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Post-school education and labour force participation in Canada and Australia

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About the research



Post-school education and labour force participation in Canada and Australia

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A recent report by the Organisation for Economic Co-operation and Development (OECD 2008b) into youth labour markets in OECD countries highlights that, in 2006, half of all young people aged 20 to 24 years in Canada held a post-school qualification, in contrast to 38% in Australia. This is a difference that deserves closer examination, especially when Australia is seeking to considerably increase participation in tertiary education.

Using data from the Longitudinal Surveys of Australian Youth and the Canadian Youth in Transition Surveys, this report focuses on the post-school pathways and outcomes for young adult men and women in Australia and Canada. Austen and MacPhail find distinct differences in the characteristics of students who participate in Australia's vocational education and training (VET) system and Canada's college—as distinct from the university—system.

It needs to be noted, however, that there are marked differences between the two systems, which may impact on the post-school choices young people make. In general, the Canadian college system provides students with the choice of two distinct pathways: a vocational or career pathway via vocationally oriented programs, or an academic pathway to university via pre-university programs. The Australian VET system provides vocational education and training, although there has been increasing attention given to articulation between VET and higher education.

Key messages

- The authors speculate that the Australian VET sector provides students with low educational outcomes or who are from less advantaged family backgrounds with educational opportunities that are not present in the Canadian system.
- In contrast to the Canadian college system, the Australian VET system is not considered an educational pathway of choice for higher achieving school students or those from more advantaged backgrounds. Perhaps this is because Canadian colleges offer a clear pathway to university.
- High educational attainment helps protect young women against withdrawal from the labour market once they become parents. This increased attachment to the labour market is likely to have an impact on employment and earnings chances over the life course.

Tom Karmel
Managing Director, NCVER

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Executive summary

This report explores the different characteristics of the transitions into post-school and/or the labour market of young Australian and Canadian men and women. It makes extensive use of data from the Longitudinal Surveys of Australian Youth (LSAY) and the Canadian Youth in Transition Survey (YITS) to provide insights to cross-national differences and changes in educational and labour market transitions between the two countries.

The context of the analysis presented in the report is an educational environment in each country where levels of educational attainment are rising. The post-secondary school education rate among 25 to 29 year old Australians increased by 11.6 percentage points between 1996 and 2006; in Canada the rate increased by 6.2 percentage points (OECD 2008b). However, young Canadians continue to engage in post-school study at a much higher rate than their Australian peers. In Canada, in 2006, the proportion of young adults aged 20 to 24 years with a post-school qualification was the highest in the group of countries constituting the Organisation for Economic Co-operation and Development (OECD), at 51.9%, whilst in Australia this proportion was only 38.4% (OECD 2008b).

A large part of the difference in rates of participation in post-school education is due to differences in the non-university sector. In Canada this type of education features the college/CEGEP¹ sector and in Australia it features the vocational education and training (VET) sector. Although rates of engagement in university education are similar in the two countries, a much larger proportion of young Canadians participate in college education than do Australians in VET. Furthermore, whilst women are more likely than men to participate in both college and university education in Canada, young women are under-represented in VET in Australia.

These differences in post-school study are likely to impact on the labour market and other chances of young men and women in the two countries for education, partnership etc. A large theoretical and empirical literature in labour economics emphasises the importance of education to labour force participation and earnings over the life course. Recently, the OECD (2008b, p.70) has attributed the trend towards strong employment growth for young Canadian women, in part, to their high rates of participation in post-school education. Another recent OECD report (OECD 2008a) has identified a strong correlation between qualification levels and the employment outcomes of young Australians.

Using data from the LSAY (1995 and 1998 cohorts) and the Canadian YITS (Cohort A and Cohort B), this study contributes new information on the determinants of post-school study and the impact of study on labour market outcomes. Three possible educational choices are identified for young school leavers: enrolment in a bachelor degree (university choice); participation in another type of post-school study (VET or college choice); or no post-school education. Multinomial logit regression techniques are used to measure the relationship between a range of school leaver characteristics and the choice between these alternatives. The characteristics studied include gender, indigenous status, location, language, disability, type of school, Year 12 or 13 completion, parental education and academic achievement at school. A focus of the study is how the relationship between

¹ CEGEP is a post-school institution unique to Quebec and equivalent to a community college.

these attributes and the choice of post-school education varies between young Australians and Canadians.

The findings on the characteristics of participants in post-school study in this report show that there are a number of distinctive features of the group of young people that participates in VET. In particular, the report indicates that in Australia the relationship between participation in VET and high academic achievement at school is not strong. There is also a weak relationship between participation in this type of post-school study and levels of parental education. Each of these findings contrasts with the report's findings on the characteristics of Canadian participants in college/other post-school education. In Canada, non-university post-school study is more likely to be taken by young people with relatively high levels of academic achievement and from more advantaged family backgrounds. This makes it more similar in its characteristics to university education in both Australia and Canada.

