	Education and labour force status, 2004					Total (%)
			Full-time study (%)	Full-time work (%)	Part-time work (%)	Un-employed (%)	NILF (%)	
<i>Female</i>	<i>No PS study</i>		2	60	14	7	18	100
	<i>Apprenticeship</i>	Incomplete	4	75	4	4	13	100
		Complete	3	70	22	0	5	100
	<i>Traineeship</i>	Incomplete	0	68	8	4	20	100
		Complete	3	78	8	4	6	100
	<i>Non-app VET</i>	Incomplete	5	59	11	5	20	100
		Complete	5	73	10	3	8	100
<i>Male</i>	<i>No PS study</i>		2	78	8	9	4	100
	<i>Apprenticeship</i>	Incomplete	0	85	12	0	4	100
		Complete	1	96	1	1	1	100
	<i>Traineeship</i>	Incomplete	0	89	11	0	0	100
		Complete	2	87	6	0	6	100
	<i>Non-app VET</i>	Incomplete	2	76	10	8	3	100
		Complete	5	84	6	4	1	100
<i>All</i>	<i>No PS study</i>		2	69	11	8	10	100
	<i>Apprenticeship</i>	Incomplete	3	80	9	1	7	100
		Complete	1	93	3	1	1	100
	<i>Traineeship</i>	Incomplete	0	79	7	2	12	100
		Complete	3	82	7	2	5	100
	<i>Non-app VET</i>	Incomplete	4	66	11	6	13	100
		Complete	5	78	9	4	5	100

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

When the outcomes of completers and non-completers by main course type are further disaggregated by sex, a more complex picture emerges. Having completed an apprenticeship conferred a large advantage on males (18 percentage points in access to full-time employment) compared with not undertaking any post-school study. Whether males completed traineeships or not, they experienced similar rates of full-time employment, while those who completed non-apprenticeship VET courses were at an advantage of 8 percentage points in full-time employment over non-completers.

Females had rather different outcomes, most notably in relation to apprenticeships. Females who completed apprenticeships were at a 5 percentage point disadvantage in access to full-time employment compared with non-completers, but much advantaged compared to those not undertaking any post-school study. However, female apprenticeship completers experienced rather high levels of part-time work. Female apprenticeship completers also experienced poorer labour force outcomes, with 27% being in marginal activities (part-time work, unemployment and being out of the labour force), than female apprenticeship non-completers, of whom 21% were in marginal activities. It should be noted, however, that marginal activities of female apprenticeship non-completers were more likely to have been part-time employment rather than unemployment or being out of the labour force. It seems likely that these outcomes are related to the fields undertaken by young women. Those who complete their apprenticeships are likely to remain in those fields, while those who do not complete may move into other occupations.

Females who completed traineeships experienced a 10 percentage point advantage in full-time employment compared with non-completers, but the non-completers were still better off than those young women who did no post-school study. For females, completion of a non-apprenticeship VET course was an advantage over those who did not undertake any form of post-school study, but if

they did not complete, there is little difference in their experience of full-time employment compared with the no post-school study group. Both had relatively low access to full-time employment, and for both, about one in five was not in the labour force. Female non-completers of VET qualifications experienced levels of not being in the labour force similar to those of young women who did not commence any post-school study.

Outcomes Experienced by Completers and Non-completers of Non-apprenticeship Courses

The outcomes experienced by non-apprenticeship VET course participants by completion status and sex are shown in Table 25. Female completers of courses at all levels fare much better than non-completers in access to full-time employment with the margin between completers and non-completers varying from about 10 to 30 percentage points. This stands in contrast to the experiences of female apprentices discussed above. Relatively high proportions of female non-completers were out of the labour force, but it is not possible to say whether the non-completion led to that outcome, or that the choice — if indeed it was a choice (see Blau *et al.*, 2005) — led to a decision to discontinue the course.

Male completers of lower certificate courses and of courses whose level was not known fare substantially better than non-completers in access to full-time employment, but the same advantage is not found for diploma and higher certificate programs. This finding seems to suggest that for males, the qualifications barrier to employment is not as high as it is for females.

Table 25 Education and labour force status in 2004 of non-apprenticeship VET course participants by completion status and sex

Sex	Course level	Completion status	N	Education and labour force status, 2004					Total (%)
				Full-time study (%)	Full-time work (%)	Part-time work (%)	Un-employed (%)	NILF (%)	
Female	Diploma	Incomplete	58	3	71	10	0	16	100
		Complete	144	7	80	7	2	4	100
	Higher cert	Incomplete	39	8	49	13	8	23	100
		Complete	108	2	71	12	4	11	100
	Lower cert	Incomplete	18	6	44	6	17	28	100
		Complete	63	8	57	19	5	11	100
	Unknown	Incomplete	11	0	55	27	0	18	100
		Complete	29	3	83	0	3	10	100
Male	Diploma	Incomplete	63	0	83	10	5	3	100
		Complete	101	6	81	9	3	1	100
	Higher cert	Incomplete	10	10	80	10	0	0	100
		Complete	86	6	84	5	3	2	100
	Lower cert	Incomplete	8	0	50	25	25	0	100
		Complete	32	0	91	3	6	0	100
	Unknown	Incomplete	5	0	40	0	40	20	100
		Complete	29	3	86	3	7	0	100
All	Diploma	Incomplete	121	2	77	10	2	9	100
		Complete	245	7	80	8	2	3	100
	Higher cert	Incomplete	49	8	55	12	6	18	100
		Complete	194	4	77	9	4	7	100
	Lower cert	Incomplete	26	4	46	12	19	19	100
		Complete	95	5	68	14	5	7	100
	Unknown	Incomplete	16	0	50	19	13	19	100
		Complete	58	3	84	2	5	5	100

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

Overall, these data indicate that, in terms of ending up in full-time employment, participants in VET programs fared better than those who did not pursue further education and training. This suggests that most VET programs benefit participants' full-time employment outcomes, and far more so if the program is completed. Non-apprenticeship lower certificates, which appear to run counter to this finding, are examined in further detail in Chapter 6.

Outcomes Experienced by Completers and Non-completers by Field of Study

The labour force outcomes of survey participants at their 2004 interviews are shown in Table 26. Data are not disaggregated by sex as resultant frequencies of non-completers in many fields would be too low to permit reliable inferences to be drawn.

In most fields of study, completers fared better than non-completers in access to full-time employment, the difference being about 10 or more percentage points. However, young people who completed qualifications in information technology had less favourable access to full-time employment. A significant difference between this field and others was the relatively high proportion (11%) of completers who continued into further study. If full-time study and full-time employment are combined to form a measure of full-time engagement, then completers of information technology qualifications enjoy an advantage over non-completers similar to that found in other fields of study.

Non-completers from programs in health, management and commerce, food and hospitality, and 'other' were over-represented in the NILF category. These are fields of study that attract high proportions of young women, who had higher levels of not being in the labour force.

Young people who commenced but did not complete programs in the information technology and agriculture and environment fields of study experienced higher than average levels of unemployment.

Table 26 Education and labour force status in 2004 of completers and non-completers by field of study

Field of study	Completion status	Education and labour force status, 2004				NILF (%)	Total (%)
		Full-time study (%)	Full-time work (%)	Part-time work (%)	Un-employed (%)		
<i>Information Technology</i>	Incomplete	0	79	4	11	7	100
	Complete	11	74	9	2	4	100
<i>Engineering</i>	Incomplete	0	73	18	6	3	100
	Complete	1	95	1	2	0	100
<i>Architecture & Building</i>	Incomplete	3	84	6	3	3	100
	Complete	3	93	1	2	2	100
<i>Agriculture & Environment</i>	Incomplete	0	75	6	19	0	100
	Complete	0	93	4	3	0	100
<i>Health</i>	Incomplete	13	60	7	3	17	100
	Complete	5	76	9	2	7	100
<i>Management</i>	Incomplete	4	65	17	0	15	100
	Complete	4	79	7	3	7	100
<i>Creative Arts</i>	Incomplete	na	na	na	na	na	na
	Complete	5	62	24	9	0	100
<i>Food & Hospitality</i>	Incomplete	3	73	9	4	10	100
	Complete	4	78	8	3	7	100
<i>Other</i>	Incomplete	0	57	0	0	43	100
	Complete	0	78	15	2	5	100

Notes: Row percentages may not sum to 100 due to rounding.
'na' is used where too few observations are available to provide a reliable estimate.

EARNINGS AND HOURS WORKED BY COMPLETERS AND NON-COMPLETERS

Weekly Earnings and Hours Worked by Completers and Non-Completers

Data on weekly earnings and hours worked for young people in employment are presented in Figure 11, and in more detail in Table 27.

Table 27 Weekly earnings and hours worked by type of program and sex

Sex	Type of course	Completion status	Weekly earnings (\$)			Hours per week		
			25 th percentile	Median	75 th percentile	25 th percentile	Median	75 th percentile
Female	No post-school study		400	580	684	30	38	40
	Apprenticeship	Incomplete	600	700	700	38	39	45
		Complete	350	548	700	31	40	43
	Traineeship	Incomplete	498	561	700	30	34	40
		Complete	500	600	666	37	38	40
	Non-apprentice VET	Incomplete	380	591	700	30	38	40
		Complete	450	570	700	34	38	40
Male	No post-school study		545	680	900	38	40	50
	Apprenticeship	Incomplete	450	520	742	38	40	44
		Complete	694	805	1002	40	42	50
	Traineeship	Incomplete	531	580	741	38	42	47
		Complete	591	700	800	38	40	46
	Non-apprentice VET	Incomplete	543	700	800	38	40	46
		Complete	520	650	781	38	40	45
All	No post-school study		500	609	793	35	40	45
	Apprenticeship	Incomplete	492	600	700	38	40	45
		Complete	650	800	1000	40	40	50
	Traineeship	Incomplete	502	567	700	30	39	45
		Complete	550	635	750	38	40	42
	Non-apprentice VET	Incomplete	492	610	754	35	40	45
		Complete	500	600	750	35	40	42

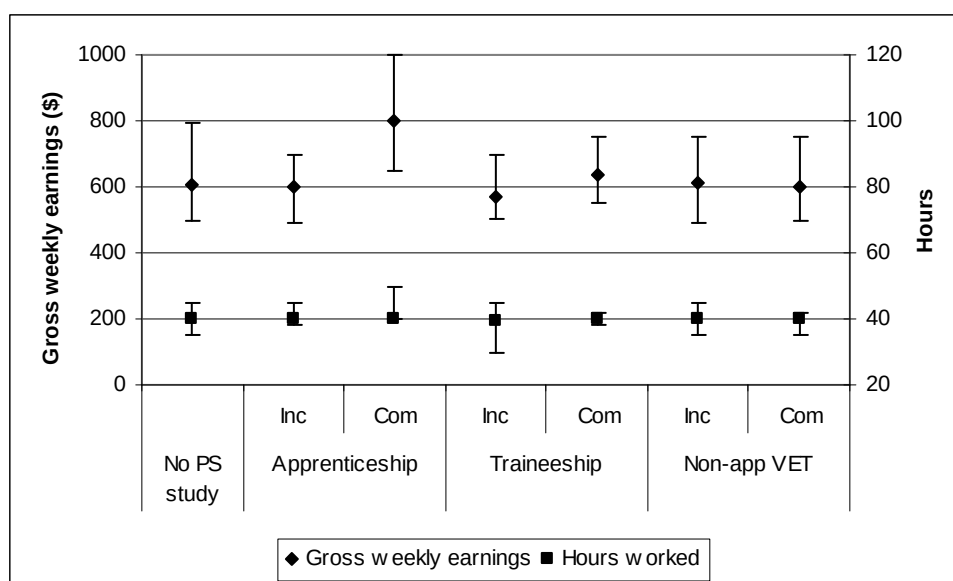


Figure 11 Median weekly earnings and hours worked (bounded by 25th and 75th percentiles) by completers and non-completers by type of program

Young people who did no post-school study have median gross earnings of just over \$600 per week. Those who completed an apprenticeship earned substantially more than this, approximately \$800 per week, while traineeship completers had median earnings of \$635. All non-completers, as well as non-apprenticeship VET course completers, earned approximately the same as the no post-school study group.

When median weekly earnings and hours worked are disaggregated by sex, a rather different situation becomes apparent. The data in the top two-thirds of Table 27 are summarised in Figure 12 for females and Figure 13 for males.

Of particular note is the observation that female weekly earnings for all but apprenticeships are similar to that of the no post-school study group and, very surprisingly, that weekly earnings for apprenticeship non-completers exceed that of the 'no post-school study' group while completed apprenticeships are associated with lower weekly earnings. Among young women who completed apprenticeships, there is considerable variation in both hours worked and weekly earnings. This is consistent with the data presented in Table 24 showing that 22% of female apprenticeship completers were in part-time work. The lower earnings of female apprenticeship completers are likely to be the result of working in the areas of their training. Female earnings in health, food and hospitality, and to a lesser extent in management and commerce, tend to be low (see Figure 6). This finding is consistent with those reported for females by the Australian Bureau of Statistics (2006, pp. 6, 8). Returns to education and training are only apparent for females at diploma levels and above. The ABS survey also finds that returns to females in the 'trade and craft' classification are substantially below those of males in the same classification, although the particular trade or craft occupations of women and men are very different.

Among males, completion of traineeships and participation in non-apprenticeship VET courses is associated with about the same median weekly earnings as the no post-school study group. Failure to complete an apprenticeship or a traineeship results in an earnings penalty compared with the no post-school study group of approximately 20%, while completion of an apprenticeship carries a bonus of approximately 20%.

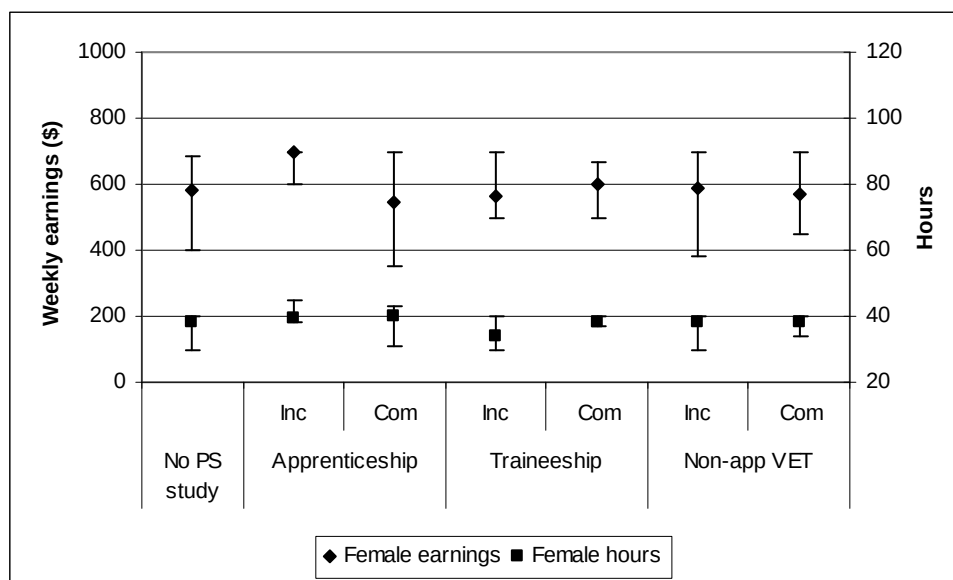


Figure 12 Median weekly earnings and hours worked (bounded by 25th and 75th percentiles) by completers and non-completers by type of program – females

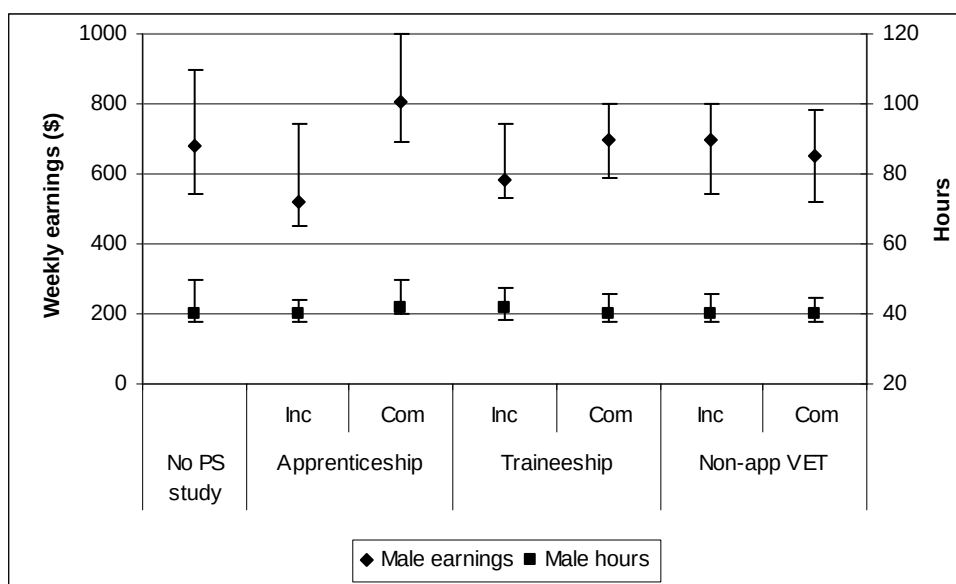


Figure 13 Median weekly earnings and hours worked (bounded by 25th and 75th percentiles) by male completers and non-completers by type of program

Weekly Earnings and Hours Worked by Completers and Non-Completers in Different Fields of Study

With few exceptions, the median number of hours worked per week was consistent across fields of study (see Figure 14). Non-completers of programs in information technology and creative arts tended to work more hours, while those who did not complete programs in health tended to work fewer hours. There is considerable variation in the median number of hours worked by completers of programs in creative arts. These variations are reflected in median weekly earnings, but there are differences in earnings that are not related to the number of hours worked. Completers from programs in engineering and related technologies and architecture and building reported higher than average median earnings, while non-completers from information technology programs also reported high weekly earnings.

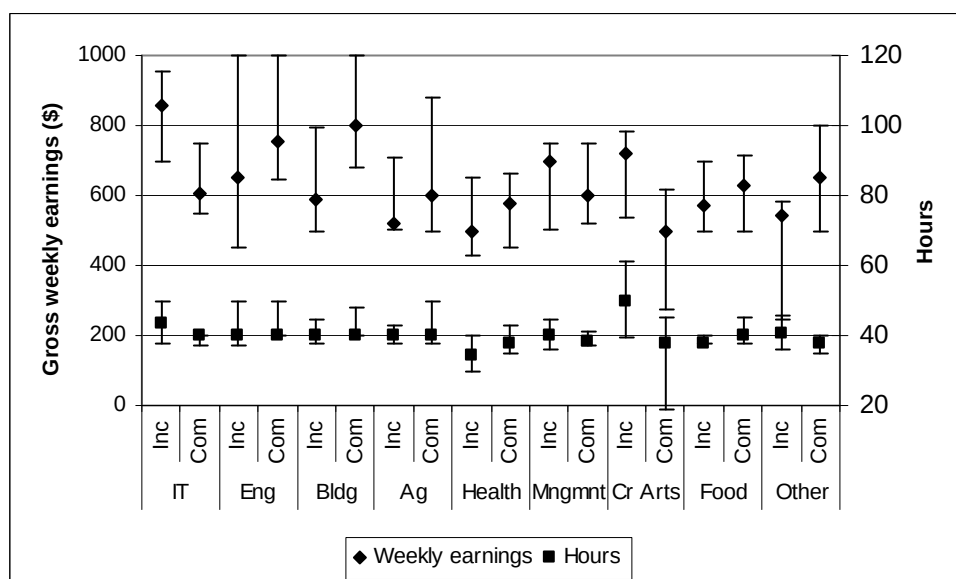


Figure 14 Median weekly earnings and hours worked (bounded by 25th and 75th percentiles) by completers and non-completers by field of study

With the exception of information technology, management and commerce, and creative arts, completers reported higher earnings than non-completers. These exceptional cases may reflect the employment status of the young people who entered them. In information technology and management and commerce fields of study, they may, for example, have been employed in related sectors before commencing their programs and be undertaking training to enhance their skills. If so, they are less likely to complete once they have gained the desired skills. Those people who graduated from programs in the creative arts may have sought employment in that area and may have accepted wage returns lower than those available in other fields.

JOB SATISFACTION OF COMPLETERS AND NON-COMPLETERS

As in previous analyses of job satisfaction, two elements are considered. The first is the proportion of people who report that the job they have is related to their preferred career and the second is a measure of job satisfaction based on responses to eight questions that related to aspects of their work tasks and work environment (see Chapter 4).

Satisfaction with Current Job of Completers and Non-completers

Young people who participated in VET study were more likely than the no post-school study group to have indicated that the job they had was career-related (see Table 28). Completers of traineeships and non-apprenticeship VET courses were more likely, by about 10 percentage points, to indicate that their jobs were career-related than were non-completers of these programs. For apprenticeships, for females and males combined, the situation was rather different. A very high proportion (almost 80%) of non-completers of apprenticeships indicated that their job was related to a preferred career.

Table 28 Satisfaction with current job of completers and non-completers by type of program and sex

Sex	Type of course	Completion status	Job as career, 2004			Total (%)
			Related to career (%)	Not related to career (%)	Undecided (%)	
Female	No post-school study		48	47	6	100
	Apprenticeship	Incomplete	79	16	5	100
		Complete	71	21	9	100
	Traineeship	Incomplete	47	53	0	100
		Complete	64	31	4	100
	Non-apprentice VET	Incomplete	50	42	8	100
		Complete	60	37	3	100
Male	No post-school study		52	43	5	100
	Apprenticeship	Incomplete	76	18	6	100
		Complete	78	17	4	100
	Traineeship	Incomplete	53	35	12	100
		Complete	65	30	5	100
	Non-apprentice VET	Incomplete	51	44	5	100
		Complete	62	32	6	100
All	No post-school study		50	45	5	100
	Apprenticeship	Incomplete	76	18	6	100
		Complete	78	18	5	100
	Traineeship	Incomplete	51	43	5	100
		Complete	64	31	5	100
	Non-apprentice VET	Incomplete	51	43	7	100
		Complete	61	34	4	100

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

Almost 80% of males said their jobs were career-related, whether they had completed apprenticeships or not. However, more female apprenticeship non-completers said their jobs were career-related than did female apprenticeship completers. This may be related to the observation that female apprenticeship completers received lower median earnings than non-completers and those who had not commenced any post-school study. As noted previously, a relatively high proportion of female apprenticeship completers—more than 20%—were working part-time.

Completers of traineeships and non-apprenticeship VET courses were more satisfied that their jobs were career-related than were non-completers. Non-completers of these qualifications were no more satisfied with their jobs than were the no post-school study group. Apprentices were generally very satisfied that their jobs were part of a preferred career, but completers of these qualifications were no more satisfied than non-completers, and for females, the reverse appears to hold.

Satisfaction with Current Job of Completers and Non-Completers by Field of Study

Table 29 shows the proportions of completers and non-completers in programs from the various fields of study who regard their jobs as career-related. Considerable variation is apparent between fields. In engineering and related technologies, health, and management and commerce, completers tended to regard their jobs as being career-related. In information technology, more of those who had not completed qualifications tended to regard their jobs as being part of their career paths than did completers. In the remaining fields, perceptions of jobs as being career-related were either not differentiated between completers and non-completers or there were too few non-completers to draw reliable inferences. Differences in the perceptions of jobs as career-related were somewhat greater between fields of study than they were between completers and non-completers. This suggests that satisfaction with a job as part of a career path may have more to do with the enterprises in which young people work rather than some general characteristics of the fields of study that have been undertaken.

Table 29 Satisfaction with current job of completers and non-completers by field of study

Field of study	Completion status	Job as career, 2004			Total (%)
		Related to career (%)	Not related to career (%)	Undecided (%)	
<i>Information Technology</i>	Incomplete	65	30	4	100
	Complete	60	30	9	100
<i>Engineering Technologies</i>	Incomplete	63	27	10	100
	Complete	77	19	4	100
<i>Architecture & Building</i>	Incomplete	75	18	7	100
	Complete	78	19	4	100
<i>Agriculture & Environment</i>	Incomplete	85	15	0	100
	Complete	76	16	7	100
<i>Health</i>	Incomplete	50	42	8	100
	Complete	65	34	1	100
<i>Management & Commerce</i>	Incomplete	45	53	3	100
	Complete	61	34	5	100
<i>Creative Arts</i>	Incomplete	na	na	na	na
	Complete	44	52	4	100
<i>Food & Hospitality</i>	Incomplete	58	36	7	100
	Complete	62	31	6	100
<i>Other</i>	Incomplete	na	na	na	na
	Complete	54	42	4	100

Notes: Row percentages may not sum to 100 due to rounding.
 'na' indicates that too few observations were available to provide a reliable estimate.

Job Satisfaction of Completers and Non-completers

The degree of job satisfaction of individuals by completion status and type of program is indicated in Figure 15. Although an analysis of variance indicated that there were significant differences between the categories, the effect sizes are quite small. Apprentices appeared to express a higher level of satisfaction with their jobs than did individuals who had participated in other types of program, including those who did no post-school study. Trainees who did not complete their programs appeared to be less happy in their jobs than did trainees who completed. However, participants in traineeships and non-apprenticeship VET courses, whether they were completed or not, appear to have led to similar levels of job satisfaction as the no post-school study group.

The degree of job satisfaction reported by male and female completers and non-completers follow similar patterns (see Figure 15). Females were generally more satisfied with their jobs than males from all types of program. Both male and female former apprentices were more satisfied with their work than young people from all other types of program, but female non-completers had slightly higher levels of satisfaction than completers. Other differences, although consistent for both males and females, were not statistically significant.

Although there were differences in the degree of job satisfaction between fields of study, the differences between completers and non-completers within the fields were quite small and non-significant. Where differences were apparent, the numbers of individuals in the non-completion category were very small and could not lead to reliable estimates.