These results have significance for education policy on several levels. First, they could indicate that VET provides Australian students with low educational outcomes at school and/or from less advantaged family backgrounds with educational opportunities that are not present in the Canadian system. However, less positively, the results may also indicate that there is a lack of competition for places within the VET system. This, in turn, could indicate that students and/or their parents do not perceive positive labour market outcomes from achieving a VET qualification.

The findings of this study on the influence of post-school study on labour market outcomes provide some evidence on this latter conjecture. They show that the probability of full-time employment at age 25 is *not* improved by the completion of a VET qualification. Furthermore, the impact of parenthood on the chances of employment retention is similar in the group of women with VET qualifications and those without any post-school qualifications. In contrast, the Canadian results show a positive relationship between a college/other post-school education qualification and full-time employment chances at around 24 to 26 years of age.

In total, the results summarised in this report highlight the additional insights to the functioning of educational systems that can be achieved from cross-national comparisons. In this case, the distinctive features of the Australian VET system have been highlighted via a comparison with Canada's college system.

These results are relevant to the design of Australian policy aimed at growth in post-school education. Specifically, they suggest that this growth may not be achievable within the VET system, as it is currently comprised. On the basis of the results presented in this report, questions can be asked about the demand for the type of courses currently offered in the VET system. There appears to be more competition for places in the Australian university system.

The results of the project support the OECD (2008b) assessment that other countries can gain from a closer examination of Canada's college system. The results also indicate that further research is warranted on the particular aspects of the Canadian college system that make it attractive to high school graduates. These may include the range of educational qualifications offered by the colleges, the close relationship between secondary education and college education, especially in Quebec, and the inclusion of programs of academic education leading to university entrance. The results of the project also suggest there is scope for further research on the aspects of the Australian VET system that have contributed to its success in providing post-school education accessible to students with relatively poor school outcomes and from families with relatively low educational resources.

Introduction

In recent decades, levels of educational attainment have improved for youth in both Canada and Australia. The tertiary education rate among 25 to 29 year old Australians increased by 11.6 percentage points between 1996 and 2006. In Canada the rate increased by 6.2 percentage points (OECD 2008b). However, young Canadians continue to engage in post-school study at a much higher rate than their Australian peers. In Canada, in 2006, the proportion of young adults with a post-school qualification was the highest in the group of OECD countries, at 51.9%, whilst in Australia this proportion was only 38.4% (OECD 2008b).

A large part of the difference in rates of participation in post-school education is due to differences in the non-university sector. In Canada this type of education features the college/CEGEP sector and in Australia it features the vocational education and training (VET) sector. Lambert, Zeman, Allen and Bussiere (2004, p.8) describe that 36% of 20 to 22 year old Canadians had participated in a college/CEGEP program by December 2001. In Australia, in 2005, just 12% of 21 year olds were participating in VET (Underwood, Hillman & Rothman 2007, table 1.1.1). Rates of engagement in university education are more similar. In Canada in 2001, 33% of 20 to 22 year olds had participated in university study (Lambert et al. 2004, p.8). In Australia in 2005, 29% of 21 year olds were participating in this type of post-school education (Underwood et al. 2007, table 1.1.1).

Although the differences in participation in non-university education apply to both young men and women, they are most pronounced for women. Women are more likely than men to participate in university education in both Canada and Australia. However, in Canada the gap in participation favouring women applies to each type of post-school education, whilst in Australia the gap 'reverses' in the VET sector. For example, 39% of 20 to 22 year old Canadian women (as compared to only 32% of their male peers) had participated in college education in 2001 (Lambert et al. 2004, p.8). However, in 2005, only 9% of 21 year old Australian women (as compared to 15% of young Australian men) were participating in VET (Underwood et al. 2007, table 1.1.1).

It is important to explore the reasons for these differences in participation rates because they are likely to impact on the labour market and other chances of young people for education, partnership etc. A large theoretical and empirical literature in labour economics emphasises the importance of education to labour force participation and earnings over the life course. Recently, the OECD (2008b, p.70) has attributed the trend towards strong employment growth for young Canadian women, in part, to their high rates of participation in post-school education. A further recent OECD report (OECD 2008a) has identified a strong correlation between qualification levels and the employment outcomes of young Australians. For example, employment rates are shown to be close to 100% one year after leaving initial education for highly qualified young people (such as those with a bachelor degree), and only 65.5% for young people with low levels of qualifications (such as those with only high school qualifications).

The current study aims to contribute new information on the individual characteristics that affect the chances of participation in different types of post-school study by young Australians and Canadians. A unique feature of this study is its cross-national comparison of the role of individual characteristics, such as academic ability and parental background, in determining participation in post-school education. This comparison enables us to identify how different groups of young people fare with post-school education in different educational systems. This information is likely to be an important resource for policy development aimed, for example, at improving rates of

participation in post-school education by particular socio-demographic groups. The study also examines the links between post-school study and the early-career employment chances of young Canadians and Australians. This complements the analysis of the determinants of post-school study by demonstrating the importance of these educational opportunities to an individual's labour market outcomes.