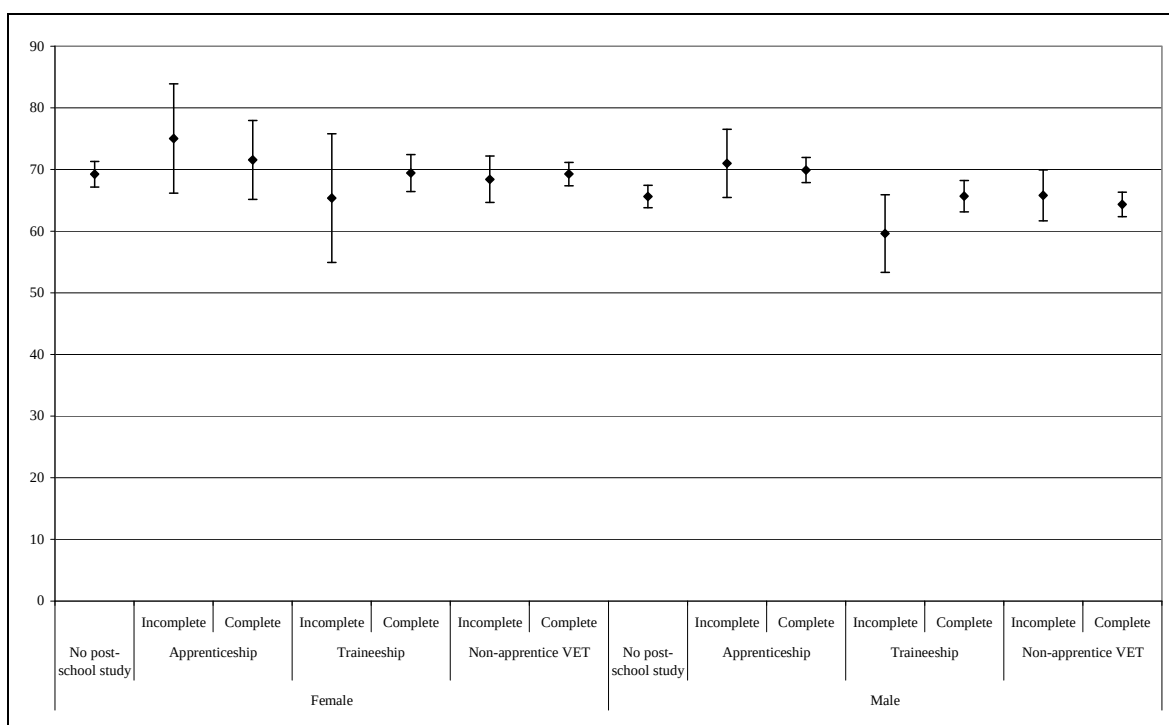


Figure 15 Median job satisfaction (bounded by 25th and 75th percentiles) by completion status and type of program

SUMMARY

- Completers of VET programs experience on average a 10 percentage point bonus in access to full-time study or work compared with non-completers, and a 7 percentage point reduction in being unemployed or out of the labour force.
- Participants who did not complete their program generally fare better in labour market access than young people who did no post-school study.
- In one case only — female apprenticeships — completers fared less well than non-completers in terms of the likelihood of being in full-time employment. On the other hand this was partly compensated by a higher proportion being in part-time employment. This finding is likely to be related to the fields of training taken by female apprentices. Completers are much less likely to be unemployed or not in the labour force than non-completers (5% compared to 18%).
- Males who complete lower certificate programs experience much greater access to full-time employment than non-completers. The advantages to higher certificate and diploma programs are less marked. Females who complete higher level certificates experience substantially better labour force outcomes than non-completers, but the difference is less marked for lower certificate qualifications.
- For females, weekly earnings differ relatively little whether programs were completed or not. For males, completion of apprenticeships is associated with well above average weekly earnings, while non-completers of apprenticeships or traineeships receive below average weekly earnings.
- Completers are more likely than non-completers to indicate that their current job is career-related. An exception is that female apprenticeship completers are less likely than non-completers to make this judgment.

6. NET BENEFITS ASSOCIATED WITH VET PARTICIPATION

In previous chapters the characteristics of people who entered VET and the pathways that they followed through it were examined. The proportions of people who completed their programs, the outcomes associated with VET pathways, and the effects of non-completion were explored. In this chapter, the net employment benefit of VET program participation is investigated. In particular, employment benefits are surveyed by selected individual characteristics.

The major aspect of ‘employment benefit’ — namely access to full-time employment — is considered. This has been selected as the focus of analyses because it is the outcome that most young people initially seek and it is a key indicator of the economic return on human capital investment for individuals and the community. Other LSAY work has shown that gaining employment soon after leaving education is a key predictor of longer-term success (Marks, 2006). Of the outcomes assessed in previous chapters, full-time employment most differentiated the course-related influences.

LABOUR FORCE OUTCOMES FOR ALTERNATIVE VET PATHWAYS

Respondents’ labour force status was assessed at the 2004 interview as being either full-time-study, full-time work, part-time work, unemployed, or not in the labour force (NILF). For comparison purposes, those young people who had not commenced any formal post-school study by 2001 are also included. Using the full-time employment of those who did no post-school study as a baseline, the effects of each of the three main types of VET program can be assessed by the increase in the percentage of full-time employment experienced by individuals of particular characteristics.

The full-time employment rate of the comparison group is shown in the first column in Table 30. For each type of VET program, the advantage relative to the comparison group is shown. Any disadvantage appears as a negative entry. These outcomes are disaggregated by the selected individual characteristics.

As shown in earlier chapters and in Table 30, the outcomes for young people who do no post-school study are poorer than those for most of the individuals who have embarked on programs of study in VET. The baseline values for particular groups are of intrinsic interest. They enable categories of individuals to be identified who are ‘at risk’ of marginal labour force activities.

Table 30 shows that for both males and females, all types of VET programs were associated with gains in full-time employment. For females, traineeships provided the greatest gains, while for males, apprenticeships were associated with the greatest probability of full-time employment.

Indigenous young people who did no post-school study were particularly disadvantaged in the labour market, with full-time employment rates of only 36%. The benefits for Indigenous young people to participation in apprenticeships, traineeships and non-apprenticeship VET courses were very high at 55, 30 and 25 percentage points, respectively.

Young people in the lowest Year 9 achievement quartile gained substantially from participation in VET compared with their peers who did not undertake post-school study. Their advantage in full-time employment associated with participation in apprenticeships, traineeships and non-apprenticeship VET courses was 30, 17 and 11 percentage points, respectively. These were approximately twice the gains made by high literacy and numeracy achievers who took similar programs.

Those who did not complete their secondary schooling and who did no further formal study were at a disadvantage in access to full-time employment. Participation in apprenticeships provided the greatest gain for this group. For school completers, apprenticeship participation is also advantageous, but traineeships also conferred a substantial advantage.

Table 30 Advantage in full-time engagement by VET program type and selected individual characteristics

Characteristic	Full-time work (%)	Full-time work advantage relative to 'No Post-school Study' group (+ percentage points)		
	No post-school study	Apprenticeship	Traineeship	Non-apprenticeship VET
<i>Sex</i>				
Female	60	12	16	9
Male	78	17	9	4
<i>Indigenous status</i>				
Non-Indigenous	71	21	12	4
Indigenous	36	55	30	25
<i>Location of residence</i>				
Metropolitan	70	20	11	9
Regional	66	24	16	3
Rural or remote	72	25	8	-2
<i>Parent occupation</i>				
Professional & Managerial	78	18	13	1
Clerical	68	24	6	10
Trades	71	20	4	-2
Labour	62	30	17	6
<i>Parent's education</i>				
Incomplete Year 12	63	28	9	12
Completed Year 12	69	24	15	8
Trade qualification	83	6	5	-16
Higher education	79	11	13	0
<i>SES quartile</i>				
High SES	74	21	-2	2
Mid-high SES	78	16	11	2
Low-mid SES	73	20	8	1
Low SES	64	30	17	8
<i>Achievement quartile</i>				
Lowest quartile	61	30	17	11
Second quartile	74	16	5	0
Third quartile	73	20	15	4
Highest quartile	75	15	5	6
<i>School sector</i>				
Government	68	22	14	4
Catholic	74	22	1	5
Independent	73	17	9	11
<i>School completion</i>				
Did not complete Year 12	62	26	7	1
Completed Year 12	74	20	13	3
<i>Any VET in School</i>				
No VET study in school	73	20	10	2
Some VET study in school	67	21	18	9

Young people who studied VET while at school enjoyed a similar advantage from apprenticeship participation compared with those who did no VET studies. The former VET-in-school students did benefit more from subsequent traineeships.

Collectively, on indicators related to social status (parents' education and occupation), those young people from the lowest social status categories made the greatest gains from apprenticeships. Traineeships and non-apprenticeship VET courses had different patterns of relative advantage. Indeed, non-apprenticeship VET courses tended to favour those from higher social status categories. The benefit of apprenticeship participation appears to apply to sub-groups on all characteristics investigated.

Overall, in Table 30 the greatest gains from VET participation went to those from the most disadvantaged social groups (Indigenous and low SES) and those with the poorest Year 9 achievement results in literacy and numeracy.

Some Caveats

An important caveat is expressed in relation to the above analysis. The suggested advantage in full-time employment would be a true indicator of the influence of each alternative pathway if the characteristics that are sought in employees were equally distributed among the individuals in the comparison group and in each of the VET pathways. This is not uniformly the case. For example, individuals in the lowest quartile of academic achievement are slightly more likely to be in the no post-school study group than in apprenticeships, traineeships or non-apprenticeship VET courses.⁷ If employers favour high literacy and numeracy achievement, they are more likely to select people with those attributes, and therefore to hire VET participants. This hiring decision may not be a consequence of candidates' experience in the sector, but it will be reflected in the employment rates of individuals from the sector. However, the VET pathways themselves are designed to equip individuals with skills required in industry, and hiring decisions based on skills developed through participation in the sector do reflect the contribution of the sector to employment outcomes. Because of these confounding influences, the magnitude of relative full-time employment advantage should be regarded as an indicator, but not a precise measure, of the influence of each VET pathway relative to the situation of the no post-school study group.

The no post-school study group does enjoy one advantage compared with non-apprenticeship VET participants, and that is their labour force experience. Marks (2005) showed that experience of employment leads to subsequent employment and earnings advantages compared with those who lack this experience. On this basis, full-time non-apprenticeship VET course participants are likely to be disadvantaged at this fairly young age by their more limited labour force experience compared with the no post-school study group.

A third problem with the cross-tabulation of labour force outcomes by individual characteristics is that they are not independent. For example, early school leavers are disadvantaged in the labour market compared to school completers, but early school leavers are more likely to have lower academic achievement. Thus, the relative labour market advantage that accrues to one sub-group of a particular characteristic may not be entirely due to their standing on that attribute.

A Model of Outcomes Following VET Participation

The analyses reported above did not separate the influences of individual sociodemographic factors from VET participation on outcomes. In this section, multivariate modelling is used to separate these influences statistically and thereby to identify the net benefits attributable to VET participation and program completion.

The Multivariate Model

The shortcomings of the cross-tabulations described above can be overcome through the use of multivariate analytic techniques in which all relevant variables are analysed simultaneously. Multivariate methods allow the influence of each attribute to be assessed, net of the effects of other characteristics. What is not possible is the inclusion of 'all relevant variables'. Not all variables thought to be relevant have been collected and quantified (even if they could be). Moreover, there is a limited number of cases and as more variables are added to the model, available cases are subdivided into the combination of categories until each sub-group contains too few cases for the

⁷ An exception to this general rule is that apprenticeship participants had slightly better numeracy achievement than did the no post-school study group.

reliable estimation of parameters. For this reason, the most parsimonious model that captures the major variables influencing the outcome is desired.

It has been necessary to collapse categories in variables used in subsequent analyses. The labour force status outcome variable has been dichotomised into the ‘full-time engagement’ and ‘not full-time engagement’ categories. Full-time engagement comprises full-time study and full-time work. Very few individuals are in full-time study, but previous analyses have shown that from some fields of study (for example information technology), subsequent full-time study has been a common outcome. Part-time employment, unemployment and not being in the labour force (NILF) are classified as not in full-time engagement.

The full list of variables used in the model is shown in Table 31 and they are described in detail in Appendix 1. One consequence of the very parsimonious model is the relatively small proportion of the total variance in labour market success explained within the models, from 5 to 17%.

Results are shown separately in Table 31 for females and Table 32 for males. The tables show the odds ratio, relative to the reference category, of a person of that attribute having a successful labour force outcome. The reference category for each attribute is indicated in the table beneath the attribute label.

Four successive refinements of the model are shown. The first data column models the influences of selected individual characteristics on making a successful labour market transition without considering any influences of any form of post-school study (Model 1). The next column models the effect of *participation* in VET study compared with no post-school study (Model 2). The third column shows parameters for a model that emphasises *completion* of VET programs (Model 3). The final column is a development of the third refinement and takes into account *field of study* (Model 4).

THE BENEFIT TO VET PARTICIPATION

This section examines the columns of Table 31 (females) and Table 32 (males) labelled ‘Participation in VET program’ (Model 2).

The Year 9 reading and numeracy achievement scores were standardised, and the odds ratio indicates the likelihood that a person with a score one standard deviation above average has in making a successful labour market transition compared with a person of average achievement on this measure. For females, having a high numeracy score was advantageous.

Indigenous young women are shown to be at a very substantial disadvantage in making successful labour market transitions. The odds ratio decreases slightly when VET pathways are introduced into the model, suggesting that those who do not pursue one of these paths are somewhat more disadvantaged than those who do. The two location variables, regional and rural, were both significant and had odds ratios below 1.0. Young women from non-metropolitan locations were two-thirds as likely as their metropolitan peers to make a successful labour market transition, all other factors being equal.

Parental occupation has also been shown to have exerted a significant influence on employment outcomes, net of other effects including SES which was included in the model. Young women whose parents were in trades occupations were less likely to secure full-time employment (or study) than those with parents in professional, paraprofessional and managerial occupations.

Table 31 Labour market success by selected individual attributes, for participation in and completion of VET programs – Females, excluding university participants

	Individual characteristics (Model 1)	Participation in VET program (Model 2)	Completion of VET program (Model 3)	Completion of VET program and FOS (Model 4)
	Odds ratio	Odds ratio	Odds ratio	Odds ratio
<i>Scaled variables</i>				
Year 9 Reading	1.10	1.10	1.10	1.11
Year 9 Numeracy	1.20	1.20	1.20	1.20
<i>Indigenous status</i> (Ref: Non-Indigenous)				
Indigenous	0.26	0.22	0.22	0.23
<i>Location</i> (Ref: Metropolitan)				
Regional	0.61	0.61	0.64	0.64
Rural	0.67	0.66	0.65	0.65
<i>Completed Year 12</i> (Ref: Incomplete)				
Completed Year 12	2.54	2.42	2.38	2.36
<i>VET in school</i> (Ref: No VETIS)				
Some VETIS	0.83	0.87	0.88	0.88
<i>Parents' occupation</i> (Ref: Prof/Manager)				
Clerical	0.78	0.76	0.74	0.75
Trades	0.65	0.66	0.66	0.66
Labour	0.81	0.80	0.79	0.80
<i>VET program</i> (Ref: No PS study) ^a				
Apprenticeship		1.49	0.77	0.81
Traineeship		2.72	2.64	2.40
Non- apprenticeship VET		1.53	1.74	1.65
<i>Reich category</i> (Ref: Service)				
Symbolic				1.24
Production				0.79
Constant	2.19	1.61	1.72	1.71
Nagelkerke's R ² (%)	9.2	11.7	12.2	12.4

Notes: Odds ratios shown in bold are significant at the 0.05 level, in black are significant at the 0.10 level, and in grey are non-significant. FOS = Field of Study.

^a The reference category is No post-school study for Models 1 and 2, and No post-school study or non-completion of post-school VET for Models 3 and 4.

The above variables are 'fixed' factors and not amenable to intervention in the short-term at least. Subject choice, school completion and participation in post-school programs are more open to policy influence. Having taken VET-in-school subjects is shown to have been non-significant, even for this reduced sample from which university participants have been removed. Having completed Year 12 was advantageous in the labour market for young women. It made them almost 2.5 times as likely to secure full-time employment (or study) as young women who left school before completing Year 12.

An interesting observation is the significance of Year 9 numeracy achievement on later full-time employment or study. The effect persists unchanged, even when other factors are introduced into the model. This reinforces the importance of lifting young people's achievement in literacy and numeracy.

For young women, participation in an apprenticeship had a positive, but non-significant influence on making a successful labour market transition. Completion of apprenticeships, however, is shown to have a negative influence (net of other factors) on making a successful transition. For those who undertook a non-apprenticeship VET course, the labour force outcome was positive compared with the no post-school study group. Young women who participated in traineeships were more than twice as likely as those who did no post-school study to secure full-time labour force engagement. Completion of traineeships and non-apprenticeship courses was strongly related to later labour market success.

The situation for young men, summarised in Table 32, was slightly different from that of young women. Their reading and numeracy achievement did not have a significant influence on their progress into the labour market. This is a little surprising, as a favourable numeracy score was associated with entry into apprenticeships (see Table 4). It is likely that the influence of this factor is mediated by Year 12 completion and perhaps later through apprenticeship participation. Indigenous young men did not reveal the disadvantage that was apparent for Indigenous young women. Young men from regional and rural locations did not suffer the disadvantage experienced by young women from those locations in securing full-time labour force engagement. The parameters were non-significant, but for males from regional locations they were greater than 1.0, suggesting that there may be relatively more job opportunities in those locations for young men.

Compared with young men whose parents were professionals, paraprofessionals and managers, those whose parents were in clerical, trades and labouring occupations were at a disadvantage in accessing full-time work or study, although the parameters for clerical and trades occupations are not significant.

The study of VET-in-school subjects had no significant bearing on subsequent labour force outcomes. Having completed Year 12 was very significant, improving labour market prospects by a factor of more than three compared with those who did not complete Year 12 at school. This finding stands in contrast to Marks (2006) who found that Year 12 completion was not highly significant. However, he had modelled labour market status in the first year out of school and much of the variation in later labour market success was explained by early post-school labour market experience. Dockery (2005) found that the benefits to school completion were not uniformly distributed across the sample and that there may be a penalty to Year 12 completion for 'the non-academically inclined'. In the present study, the influence of Year 12 completion has been modelled across the full sample — that is, not differentially for low and high achievers. Resolution of the differences in the findings of the present study with those of Marks (2006) and Dockery (2005) requires path analysis, in which the effects of Year 12 completion and VET-in-school study on initial and then longer-term labour force status could be estimated.

The outcomes attributable to participation in post-school VET programs were rather different for young men compared with young women. Young men who participated in apprenticeships were greatly advantaged, having more than a sixfold improvement in their likelihood of finding full-time work. Traineeships and non-apprenticeship VET pathways, although their parameters were positive, did not present a significant boost to full-time engagement.

Of the VET pathways examined in this report, the most beneficial one into the labour market for young women was a traineeship, while the most beneficial for young men was an apprenticeship. Young men benefited much more from apprenticeship participation than did young women from traineeships.

Table 32 Labour market success by selected individual attributes, for participation in and completion of VET programs – Males, excluding university participants

	Individual characteristics (Model 1)	Participation in VET program (Model 2)	Completion of VET program (Model 3)	Completion of VET program and FOS (Model 4)
	Odds ratio	Odds ratio	Odds ratio	Odds ratio
<i>Scaled variables</i>				
Year 9 Reading	0.99	1.02	0.99	1.00
Year 9 Numeracy	1.12	1.08	1.10	1.11
<i>Indigenous status</i> (Ref: Non-Indigenous)				
Indigenous	2.07	1.57	1.38	1.51
<i>Location</i> (Ref: Metropolitan)				
Regional	1.32	1.19	1.18	1.15
Rural	1.01	0.96	0.95	0.91
<i>Completed Yr 12</i> (Ref: Incomplete)				
Completed Yr 12	3.00	3.47	3.39	3.63
<i>VET in school</i> (Ref: No VETIS)				
Some VETIS	1.50	1.43	1.33	1.41
<i>Parents' occupation</i> (Ref: Prof/Manager)				
Clerical	1.02	0.96	0.93	0.87
Trades	0.88	0.83	0.82	0.78
Labour	0.58	0.55	0.53	0.50
<i>VET program</i> (Ref: No PS study)				
Apprenticeship		6.07	11.85	9.44
Traineeship		1.59	1.82	2.39
Non-apprenticeship VET		1.14	1.76	2.18
<i>Reich category</i> (Ref: Service)				
Symbolic				0.44
Production				1.29
<i>Constant</i>	2.75	1.79	1.76	1.83
<i>Nagelkerke's R² (%)</i>	6.3	12.9	15.2	17.0

Notes: Odds ratios shown in bold are significant at the 0.05 level, those in black are significant at the 0.10 level, and those in grey are non-significant. FOS = Field of Study.

The number of Field of study categories was greatly reduced by using Reich's (1991) classification. This is discussed below in the section 'The influence of field of study'.

Net Employment Benefit and Individual Attributes

Before moving on to discuss qualification completion, one of the questions of policy interest is: 'What is the net employment benefit of participation in VET programs and does this differ by individual characteristics?' Successive refinements to the model of employment success can be used to answer this question.

The first two data columns in Table 31 (females) and Table 32 (males) modelled the influences of selected individual characteristics without considering the effects of VET completion. For females, two factors exert a net positive influence on making a successful labour market transition: having a high Year 9 numeracy score and completing Year 12. Several factors — coming from a regional or rural home location rather than a metropolitan one and having parents in clerical, trades or labouring occupations rather than professional or managerial ones — were associated with significantly poorer labour market transitions. For each of these attributes, the likelihood of making

a successful labour market transition was approximately two-thirds that of the comparison group. Indigenous young women are a particularly disadvantaged group.

If participation in VET programs either inhibited or enhanced the labour market transition, the odds ratio associated with the variable would change when VET program participation was added to the model. For example, if VET participation redressed the disadvantage of living in a non-metropolitan location for females, the odds associated with VET participation would be greater than 1.0 and the odds associated with a non-metropolitan location would decrease from their levels in the 'individual characteristics only' variant of the model.

For females, a comparison of the odds ratios in the 'individual characteristics only' with the 'participation in VET programs' columns reveals that there is almost no change in the parameters of individual characteristics. The greatest change is in the parameters for Year 12 completion, which reduced from 2.54 to 2.42. This was found to be a non-significant difference.

For males, the largest parameter change was also for Year 12 completion, which increased from 3.00 to 3.47. However, this difference proved also to be non-significant.

The individual attribute parameters change little across the four versions of the model. From this analysis, the conclusion must be drawn that VET *participation* neither entrenches pre-existing advantage nor ameliorates any disadvantage associated with prior characteristics.

THE BENEFIT TO QUALIFICATION COMPLETION

In this section, the focus is on the benefit to *completion* of VET qualifications. While it is desirable to model both participation and completion together, the relatively small number of non-completions makes many of the cell sizes too small for reliable parameter estimates; those who participated but did not complete are classified along with the no post-school study group.

For females, the odds ratio for labour market success following apprenticeships moved from 1.49 for participation (an advantage) to 0.77 for completion (a disadvantage). It should be noted that neither of these parameters is significant. This may be surprising, as completion would be expected to confer advantages over participation. However, this result can be understood by reference to Table 24 which shows that 22% of female apprenticeship completers were in part-time work and fewer completers than non-completers were in full-time work. In this model, part-time work is classified as an unsuccessful outcome. Completion of traineeships made little difference to the odds of a young woman being in full-time work or study (2.64) compared with participation (2.72). Both parameters are highly significant. Participation in non-apprenticeship VET courses had a small, positive (1.53) influence on successful labour force involvement. However, when completion is modelled, the parameter is 1.74 and is highly significant.

For males, the odds ratio for labour market success moved from a highly significant 6.07 for participation in apprenticeships to 11.85 for completion, an even greater advantage. Participation in traineeships was found not to exert a significant labour market benefit for males, but completion of traineeships did improve the odds of a young man being in full-time work or study (1.82), but even that parameter is non-significant. Participation in non-apprenticeship VET courses had a small, positive but non-significant (1.15) influence on successful labour force involvement. However, when completion is modelled, the parameter is 1.76 and is significant.

After considering the results of the two models of labour market success, one focusing on participation and the other considering only completion, several conclusions can be drawn.

For females, neither participation nor completion of apprenticeships increased full-time engagement. Participation in traineeships improved full-time engagement, and completion more so. Participation in non-apprenticeship VET courses led to significantly better outcomes than those experienced by young women who did no post-school study, but completion was even more beneficial.

Males gained great benefit from participation in apprenticeships and they made even greater gains from completion of those programs. Males derived no significant benefit in full-time engagement from participation in or completion of traineeships, compared with those who did no post-school study, net of other factors in the model. Participation in non-apprenticeship VET courses alone did not result in a significant gain compared with the no post-school study group, but completion of these qualifications did result in a significant advantage.

The Influence of Field of Study

One of the problems with the above analysis is that it assumes that the benefits occur because specific programs lead to specific outcomes, for example that apprenticeships lead to favourable employment. However, some jobs, which are in high demand, also require a period of apprenticeship. It may be argued that the availability of work leads to successful apprenticeship programs rather than programs leading to successful outcomes. For this reason, it is necessary to examine the employment outcomes by field of study.

In previous analyses, field of study was categorised into 12 groups, and for some analyses, several groups were collapsed. In the present multivariate analyses, even the reduced number of categories is too large to enable stable estimates to be generated, so out of statistical necessity, an alternative classification was employed, based on Reich's (1991) three-part typology. Reich argued that types of labour can be categorised as symbolic/analytic processing, routine production and in-person service. Maglen and Shah (1999) suggested that a categorisation based on this typology would be more useful than the labour force classification systems more commonly used.

Field of study based on Reich's typology was added to the model shown in Table 31 (females) and Table 32 (males). The natural and physical sciences, information technology and management and commerce were classified as symbolic/analytic fields; engineering and related technologies and architecture and building were classed as routine production, and the remaining fields were categorised as in-person service. In-person service was used as the reference category, and the other two were included in the revised model.

Notable changes from the previous model are only observed for males. Apprenticeship remained a very successful labour market pathway, but the ratio of its advantage compared with no post-school study fell from 12 to 9, indicating that some of the advantage to apprenticeship is attributable to the occupations in which they occur. The advantage of the traineeship pathway over no post-school study has increased slightly from 1.8 to 2.4 and is significant ($p < 0.05$). Completion of the non-apprenticeship VET pathway showed an enhanced advantage when the influence of field of study is modelled, moving from 1.76 to 2.18 and becoming highly significant. For females, the revised model explains no more of the variance in employment outcomes, but for males there is a slight increase (R^2 of 17.0% rather than 15.2%).

For males, VET programs in symbolic/analytic fields resulted in significantly poorer labour force outcomes than those resulting from in-person service programs. The influence of programs in the routine production areas was not significantly different from the in-person service field. For young women, this broad classification of field of study did not influence labour force outcomes.

THE BENEFIT OF LOWER CERTIFICATE VET PROGRAMS

Results in Chapter 4 suggested that participation in lower certificate programs might not result in higher employment outcomes. This section explores outcomes from lower certificate programs in more detail to ascertain whether these results still hold after disaggregation of the data on lower certificate outcomes. It should be noted that the analyses in this section refer to a subset of the sample. Only individuals who did either no post-school study or those who did lower certificate programs are included, and the findings apply to this subset and cannot be generalised to the cohort. The findings are relevant to those young people who might contemplate lower certificate programs in addition to or instead of Year 12 completion.

Some lower certificate programs are traineeships or apprenticeships and some are non-apprenticeship courses. Whether a contract of employment was part of the study or not is likely to have a significant bearing on subsequent labour force engagement. In a separate study (Curtis, 2007), the outcomes associated with non-apprenticeship VET courses were reported. Some reference will be made below to this study.

Entry into lower level VET programs is intended primarily for early school leavers (ABS, 2001, p. 52) and are often 'enabling' or 'pre-vocational' in nature. In order to address the effectiveness of these programs, the outcomes that result from them are compared with the outcomes associated with no post-school study for both early school leavers and for students from the lower bands of early secondary academic achievement.

About 14% of VET participants did not know the level of qualification they had taken. It is possible that many of these young people had commenced lower certificate programs and should be included in these analyses. However, given that over one-quarter of apprentices did not know the level of their qualifications and that most apprenticeships are at higher certificate levels, there is no sound basis for attempting to reclassify the 'unknowns'. The missing data that result from qualifications of unknown level limit the inferences that can be drawn.

School Non-completers and Lower Certificate Participation

The education and labour force outcomes of young people who did no post-school study are compared with those who undertook lower certificate VET programs, whether they completed them or not, in Table 33. In a separate analysis, the outcomes of completers and non-completers of lower level programs are compared (Table 34). It is interesting to compare the labour force outcomes of Year 12 non-completers who undertake lower certificate programs with the outcomes experienced by Year 12 completers who do no post-school study. This addresses the issue of the effectiveness for early school leavers of lower certificates as a substitute for Year 12 completion.

Two columns of Table 33 are of particular interest: the one showing the percentage of young people in full-time work and the one showing the percentages not in the labour force (NILF). Of the young women who left school without completing Year 12 and who did no further study, 51% were in full-time work. Of those who undertook lower certificates, a similar percentage (52%), were in full-time work, but a further 8% were in full-time study.⁸ A second observation is that those who commenced lower certificate programs were less likely than the no post-school study group to be not in the labour force (16% compared with 27%). Thus, for female non-completers it appears that lower certificate courses have been advantageous.

⁸ These were individuals who were in full-time study in 2004. Others may have participated in study between 2001 and 2004, but not have been engaged in this activity in 2004, thus it is very likely that this number underestimates the progression from lower certificates into other study.

Table 33 Education and labour force status in 2004 of lower level certificate participants by school completion status and sex

Sex	School leaving status	Post-school study	N	Education and labour force status, 2004					Total (%)
				Full-time study (%)	Full-time work (%)	Part-time work (%)	Unemployed (%)	NILF (%)	
Female	No Year 12	No PS study	154	1	51	12	8	27	100
		Lower cert	79	8	52	14	10	16	100
	With Year 12	No PS study	250	2	66	14	6	12	100
		Lower cert	119	3	76	8	3	8	100
Male	No Year 12	No PS study	169	3	72	9	10	6	100
		Lower cert	101	0	88	5	2	5	100
	With Year 12	No PS study	267	1	81	7	8	3	100
		Lower cert	158	1	91	4	4	1	100
All	No Year 12	No PS study	322	2	62	11	9	16	100
		Lower cert	180	3	72	9	6	10	100
	With Year 12	No PS study	517	2	74	11	7	7	100
		Lower cert	277	2	85	6	4	4	100

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

Among young women who completed Year 12, participation in lower certificate programs was associated with a 10 percentage point improvement in full-time employment and a 4 percentage point reduction in being out of the labour force. Female school completers appear to be advantaged by participation in lower certificates.

The full-time engagement of female Year 12 non-completers who did lower certificates is 60%, while Year 12 completers who did no further study have a full-time engagement rate of 68%. Thus, for females, lower certificates are less effective (by 8 percentage points) than Year 12 completion. When non-apprenticeship lower certificate courses are considered, this difference is 20 percentage points (Curtis, 2007, p. 12).

Males who did not complete Year 12 and who commenced lower certificate programs enjoyed a 16 percentage point advantage in full-time employment over school non-completers who did no further study. Much of this increase is related to a reduction in unemployment among those who undertook lower certificate programs. For male school completers, there is also an advantage to lower certificate participation over no post-school study of 10 percentage points in access to full-time employment.

The full-time engagement of male Year 12 non-completers who did lower certificates is 88% while Year 12 completers who did not further study have a full-time engagement of 82%. Thus, for males, lower certificates are more effective (by 6 percentage points) than Year 12 completion. When non-apprenticeship lower certificate courses are considered, this difference is 6 percentage points in favour of Year 12 completion (Curtis, 2007, p. 12). Thus the advantage that males derive from lower certificate programs is largely attributable to apprenticeships and traineeships.

Comparing Completion and Non-completion of Lower Certificate Programs

An issue of policy interest is the outcomes that follow completion rather than non-completion of lower certificate programs. Lower certificate programs are regarded as providing a link between school education and vocationally-specific preparation for the labour market. They may lead to successful employment outcomes directly, or they may facilitate access into other programs such as higher certificates, apprenticeships or traineeships.

The estimate of full-time study, shown in Table 34, is for full-time study in 2004. Any study that may have occurred in 2002 or 2003 has not been included, so it is very likely that the estimate

given in the table understates the total progress from lower certificates to other programs. This is a significant limitation and the data should not be taken to represent fully the outcomes to lower certificate participation.

The main purpose of this analysis is to examine the labour force outcomes that follow lower certificate participation and completion, and if lower certificate qualifications were followed by higher certificate courses or Australian Apprenticeships, then an indirect relationship may be claimed for the lower certificate qualification. The analysis is restricted to non-apprenticeship VET courses. The table shows that non-completers, both male and female, fare substantially less well than lower certificate completers in access to full-time employment, the difference overall being approximately 20 percentage points. Completers are slightly more likely than non-completers to have pursued further study, and much less likely than non-completers to be either unemployed or not in the labour force. Thus it appears that completers of lower certificate non-apprenticeship VET courses fare better than non-completers on all education and labour force status indicators tested.

Table 34 Education and labour force status in 2004 of non-apprenticeship lower-level certificate courses

Sex	Lower certificate completion status	N	Education and labour force status, 2004				NILF (%)	Total (%)
			Full-time study (%)	Full-time work (%)	Part-time work (%)	Unemployed (%)		
<i>Female</i>	Incomplete	19	11	42	5	16	26	100
	Complete	66	12	55	18	5	11	100
<i>Male</i>	Incomplete	8	0	50	25	25	0	100
	Complete	39	8	82	5	5	0	100
<i>All</i>	Incomplete	27	7	44	11	19	19	100
	Complete	105	10	65	13	5	7	100
<i>Total</i>		132	10	61	13	8	9	100

Note: The frequencies of some cells, especially for non-completers, are low so caution should be exercised in drawing inferences from them.

Lower Academic Achievers and Lower Certificate Participation

Females in the lowest quartile of academic achievement who did no post-school study had a full-time employment rate in 2004 of 49% (see Table 35). Those who had undertaken lower certificate programs had a full-time employment rate of 73% (a 24 percentage point advantage). For the lower certificate participants, reductions in part-time work, unemployment and being out of the labour force were apparent. For lower achieving females, lower certificates were associated with substantial labour market advantages. The same gains were not apparent for females in the other achievement quartiles. For non-apprenticeship courses, the advantage following lower certificate participation by low achieving females was 9% (Curtis, 2007, p. 12).

The full-time employment rate of males in the lowest achievement quartile who did no post-school study was 72%. For those who did a lower certificate program, the full-time employment rate was 92%, a 20 percentage point advantage. Across all other achievement levels, males who had undertaken lower certificate programs were at an advantage compared with the no post-school study group. For non-apprenticeship courses, the advantage following lower certificate participation by low achieving males was 4 percentage points (Curtis, 2007, p. 12).

Participation in lower certificate programs by early school leavers and low academic achievers, both male and female, was beneficial. The benefits derived from lower certificate participation by low achieving individuals are greater for males and females from apprenticeships and traineeships than from non-apprenticeship VET courses.

Table 35 Education and labour force status in 2004 of lower level certificate participants by achievement quartile and sex

Sex	Achievement quartile		N	Education and labour force status, 2004					Total (%)
				Full-time study (%)	Full-time work (%)	Part-time work (%)	Unem-ployed (%)	NILF (%)	
<i>Female</i>	Low quartile	No PS study	154	2	49	16	12	21	100
		Lower cert	83	4	73	10	6	7	100
	Sec. quartile	No PS study	107	1	66	16	5	12	100
		Lower cert	58	3	60	12	7	17	100
	Third quartile	No PS study	92	3	67	10	5	14	100
		Lower cert	40	5	65	10	3	18	100
	Top quartile	No PS study	51	2	67	10	0	22	100
		Lower cert	15	7	60	20	7	7	100
	Low quartile	No PS study	166	2	72	13	10	4	100
		Lower cert	112	0	92	2	3	4	100
<i>Male</i>	Sec. quartile	No PS study	128	2	80	2	12	4	100
		Lower cert	59	0	88	8	3	0	100
	Third quartile	No PS study	79	0	80	9	6	5	100
		Lower cert	57	0	86	9	4	2	100
	Top quartile	No PS study	62	3	82	6	3	5	100
		Lower cert	31	0	94	0	3	3	100
<i>All</i>	Low quartile	No PS study	320	2	61	14	11	12	100
		Lower cert	195	2	85	5	4	5	100
	Sec quartile	No PS study	235	1	74	9	9	8	100
		Lower cert	119	3	74	10	5	8	100
	Third quartile	No PS study	171	2	73	9	6	10	100
		Lower cert	98	2	77	9	4	8	100
	Top quartile	No PS study	113	3	75	8	2	12	100
		Lower cert	45	2	84	7	4	2	100

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

Earnings and Hours Worked by Lower Certificate Participants

Other indicators of labour market success are the number of hours worked per week and weekly earnings. These data are compared, in Table 36, for young people who had commenced lower certificate programs with those who had not undertaken post-school study. There was very little difference in the number of hours of work per week between the no post-school study group and lower certificate participants. However, there were differences in their reported earnings. Male lower certificate participants earned approximately 5% more than those who did no post-school study, but for females, the situation was reversed, with lower certificate participants earning about 5% less than the no post-school study group.

Females and males who participated in lower certificate programs experienced greater access to full-time employment than did members of the no post-school study group.

Compared with the no post-school study group, participation in lower certificate programs was advantageous for school non-completers and school completers and for low academic achievers for both males and females. Males from higher achievement bands were also advantaged by undertaking lower certificates, although no advantage was observed for higher achieving females.

Table 36 Comparison of weekly hours worked per and earnings for lower certificate participants and no post-school study group by sex

		Hours worked per week			Gross weekly earnings (\$)		
		25 th percentile	Median	75 th percentile	25 th percentile	Median	75 th percentile
<i>Female</i>	No post-school study	30	38	40	400	580	684
	Lower certificate	32	38	40	390	550	650
<i>Male</i>	No post-school study	38	40	56	545	680	900
	Lower certificate	38	40	48	600	717	950
<i>All</i>	No post-school study	35	40	45	500	609	793
	Lower certificate	35	40	45	524	650	800

One of the roles of lower certificate programs is to provide a pathway into higher level qualifications. The study by Curtis (2007) on non-apprenticeship lower certificates found that approximately one-third of individuals whose first course was a lower certificate undertook further study, and that fewer than half of those who did continue undertook study at a higher level.

The findings in this section are consistent with those reported by Dockery, Koshy and Stromback (2005) but at odds with those reported by Stanwick (2005). However, Stanwick's findings were based on the VET national data collection and necessarily examined short term returns to training. Dockery *et al.* noted the importance of examining longer-term as well as immediate benefits to training. Lower certificate courses coupled with labour force experience appear to provide better labour force outcomes than does time in the labour force alone.

SUMMARY

- Greater access to full-time employment is found for all three VET pathways compared with no post-school education or training.
- Net of other factors, completion of traineeships and non-apprenticeship VET courses provide better full-time employment outcomes for young women compared with those who do no post-school study. Apprenticeship completion does not seem to have a favourable net influence on full-time employment outcomes for young women, and this is largely explained by the fields in which female apprentices typically work.
- For males, net of other factors, completion of apprenticeships and of non-apprenticeship VET courses leads to better full-time employment outcomes, but traineeships do not have an influence independent of individual characteristics.
- Individuals' socio-demographic characteristics operate differently for young men and women in terms of their impact on the likelihood of finding full-time employment. In particular, non-metropolitan locations and being Indigenous have a negative impact, net of education factors, for young women but are neutral for young men.
- Participation in lower certificate programs appears to be advantageous for both males and females and school completers and non-completers compared with young people who do no post-school study. These effects are stronger for lower certificate apprenticeships and traineeships than for non-apprenticeship courses.
- Young people who complete lower certificates are more likely to be in full-time employment or full-time study and less likely to be out of the labour force or unemployed than non-completers of these qualifications.
- Male and female low academic achievers appear to be advantaged in access to full-time employment following lower certificate qualifications, compared with doing no post-school study.
- Males who complete lower certificate programs earn higher weekly wages than do young men who do no post-school study.

7. SUMMARY AND CONCLUSIONS

This chapter provides an overview of the major findings of this report. It is organised around the key questions that drove the research:

- What are the characteristics of the young people who pursue education and training programs in VET?
- What proportion of the young people who commence VET programs complete them and why do people leave these programs without completing them?
- What outcomes are experienced by young people who undertake VET programs? Do these outcomes differ for completers and non-completers of the programs? Is participation in lower certificate programs associated with beneficial outcomes for low academic achievers?

In order to explore these questions, data collected as part of the Longitudinal Surveys of Australian Youth for the cohort of young people who were in Year 9 in 1995 have been used. Education and training programs commenced by 2001 and outcomes experienced in 2004 were included in the analyses. The progress of young people into five main post-school pathways has been tracked. The pathways are: no post-school study or training; apprenticeships; traineeships; non-apprenticeship VET courses; and university courses. The main focus is on the three VET pathways.

About 80% of individuals undertook some form of post-school education and training program and just over half of these involved VET programs. Twenty % of the cohort commenced an Australian Apprenticeship and almost one-quarter commenced a non-apprenticeship VET course.

Characteristics of VET Participants

Apprenticeships

The large majority (85%) of the apprenticeship commencements were by males. Other factors positively associated with apprenticeship commencement were having left school before Year 12 and being in a lower achievement quartile. Factors with weaker but positive relationships with apprenticeship commencement included having a parent who was a tradesperson and who had a technical or trade qualification and being from a low to medium SES background. In multivariate analyses, some of these factors were found not to be significant. While young people from non-metropolitan locations are less likely than others to undertake post-school education and training, apprenticeships are particularly important post-school pathways for young males from regional locations.

Traineeships

Traineeships, like apprenticeships, involve contracts of employment and training. They were developed in 1985, and after 1996 their uptake grew rapidly. It was at about this time that the Y95 cohort began to enter the labour market. Traineeships tended to be in areas other than those covered by traditional apprenticeships and often involved lower level (Certificate I and II) qualifications. This aspect of traineeships has changed (Cully, 2006).

The set of SES variables, including parent's occupation, parent's education and a measure of SES, all showed that traineeships are undertaken by all but the highest SES groups. Of the traineeships reported by members of the Y95 cohort, 59% were taken by young women. Net of other factors, school completion was positively associated with traineeship participation compared with the no post-school study pathway.

Traineeships are particularly important post-school pathways for cohort members living in rural and remote locations and for Indigenous young Australians.

Non-apprenticeship VET Courses

Almost one-quarter of respondents reported that they had commenced a non-apprenticeship VET program by 2001. Diploma and higher level qualifications made up 42% of courses, higher certificates 32% and lower certificates 18%. About 9% of respondents did not know the level of the qualification they were taking.

Females accounted for 59% of non-apprenticeship VET course commencements. The distributions of males and females over the various levels of qualification are similar. On most socio-demographic variables, there are relatively weak relationships with the level of qualification attempted.

There were differences in the level of qualification commenced by school level attained, with young people who did not complete Year 12 having lower certificates as their modal qualification (36% were in this category) while 48% of school completers were enrolled in diploma level qualifications. Those in the lowest achievement quartile were less likely than those in the highest quartile to enrol in diploma programs, but over all achievement quartiles, diploma level qualifications were the most common. Although young people from a non-English speaking background were less likely than those from English-speaking backgrounds to undertake VET programs, two-thirds of other language speakers who did enter non-apprenticeship VET courses undertook diploma level qualifications.

Persistence in VET Programs

Over 80% of Australian Apprentices complete their training. This estimate is somewhat higher than the approximately 70% completion rate estimated for traditional apprenticeships and 60% for traineeships from VET administrative data collections (Ball & John, 2005, p. 27). The higher estimate arising from the LSAY data may reflect some under-reporting of program commencements that were terminated before the annual interviews and through the greater attrition of non-completers from the survey.

Reasons given by young people for non-completion of apprenticeships include not getting on with supervisors and not liking the type of work. Those who did not complete their traineeships cited health and personal factors or finding better work as reasons for non-completion. Non-apprenticeship course participants' reasons for discontinuing their study include wanting to get a job or apprenticeship, loss of interest in the course, and finding that the course was not what they had expected. They also experienced difficulties managing their work and study commitments.

Persistence (completion or continuation) in non-apprenticeship VET courses is related to qualification level, with diploma levels having the lowest persistence (65%) and the lower certificates the highest (83%). This may be related to the length of the courses, but other factors, such as the field of study also have an effect.

Persistence varied by field of study from a low of 67% for society and culture to a high of 87% for creative arts programs. There is an interaction between program type and field of study. Persistence was much lower in apprenticeships in food and hospitality, commerce and in non-apprenticeship courses in building (less than two-thirds of young people complete), than in apprenticeships in building and in traineeships in agriculture and environment, where more than 90% complete.

There are weak relationships between individual characteristics and individual contextual factors and persistence. Persistence among young women undertaking apprenticeships appears to be low, but it is a characteristic of the fields of training that young women undertake.

Outcomes of VET Pathways

The indicators on which variation in outcomes was most apparent were labour force status, especially full-time employment, and gross weekly earnings. These outcomes cannot be attributed uniquely to VET program type. They are also likely to reflect the characteristics of the young people who choose particular pathways, the labour markets associated with particular programs, and with the labour force exposure that young people gain either through or independently of any education and training program they undertake.

Type of Program

Compared with the no post-school study group, all three types of VET programs resulted in better full-time employment outcomes. Full-time employment outcomes were highest following apprenticeships (91%), followed by traineeships (81%) and then non-apprenticeship courses (75%). Males benefited most from their involvement in apprenticeships, with 94% experiencing full-time employment.

The experience of unemployment over the year preceding the 2004 interview was variable by both course type and gender. Over 80% of the sample experienced no unemployment during the year. For former apprentices, the experience of any unemployment was even lower, especially for males. Males who commenced non-apprenticeship VET courses experienced more unemployment than other groups, but this experience was not shared by females.

Males who undertook apprenticeships reported substantially higher earnings than did other groups. Young people who commenced traineeships or non-apprenticeship VET courses did not have higher earnings than the no post-school study group, but the latter had generally been in the labour market longer.

Consistently more apprentices reported that the jobs they held were career-related than did participants in other types of VET study. In addition, more males than females indicated that their current jobs were related to their preferred careers. Males also expressed slightly greater satisfaction with their work than did females, although the differences are modest.

Level of VET Program

The most favourable labour force outcomes, indicated by full-time employment and earnings, were experienced by males who had undertaken higher certificate programs. However, these are mostly apprenticeships and in a limited number of fields of training.

For females, diploma level courses were associated with the highest level of full-time employment, and that form of employment declined with program level. Young women with higher level qualifications also reported higher earnings than women with lower level qualifications. However, the reverse is true for males. For males, higher salaries were associated with apprenticeships, and lower salaries with non-apprenticeship VET courses, the source of diploma level qualifications.

Field of Study of VET Program

There is some variation in the level of full-time employment associated with various fields of study. However, some fields that appear to be beneficial for males are less so for females. Males benefited most from programs in the fields of study engineering and related technologies, architecture and building, agriculture and environment, and health. Young women benefited most from programs in information technology, and agriculture and environment.

Males were more likely than females to say that their jobs were career-related. This varies by field of study, with almost 80% of males and females from agriculture and environment programs

viewing their current jobs in this way. In other fields there were substantial differences between males and females. In information technology, young women were more likely than young men to indicate that their job was career related.

Outcomes Experienced by Completers and Non-Completers

Three main outcomes — labour force status, weekly earnings and hours worked, and job satisfaction — were compared for completers and non-completers of VET programs. Completers and non-completers have participated in similar programs, and no systematic differences were detected in the characteristics of completers and non-completers.

Completion Compared with Non-Completion of Different Types of Program

While apprenticeship participation is associated with superior labour force outcomes compared with those who did no post-school study, apprenticeship completion is associated with the greatest access to full-time employment, at 93%, and with the highest median gross weekly earnings at \$800.

The advantages to apprenticeship completion are not uniformly distributed. Female apprenticeship completers experienced slightly lower access to full-time employment and earned slightly less than non-completers. A high proportion (22%) of female apprenticeship completers experienced part-time employment and they were less likely to be unemployed or out of the labour force. These outcomes are likely to be related to the fields of training taken by female apprentices.

Traineeship completers experienced a slight labour market advantage compared with non-completers. Completers, compared with non-completers, experienced slightly greater access to full-time employment, were earning slightly more per week, and a greater proportion of them said their jobs were career-related.

Completion of non-apprenticeship VET courses was associated with a 10 percentage point gain in access to full-time employment compared with non-completion. Whether they completed or not, non-apprenticeship VET course participants reported similar earnings to the no post-school study group. Completers of non-apprenticeship courses were more likely than either non-completers or those in the no post-school study group to view their current job as being career-related.

The Net Benefit to VET Programs

Net benefit to VET program participation was assessed relative to the group who did no post-school study. The multivariate models were limited because of the small number of variables that could be accommodated in the analyses. Some factors did, however, emerge as highly significant.

The outcomes attributable to *participation* in post-school VET programs are rather different for young men compared with young women. Young men who had participated in apprenticeships were greatly advantaged, having more than an eightfold improvement in their likelihood of finding full-time work. Traineeships and non-apprenticeship VET pathways, although their parameters are positive, were not associated with a significant boost to full-time labour force engagement.

The most beneficial VET pathway for young women into the labour force was via traineeships. Having participated in a traineeship more than doubled the likelihood of a young woman being in full-time employment or study compared with those who did no post-school study. Young women also benefit significantly from non-apprenticeship VET course participation but not from apprenticeship participation, other factors equal.

The multivariate modelling indicated that the greatest net benefit to *completion* of VET programs for young men was from an apprenticeship. This benefit may derive from factors associated with apprenticeship programs rather than the apprenticeship itself. Male apprenticeship completers were 11 times more likely, other factors held constant, to be in full-time employment than were young men who had done no post-school study. Completing a traineeship did provide a significant boost to a young man's full-time labour force participation. Male traineeship completers were more than twice as likely to be in full-time employment as those who had done no post-school study. Completing a non-apprenticeship VET course made full-time labour force participation twice as likely as it was for males who had not done post-school study.

For young women, the greatest net benefit follows traineeship completion. They were more than twice as likely to be fully engaged in the labour market as young women who had done no post-school study. Completion of a non-apprenticeship VET course made full-time labour market participation almost twice as likely as it was for females who had done no post-school study.

The Benefit of Lower Certificate Program Participation

Compared with the no post-school study group, participation in lower certificate programs was associated with favourable labour force outcomes for school non-completers and school completers, and for low academic achievers, both male and female. Participation in lower certificates by males from higher achievement bands was also associated with labour market advantages compared to those who did no post-school study, although no similar advantage was observed for higher achieving females.

IMPLICATIONS

The study's findings have underlined the importance of VET as a pathway from school to work for significant numbers of young people. The major implications that arise from the study relate to advice that might be provided to young people, especially in the early years of secondary schooling. This appears to be the time when intentions for schooling and post-school pathways are formed.

Improved Career and Program Information

Differences in non-completion by field of study, particularly among apprentices and trainees, suggests that there are factors in the information available about programs before young people commence them that could be addressed through making information more readily available and providing young people with authentic experiences of the industry before contracts of training are signed. The interpersonal difficulties that some apprentices reported could be addressed by ensuring they appreciate the structured and possibly hierarchical nature of workplaces. In addition, attention might be paid to interpersonal conflict resolution in 'communication in the workplace' units of competency. These units might need to be offered in the early stages of training programs. Workplaces, too, may need to accommodate the expectations of a new generation of young people.

For young people who are about to enrol in non-apprenticeship courses, better information about the courses prior to enrolment might overcome the problem of unmet expectations. More flexible methods of course delivery, a significant recent initiative in VET, might help to address the problem of managing work and study commitments. The problem of balancing the demands of work and study extends beyond VET, as it has been noted in both the school and higher education sectors.

VET Participation

The advantages to VET participation over no formal post-school education and training suggest that school leavers who plan to do no further study should be identified before leaving school and advised about their prospects. A lack of clear information about potential VET courses and careers is likely to lead to individuals having poorer labour force outcomes than they might otherwise achieve.

On most indicators for most types of program and for most fields of study, completers enjoy advantages over non-completers. Decisions to discontinue programs appear to be based on factors related to the work environment and to unmet expectations within programs. These factors together suggest the need for quality advice about the characteristics of programs and their outcomes before commencement in order to minimise the rate of non-completion and the less favourable outcomes that attend it.

However, some qualification to this general advice is warranted. It is apparent that the outcomes experienced by some young people are less favourable than they may have imagined before embarking on their programs. These have less to do with decisions about completion and more to do with the types of programs that they undertake and the careers that they envisage as a result of their studies. The literature on career choice (Gottfredson, 2002; Holland, 1985) suggests that gender typing is a major factor in young people's decision-making. It appears that some fields of work that are predominantly female lead to limited work opportunities. The fact that many young women who have completed qualifications work part-time, and therefore experience modest earnings, appears to lead to reduced job satisfaction. Better information about the opportunities in various occupations at an early stage in students' career decision-making might encourage young women especially to consider a broader range of career options with the possibility of more favourable outcomes.

Non-completion

The study indicates that while participation in most VET programs is beneficial, there are considerable further advantages from course completion. Completion rates were found to vary significantly by program type, program length, and field of study. There needs to be ongoing research and attention to identifying and minimising the causes of course attrition.

The lack of any clear relationships between personal characteristics and leaving VET programs suggests few policy initiatives that could be directed at particular groups and that might address the problem of program attrition. Differences in withdrawals by program level are largely accounted for by the length of programs and field of study factors.

Low Achievers, School Non-completers and Lower Certificates

There are clear benefits for both males and females of participation in VET pathways rather than in entering the workforce without any form of post-school education and training. In particular, the advantages of lower certificate participation for low academic achievers suggest that this group needs to be made fully aware of opportunities to undertake lower certificate programs. Completion of lower certificate programs is associated with favourable labour force outcomes directly, and there is evidence that they lead to other study and training opportunities that in turn may enhance young people's labour force outcomes. Those young people who do enter the workforce directly from school are the most obvious target group for interventions designed to enhance their labour market success and to redress skills shortages being experienced now and those projected into the future.

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APPENDIX 1 DATA AND METHODS

DATA

The 1995 LSAY Year 9 Cohort

The data used for this report are based on responses from a sample of the cohort of young people who were in Year 9 in 1995 (the Y95 cohort). This sample forms part of the Longitudinal Surveys of Australian Youth (LSAY) program. The young people in this sample responded to a printed questionnaire and to reading comprehension and numeracy tests conducted in their schools in 1995, to a mailed questionnaire administered in 1996, and to telephone interviews conducted annually since then. For analyses of participation in the VET sector, data on course commencements up to 2001 were used. For later analyses on the outcomes of VET pathways, data up to the 2004 survey were used.

The initial sample included 13 613 respondents from approximately 300 government, Catholic and independent schools from all Australian states and territories. In the 2001 survey, responses were received from 6876 individuals and by 2004, 4660 individuals provided useable responses. The modal age of respondents in 2004 was 23 years. By 2004, sample attrition was 66%. Because attrition was not uniform, sample weights were used to reflect the original population characteristics. Unless otherwise specified, data presented in tables are based on weighted proportions of sample respondents. The weighting procedures used for the sample are described by Marks and Long (2000).

Participants in VET Pathways for the Y95 Cohort

Approximately 80% of young people in the survey had completed Year 12 at school. Eighty % of young people surveyed undertook some form of post-school education and training. Approximately 10% entered apprenticeships, a further 10% commenced traineeships, 20% began non-apprenticeship VET courses (most in TAFE institutes, but some with private VET providers) and 40% undertook higher education courses.

Three pathways dominate VET. They are apprenticeships, traineeships and non-apprenticeship VET courses. Apprenticeships and traineeships (collectively now called Australian Apprenticeships) involve contracts of training in which an individual agrees to work for an employer and to undertake training for a specified period. That training normally involves an on-the-job component facilitated by and supervised by the employer and an off-the-job component provided by a registered training provider. The registered provider may be a TAFE institute or a private provider such as a business college. Non-apprenticeship VET courses may be delivered by a TAFE institute or a private registered training provider such as a business college. These courses do not involve a contract of training involving an employer, although work placements may be arranged as part of the program.

For the analyses presented in Chapter 2, which focus on the characteristics of VET participants, both young people who had undertaken no post-school study and those who had entered universities were included so that their characteristics could be compared with those of the young people who participated in VET programs.

In Chapters 3 and 4, where the focus was on persistence in and completion of VET programs, VET participants were the main focus. In Chapters 5 and 6, which examined the outcomes of VET programs, young people who had commenced VET programs were the main focus, but for comparison purposes, those young people who had not commenced any post-school education programs were also included.

VARIABLES EXAMINED IN THE REPORT

The variables that were collected during annual interviews or computed from them and used in the report are shown in Figure 2. Variables were selected for inclusion in the study on the basis that they had been shown to be related to the pathways chosen or outcomes achieved or were considered to be of policy interest.

Most background variables, for example each participant's sex, require no explanation. Others require brief clarification.

Year 9 achievement was based on two tests, a reading comprehension and a numeracy test, conducted in school during the first survey year of the cohort. When data were cross-tabulated, the quartile in which each candidate was located on a combination of the two test results was used. In multivariate analyses, the more detailed information contained in each participant's scaled score on the two separate tests was used.

Parental occupation was initially classified into six groups, namely professional and paraprofessional, managerial or administrative, clerical or personal service, trades, plant or machine operator, and labourer. In some later analyses where numbers of participants were reduced, some of these groups were collapsed. In analyses where this was done the categories used and the reasons for the revised categories are provided.

An index of **socioeconomic status** (the ANU3 scale) was used in some analyses. This is an interval scale derived from an individual's occupation. It is described by Jones (1989) and its use in the LSAY program is discussed by Marks (nd).

Parental education was classified as being: a university degree, a trade or technical qualification, completion of secondary school, or less than secondary school completion. Information was available for both mothers and fathers, and the higher of the two levels of education was used for the parent's education variable. It should be noted that despite the education of one parent being used, data were missing on approximately one-quarter of all cases, limiting the extent to which the variable could be used.

Language background can be assessed in several ways. Information was gathered on the language spoken at home and on the language of the participants' countries of birth. In exploratory analyses, it was found that the language of the country of birth differentiated participants effectively and it was used in most analyses. It was dichotomised into English-speaking and non-English-speaking.

Participants' home addresses in Year 9 were used for the **Location** variable. This was assessed as being metropolitan, regional or rural, using the classification developed by Jones (2004), which is based on the size of the city or town.

On the school experience variable '**school sector**' was government, Catholic or independent.

School completion was based on whether participants completed Year 12 at school. No account was taken of the award of a senior school certificate or of an ENTER score or other form of tertiary entrance rank.

VET-in-school was a dichotomous variable recording whether students reported participating in VET-related subjects taught in or organised through their schools. There are some limitations to this variable. It was only assessed in the interviews that were the modal years for participation in Years 11 and 12 at school. Students who completed school later than these years or left earlier were not asked about their participation in this activity, so data are only available for 87% of the sample. There is some reason to believe that there may be a degree of under-reporting of this activity. Based on figures presented by Nguyen (2004) and the Ministerial Council on Education, Employment,

Training and Youth Affairs (2002), the level of under-reporting in 1997 and 1998 appears to be of the order of 5 percentage points. Karmel, Anlezark and Ong (2006) observed that in self-report data, students under-reported their participation in VET-in-school programs. They speculated that this might be due to these programs having little impact on many students. Alloway *et al.* (2004) also found that VET-in-school participation was under-recognised, but attributed this to schools not labelling VET subjects explicitly. Irrespective of the reason for it, under-reporting of VET-in-schools participation places some limitations on the inferences that can be drawn from the tabulated figures. Because of potential under-reporting, and where comparisons are made between those students who did undertake VET-in-schools and those who did not, it is likely that the real differences are somewhat smaller than the reported ones

For VET programs, the **AQF levels** are used to describe the levels at which young people studied. Levels were categorised as diploma and above courses, higher certificate (AQF levels III and IV) programs, and lower certificate (AQF level I and II) programs. A limitation to this variable was encountered when it was realised that 14% of all VET participants were unaware of the level of their programs. Among apprentices, over one-quarter of respondents were unaware of the level of their programs. The missing data that attended this variable compromised some analyses and has limited the implications that can be drawn from them.

In the analyses of labour force status as an outcome following VET participation, it was necessary to identify a program as the main one taken by those individuals who took more than one. (See Appendix 2). The main program was taken to be the one that was completed, but if all programs were completed (or all discontinued) the higher level program was taken to be the main one. Thus, completion took precedence over AQF level.

Twelve **fields of study**, based on the ASCED standard (ABS, 2001) have been recognised in these analyses. These fields of study are: the natural and physical sciences; information technology; engineering and related technologies; architecture and building; agriculture, environmental and related studies; health; education; management and commerce; society and culture; creative arts; food, hospitality and personal services; and mixed field programs. Relatively few individuals reported undertaking mixed-field studies compared with administrative data for the VET sector. It seems likely that some young people, enrolled in mixed field programs, reported their study as being related to fields they wished to pursue.

For one analysis, it was not possible to retain all 12 fields of study, and a much simplified approach employed Reich's (1991) three part typology. In that, employment is classified as symbolic-analytic, routine production and in-person service provision. Although it is a very coarse classification, it is useful in economies in which a transition is occurring from primary and secondary sector activity to higher level analytical work – to the so-called 'knowledge economy'.

Completion status of programs was assessed as being either completed, continuing, deferred or withdrawn. For some analyses, it was convenient to dichotomise this variable. In some analyses it was recast as persistence or non-persistence, in which case completed or continuing programs were classed as persisting, and the others as non-persisting. In later analyses, it was necessary to define completion status more rigidly, in which case only completed qualifications were classified in that way, and all others as incomplete.

When the outcomes associated with VET programs were examined, **labour force status** was classified as full-time study, full-time work, part-time work, unemployment, or not being in the labour force (NILF) at the time of each annual interview.

The transition into the labour market can be patchy, and characterised by periods of employment punctuated with periods of unemployment (Hillman, 2005). One aspect of labour force status that might provide more information than a single category at a point in time is the proportion of the preceding year that was spent seeking work. This was also considered as a labour force outcome.

Whether or not young people who were working participated in **formal or informal on-the-job training** was asked, and if they had experienced any formal training, the number of hours of that training over the year was asked. Training delivered in classrooms or other dedicated training facilities either on or off-the-job was regarded as formal training. Informal training was mentoring or instruction provided incidentally or learning undertaken by the individual.

Job satisfaction was measured in two ways. First, young people who were employed were asked whether the job they held was related to their desired careers. The second measure was based on their responses to eight items that sought information about their satisfaction with the nature of their work and their work context.

Finally, information was sought on the **number of hours** per week they were working (in one or more jobs) and the **gross weekly earnings** derived from that work.

ANALYTIC TECHNIQUES EMPLOYED

The dominant analytic method employed in this report is the cross-tabulation of individual socio-demographic and contextual characteristics by post-school program activities and outcomes. Where it has been possible, given the nature of variables and their distributional properties, multivariate analytical techniques have been used. These include logistic regression when response variables were dichotomous and multinomial logistic regression for variables with multiple categories. These methods are described briefly below.

Some of the constructs that have been assessed in this study, for example job satisfaction, have involved sets of items that reflect an underlying construct. The coherence of these sets of items has been assessed using confirmatory factor analysis and then the Rasch measurement model (see below). When the sets of items revealed adequate measurement properties, a single measure reflecting the underlying construct has been generated and the interval scale measure has been used in subsequent multivariate analyses.

Logistic Regression

Logistic regression is the label applied to a set of very flexible regression methods. The outcome of interest is dichotomous in the more common application of logistic regression. An example question might be ‘What factors are related to completion of Year 12 at school?’ In this case the outcome variable is Year 12 completion and it has two levels; it is either completed or it is not. One level is the reference (not completing Year 12) and the other is the target outcome.

The method is particularly flexible as explanatory variables in the model may be continuous, dichotomous, ordered discrete, or unordered categorical. Few assumptions are made about the distributional properties of the explanatory variables. The method involves finding the optimum linear combination of predictor variables to estimate the log of the odds ratio of one outcome (completion of Year 12) over the alternative (not completing Year 12).

The regression parameters estimated are the log of the odds of the influence of each explanatory variable on the outcome variable. When predictor variables are continuous, the parameter indicates the effect of a unit change in the predictor on the odds of achieving the target outcome rather than the reference outcome. When explanatory variables are dichotomous, for example sex, one level, female, is set as a reference predictor and the alternative, male, become the predictor category. The parameter estimate is the log of the odds of a male completing Year 12 compared with a female. The exponent of the parameter gives the odds ratio.

Multinomial Logistic Regression

In the studies of type of program undertaken and labour force status, the outcome of interest has multiple categories, for example undertaking no post-school education and training, entering an apprenticeship, a traineeship, a non-apprenticeship VET program, or a university course. This application of the method is referred to as multinomial logistic regression. One of the possible outcomes must be defined as a reference category and the remainder are compared with that reference category. Where explanatory variables have multiple categories, one of these is set as a reference and the remainder compared with the reference.

The parameter estimated for each category is the log of the odds of a person in that category compared with someone in the reference category achieving one of the target outcome categories rather than the reference outcome category. The categories chosen as referents for both the explanatory and outcome variables influence the interpretation of the estimated parameters. In the present study, the odds of a person from an independent school, compared with a person from a government school (the reference explanatory category) undertaking a traineeship compared with not taking any form of post-school study (the reference outcome category) was found to be 1.56, and statistically significant ($p < 0.05$). Because the odds are greater than 1, a person from an independent school is more likely than a person who attended a government school of commencing a traineeship compared with not taking any form of post-school study.

An extensive treatment of logistic regression is provided by Tabachnick and Fidell (2007, pp. 437-505).

The Rasch Measurement Model

The Rasch model is used to convert the ordinal responses to test or attitude survey items to interval continuous scores on a measurement scale. It makes certain demands of the data being analysed. It assumes that a single coherent construct underlies the set of items that are used as prompts to elicit responses. If this assumption is not met, this failure will be apparent in a set of fit indices produced in the analysis.

The Rasch model (Rasch, 1960, 1980) posits a logistic response function relating the difficulty of a prompt and the ability of the respondent to the probability of them producing a particular response. The basic dichotomous model was extended to model multiple responses to items, as are used in attitude surveys like job satisfaction in the rating scale model (Andrich, 1978) and then to the partial credit formulation (Masters, 1982).

Instead of modelling a single difficulty parameter for each item, each item has a series of parameters, one for each step in the ordered set of responses. In the job satisfaction items, respondents were asked to endorse one of 'very dissatisfied', 'dissatisfied', 'satisfied' or 'very satisfied'. Because there are four response options, there are three thresholds between them. The probability of endorsing a particular response to an item depends on the strength of a person's satisfaction, the difficulty of agreeing with a particular item, and the added difficulty of each step within the set of possible responses.

The observed proportions of responses from each person to each item are used in an iterative process in the Rasch equations to estimate the parameters for each person and each item. Provided the items conform to the assumptions of the model, verified through a set of fit statistics, the item and person parameters lie on a linear interval measurement scale. The person estimates can then be used in subsequent statistical modelling.

An accessible treatment of the Rasch measurement model is provided by Bond and Fox (2001).

APPENDIX 2 PARTICIPATION IN MULTIPLE POST-SCHOOL PROGRAMS

One of the purposes of the current investigation is to report on the characteristics of young people undertaking different forms of post-school education and training. Where they participate in more than one type of program, their individual characteristics contribute to the aggregate profile of each of the course types attempted. It is therefore necessary to document multiple course involvement and the combinations of programs that were commenced. The numbers of respondents who commenced from none to four post-school programs are shown in Table 37. One person in five did no post-school study, a little over three-fifths of respondents commenced one program, while one in five undertook multiple courses. In all, the 5474 respondents who did some post-school study accounted for 7017 program commencements.

Table 37 Course commencements, by 2001, of Y95 respondents

Number of programs commenced by 2001	0	1	2	3	4
Number of respondents	1402	4159	1112	178	25
Percentage (N=4660)	20.4	60.5	16.2	2.6	0.4

The combinations of post-school programs undertaken are of interest, and an indication of these combinations is provided in Table 38. The cells on the table diagonal reveal the frequencies of respondents who participated in only one type of program, while the remaining cells show the frequencies of people who commenced programs of different types. The information in the table does not indicate the order in which courses of different types were undertaken nor the number of programs of a particular type that were commenced.

Table 38 Frequencies of combinations of post-school program types

	Type of education or training program				
	Non-award	University	Apprenticeships	Traineeships	Non-app VET
Non-award	48				
University	25	2482			
Apprenticeship	11	13	652		
Traineeship	32	76	31	399	
Non-apprentice VET	75	233	83	132	1147
Totals	191	2829	740	670	1670

Finally, in examining multiple program commencements, it is useful to look at the number of people who commenced programs of a particular type. This information is shown in Table 39. Approximately 5% of apprentices and trainees undertook more than one program of that type, a little over 10% of university students commenced more than one university course, and 20% of individuals who did a non-apprenticeship VET course began more than one.

Table 39 Frequencies of commencements of particular post-school program types

Frequency	Type of education or training program				
	Non-award	Higher ed.	Apprenticeship	Traineeship	Non-app VET
1	180	2472	765	625	1368
2	6	329	25	41	249
3	3	27		4	52
4		1			1
Total	191	2829	790	670	1670

Together, the tables presented above reveal a complex pattern of pathways into and through post-school education and training programs. They show that, while most respondents participated in only one program, most multiple course commencements occurred within sectors rather than between them. That is, young people whose first program was a traineeship were most likely to commence a traineeship as a subsequent program.

A more detailed analysis of these pathways is outside the scope of the present investigation, but these tables provide useful background information when examining the characteristics of the young Australians who participate in the types of post-school education and training programs available to them. Additional information on course changes and attrition in higher education is available in McMillan (2005) and in relation to Australian Apprenticeships in Ainley and Corrigan (2005). Information on transfer between the VET and higher education sectors can be found in Moodie (2005) and Harris, Sumner and Rainey (2005).

APPENDIX 3 SCHOOL COMPLETION AND POST-SCHOOL STUDY

The tables in this section show selected characteristics of those young people who either completed or did not complete Year 12 at school (Table 40) and the school completion status and socio-demographic characteristics associated with commencements of the various post-school pathway options available to young people (Table 41).

Of policy interest is the role of the VET pathway for school non-completers compared with school completers. By 2001, 80% of the cohort of young people reported that they had completed Year 12. School completion increased steadily from the early 1980s to the early 1990s then fell, but has since recovered to about the levels of the early 1990s. However, the factors associated with non-completion have remained consistent over that time (Lamb *et al.*, 2000). Completion status is tabulated against selected individual characteristics in Table 40. The characteristics most strongly associated with school non-completion are: being an Indigenous young person, having been born in an English speaking country, having attended a government school, having no intention to undertake post-school education or training, and being in a lower achievement quartile. Other factors also associated with school non-completion are being male, coming from a non-metropolitan location, having parents in manual occupations, and having parents with other than a higher education.

Previous research has shown that early school leavers have a more difficult transition into the labour market than school completers (Lamb *et al.*, 2000; McMillan & Marks, 2003). The question now is 'To what extent does the VET pathway provide an avenue into the labour market for school non-completers?'

In order to explore access to the VET pathway for school completers and non-completers, participation in various post-school pathways for both groups has been tabulated against selected individual characteristics (see Table 41). Participation in post-school education and training is much more common among school completers than non-completers. Approximately 84% of completers participate in some form of post-school study, whereas just under 60% of non-completers embarked upon a post-school education and training program.

Table 40 Selected individual characteristics by school completion status

Characteristic	Non-completer		Completer		Total	
	N	%	N	%	N	%
<i>Sex</i>						
Female	553	15.7	2964	84.3	3517	100.0
Male	833	24.8	2526	75.2	3359	100.0
<i>Indigenous status</i>						
Non-Indigenous	1226	19.4	5104	80.6	6330	100.0
Indigenous	65	45.1	79	54.9	144	100.0
<i>Birth country language</i>						
English speaking	1283	20.8	4887	79.2	6170	100.0
Non-English speaking	31	6.5	445	93.5	476	100.0
<i>Location</i>						
Metropolitan	588	15.5	3200	84.5	3788	100.0
Regional	405	24.4	1255	75.6	1660	100.0
Rural or remote	393	27.6	1033	72.4	1426	100.0
<i>Parent occupation</i>						
Professional	161	11.3	1264	88.7	1425	100.0
Managerial	209	16.0	1097	84.0	1306	100.0
Clerical	191	18.9	822	81.1	1013	100.0
Trades	336	27.7	877	72.3	1213	100.0
Labourer/Plant op	222	22.8	750	77.2	972	100.0
<i>Parent education</i>						
Incomplete secondary school	307	24.5	945	75.5	1252	100.0
Completed secondary school	241	20.8	919	79.2	1160	100.0
Trade or technical qualification	235	22.7	800	77.3	1035	100.0
Higher education qualification	174	9.8	1605	90.2	1779	100.0
<i>Achievement quartile</i>						
Lowest quartile	627	36.7	1081	63.3	1708	100.0
Second quartile	363	20.9	1372	79.1	1735	100.0
Third quartile	234	13.9	1451	86.1	1685	100.0
Highest quartile	157	9.1	1576	90.9	1733	100.0
<i>Post-school study intent</i>						
No intent	362	37.4	607	62.6	969	100.0
Positive intent	934	16.9	4578	83.1	5512	100.0
<i>School sector</i>						
Government	1143	24.6	3504	75.4	4647	100.0
Catholic	166	12.3	1185	87.7	1351	100.0
Independent	77	8.8	801	91.2	878	100.0
<i>Overall</i>	<i>1386</i>	<i>20.2</i>	<i>5490</i>	<i>79.8</i>	<i>6876</i>	<i>100.0</i>

Note: Complete data are not available for all variables. For example, while complete data are available for sex and location, information on parents' education is available for only 76% of cases.

Because the focus of this investigation is on VET pathways, the columns of Table 41 showing commencements of Apprenticeships, Traineeships and non-apprenticeship VET courses are of most relevance to this report. Short course enrolments have not been shown as they attract a small proportion of respondents and there is little variation in participation in these activities on individual characteristics of interest. Similarly, university enrolment is overwhelmingly the province of school completers, although a small number of high SES individuals who do not complete school enter university, presumably through indirect paths such as non-apprenticeship VET programs.

Table 41 Pathways into the labour market for school completers and non-completers by selected individual characteristics

Characteristic	No post-school study		University		Apprenticeship		Traineeship		Non-apprenticeship VET		Totals	
	Without Year 12 (%)	With Year 12 (%)	Without Year 12 (%)	With Year 12 (%)	Without Year 12 (%)	With Year 12 (%)	Without Year 12 (%)	With Year 12 (%)	Without Year 12 (%)	With Year 12 (%)	Without Year 12 (%)	With Year 12 (%)
<i>Sex</i>												
Female	41.6	15.1	3.3	55.1	9.6	2.2	17.4	10.1	30.9	26.5	102.8	109.0
Male	35.5	17.0	1.7	46.0	39.3	13.7	11.8	7.0	17.6	22.4	105.9	106.1
<i>Indigenous status</i>												
Non-Indigenous	37.3	15.5	2.4	51.6	28.3	7.4	13.3	8.5	23.1	24.8	104.4	107.8
Indigenous	32.3	22.5	1.5	40.0	21.5	7.5	27.7	20.0	24.6	25.0	107.6	115.0
<i>Location</i>												
Metropolitan	39.3	14.0	2.6	53.8	29.4	6.1	10.5	6.8	22.6	26.5	104.4	107.2
Regional	40.2	19.2	2.0	47.7	25.4	10.0	15.6	10.3	20.7	21.0	103.9	108.2
Rural or remote	33.3	18.1	2.0	46.0	26.5	8.8	17.6	12.6	25.7	23.3	105.1	108.8
<i>SES quartile</i>												
High SES	30.0	8.6	8.3	72.6	21.7	4.1	16.7	5.2	30.0	18.0	106.7	108.5
Mid-high SES	36.7	11.4	3.6	59.2	30.1	5.6	12.8	8.3	21.9	22.7	105.1	107.2
Low-mid SES	32.5	15.9	2.2	47.2	32.8	9.8	15.3	9.5	22.9	26.1	105.7	108.5
Low SES	40.9	20.7	1.8	41.6	22.6	7.5	15.7	9.4	21.6	27.8	102.6	107.0
<i>Parents education</i>												
Incomplete secondary school	44.6	22.3	0.7	42.1	22.1	7.8	16.6	8.6	19.5	26.7	103.5	107.5
Completed secondary school	34.0	18.5	4.1	46.4	24.1	7.4	17.0	10.5	26.1	25.2	105.3	108.0
Trade or technical qualification	36.2	14.1	3.4	48.3	34.9	10.3	9.8	10.1	24.3	25.4	108.6	108.2
Higher education qualification	31.6	7.4	5.2	70.8	31.0	5.2	14.4	6.4	23.0	18.6	105.2	108.4
<i>Achievement quartile</i>												
Lowest quartile	43.5	25.5	1.0	23.6	26.7	9.8	13.7	9.7	18.4	38.4	103.3	107.0
Second quartile	33.3	19.7	2.5	39.3	27.3	9.0	12.9	10.9	30.3	29.1	106.3	108.0
Third quartile	33.3	13.0	3.4	56.8	26.9	7.9	17.5	9.6	24.4	21.7	105.5	109.0
Highest quartile	33.1	8.9	5.7	74.6	31.8	4.2	12.7	5.1	21.0	13.8	104.3	106.6

Note: Percentages in each row, for school non-completers and completers separately, sum to more than 100 because some individuals undertake multiple post-school pathways.

APPENDIX 4 COMPOSITION OF POST-SCHOOL PATHWAYS

Post-school Pathways

Table 42 and Table 43 are analogues of Table 1 and Table 2 in the body of the report. Those tables show the proportions of young people of particular characteristics (row percentages) who elected to pursue the various pathways available to them. The tables below show the composition of each pathway (column percentages) by young people of given characteristics.

Table 42 Composition of post-school education and training pathways by selected socio-demographic characteristics of participants (column percentages)

Characteristic	Sample %	No post-school study (%)	Non-VET pathways		VET pathways			
			Short course (%)	Higher ed. (%)	Apprenticeship (%)	Traineeship (%)	Non-app VET (%)	Any VET (%)
<i>Sex</i>								
Female	51	48	51	58	15	59	57	47
Male	49	52	49	42	85	41	43	53
<i>Indigenous status</i>								
Indigenous	2	3	3	1	3	5	2	3
Non-indigenous	98	97	97	99	97	95	98	97
<i>Location of residence</i>								
Metropolitan	55	48	56	61	46	42	59	53
Regional	24	29	21	21	29	29	21	25
Rural or remote	21	23	24	17	25	30	21	23
<i>Parent's occupational type</i>								
Professional or paraprof	24	17	23	33	16	17	20	18
Manager or administrator	22	18	23	24	22	23	22	22
Clerical or personal service	17	17	21	16	16	19	18	18
Tradesperson	20	26	20	15	32	21	21	24
Plant or machine operator	3	5	3	3	2	4	4	4
Labourer	13	17	11	10	12	15	14	14
<i>Parent's education</i>								
Incomplete Secondary	24	36	20	17	25	26	26	26
Completed secondary	22	26	23	18	22	27	24	24
Trade or technical qual	20	20	15	17	29	21	22	23
Higher education qual	34	18	41	48	24	25	28	27
<i>SES quartile</i>								
High SES	13	7	11	20	6	8	10	8
Mid-high SES	23	18	17	28	18	21	22	20
Low-mid SES	37	39	44	32	50	41	39	42
Low SES	27	36	27	21	26	30	30	29
<i>Language background</i>								
English	89	91	87	86	95	94	87	90
Other than English	11	9	13	14	5	6	13	10
<i>Country of Birth</i>								
Australia	90	93	90	86	96	94	90	92
OS English speaking	3	2	4	3	3	3	3	3
OS Non-English speaking	7	5	6	11	2	3	7	5

Note: Columns may not total 100 due to rounding.

Table 43 Composition of post-school education and training pathways by selected school-related characteristics of participants

Characteristic	Sample %	No post-school study (%)	Non-VET pathways		VET pathways			
			Short course (%)	Higher ed. (%)	Apprenticeship (%)	Traineeship (%)	Non-app VET (%)	Any VET (%)
<i>Achievement quartile</i>								
Lowest quartile	25	39	29	9	35	29	32	32
Second quartile	25	28	29	19	28	29	31	30
Third quartile	25	19	26	29	22	27	22	23
Highest quartile	25	14	16	42	15	15	15	15
<i>School sector</i>								
Government	68	81	72	54	77	78	71	73
Catholic	20	13	15	25	16	14	19	18
Independent	13	6	14	20	7	8	10	9
<i>Year level attained</i>								
Year 10 or less	12	22	18	0	29	17	10	16
Year 11	9	16	14	1	19	13	9	12
Year 12	80	63	68	99	52	71	81	72
<i>Any VET in School</i>								
No VET study	76	65	73	89	59	67	70	67
Some VET study	24	35	27	11	41	33	30	33

Note: Columns in each category may not total 100 due to rounding.

Levels of Non-apprenticeship VET Course

In the body of the report Table 3 shows the distribution of young people of particular characteristics across the AQF levels (grouped as diploma and above, higher certificates, lower certificates and certificates of unknown level) of non-apprenticeship VET courses. Table 44 shows the composition of each category of course level by individual characteristics (column percentages).

Table 44 Composition of non-apprenticeship VET course levels by selected characteristics

		All levels (%)	Diploma (%)	Higher certificate (%)	Lower certificate (%)	Certificate level unknown (%)
<i>Sex</i>	Female	59	58	63	56	52
	Male	41	42	37	44	48
<i>Indigenous status</i>	Indigenous	2	1	2	3	5
	Non-indigenous	98	99	98	97	95
<i>Location of residence</i>	Metropolitan	58	67	57	46	48
	Regional	20	19	21	23	22
	Rural or remote	21	15	22	31	30
<i>Parent's occupation</i>	Professional or paraprofessional	20	23	17	19	20
	Manager or administrator	22	21	23	23	25
	Clerical or personal service	18	17	18	21	16
	Tradesperson	21	20	22	16	28
	Plant or machine operator	4	3	4	7	4
	Labourer	14	16	14	13	8
<i>Parent's education</i>	Did not complete secondary school	26	24	28	25	25
	Completed secondary school	24	25	23	24	26
	Trade, technical qualification	22	20	20	27	33
	Higher education qualification	28	31	29	23	16
<i>SES quartile</i>	High SES	9	10	8	9	11
	Mid-high SES	22	25	21	18	20
	Low-mid SES	39	36	41	40	48
	Low SES	29	29	30	32	21
<i>Language background</i>	English	87	84	88	94	91
	Other than English	13	16	12	6	9
<i>Country of Birth</i>	Australia	90	86	92	94	96
	OS English speaking	3	3	3	3	0
	OS non-English speaking	7	11	5	3	4
<i>Achievement quartile</i>	Lowest quartile	31	28	31	39	34
	Second quartile	32	31	32	35	29
	Third quartile	22	25	22	17	23
	Highest quartile	14	16	15	9	14
<i>School sector</i>	Government	71	64	75	81	74
	Catholic	19	24	16	11	19
	Independent	10	11	9	8	7
<i>Year level attained</i>	Year 10 or less	11	4	12	25	20
	Year 11	9	4	7	15	21
	Year 12	80	92	81	60	59
<i>VET in School</i>	No VET study	70	70	69	67	72
	Some VET study	30	30	31	33	28

Note: Columns in each category may not sum to 100 due to rounding.