Theoretical and empirical perspectives on participation in post-school education and its labour market impacts

Participation in post-school study—and the impacts of this study on labour market outcomes—has been the focus of extensive theoretical and empirical analysis over a number of decades. In the economic literature at least, human capital theory is typically used to guide analyses of participation. This framework describes participation in post-school study as the outcome of an evaluation of the expected costs and benefits of the investment in additional years of schooling. The benefits from an investment in education are typically modelled as deriving from the expected increment in lifetime earnings, whilst the costs are commonly described as including the direct costs of the educational programme (such as fees and texts), as well as the indirect costs associated with foregone earnings whilst studying.

In the human capital framework an important link is theorised to exist between the demand for post-school education and its impact on employment and earning chances. Furthermore, the model posits a strong causal link between expected labour market outcomes and patterns of educational enrolments across individuals characterised by different levels of academic ability and economic resources. Specifically, demand for a particular type of education is related to its anticipated labour market outcome. To the extent that scarce places in educational programmes are allocated according to academic merit (and/or students with high ability face lower costs associated with their education than others), enrolments in courses with high market value will be dominated by students with high scores in tests of academic ability, all things being equal. Similarly, to the extent that students from families with high financial resources have a relatively high ability to meet any costs associated with education, enrolments in courses with high market value will be dominated by students from high socio-economic backgrounds, all things being equal².

A large international literature has explored these theoretical propositions. For example, a range of studies have identified a positive link between the expected gains in lifetime earnings and the decision to pursue post-school education (for example, Wilson et al. 2005). Other studies within this field show links between the business cycle, wage opportunities and enrolments in higher education (Giannelli & Monfardini 2003, Gustman & Steinmeier 1981, Lenton 2005). Haverman and Wolfe (1995) summarise existing literature on the role of parental income as showing positive effects on children's educational outcomes (also Lenton 2005). However, Cameron and Heckman (1999) argue that these effects may come about when children are relatively young—not necessarily when a final decision is being made about post-school education.

Lenton (2005) applies these ideas about the general determinants of participation in post-school education to a study of the choices young British people make about the *type* of post-school education, specifically the choice of vocational versus academic post-school courses. She found that levels of academic attainment (as measured by exam scores at age 15) 'have the largest effect on the choice of first destination' (p.97). However in her findings a different pattern emerged with regards to the choice of vocational education. Students with the highest academic attainment were less likely to choose this option, whilst students with relatively low attainment levels were more likely to choose vocational education.

² A significant body of theoretical work in this field focuses on the impact of capital constraints (which can be related to factors such as family income) on the ability to finance desired educational investments (see Cameron & Heckman, 1999, for an overview).

Lenton's other findings included a strong positive relationship between having a father working in a managerial or professional occupation and the likelihood that a boy would select an academic course. In concurrence with the literature summarised by Lenton, the mother's occupational status had a stronger effect on the destinations chosen by girls. Private school education was strongly linked to the likelihood of continuing into an academic course; and 'being non-white has a strong positive effect on the probability of choosing academic post-compulsory education' (Lenton 2005, p.103).

Curtis (2008) conducted a similar study to Lenton's using the Longitudinal Survey of Australian Youth (LSAY) data. He identified gender differences in the post-school pathways chosen by young Australians. Women were found to be less likely than men to choose apprenticeships and more likely to participate in traineeships and other types of post-school study. All other relationships examined by Curtis were for women and men combined. He found that Indigenous people were more likely to participate in traineeships than non-Indigenous people, but the likelihood of other types of participation was not significantly different from non-Indigenous Australians. Metropolitan youth were more likely to participate in post-school education than their counterparts in regional and rural areas. However, apprenticeships were relatively common for regional young people. Parental education exerted a strong influence on the likelihood of post-school education—especially university study. Students with a non-English language background were less likely to participate in apprentice programs but more likely to participate in university education³. School completion and academic achievement in Year 9 were strong predictors of the type of post-school education chosen (Curtis 2008, pp.16–20).

Dubois' (2002) study on the determinants of the decision to invest in post-school education in Canada provides results comparable to Curtis' (2008) and Lenton's (2005). Women were identified as more likely than men to enrol in both types of post-school education (college and university), with these effects strongest for college education. Immigrants were also more likely to enrol in university. Regional and urban/rural differences in enrolments were identified (e.g. Ontario residents were more likely to enrol) and parental occupation and education had a measurable influence on the probabilities (for example, students whose mothers were managers were more likely to enrol in university or college). School students with high measured academic abilities were found to be much more likely to participate in university. However, in contrast to the findings of both Curtis (2008) and Lenton (2005), these students also had a higher likelihood of participating in non-university post-school education.

The topic of transitions into paid work by young people and how these are influenced by post-school study has also been the focus of many recent theoretical and empirical studies. Among the most influential studies is Paul Ryan's international comparison of the period between the end of compulsory schooling and the attainment of full-time stable employment.

Ryan (2001, p.44) identifies low educational attainment as a critical risk factor for youth joblessness. However, he also observes that there is mixed evidence on the labour market effects of vocational education. The studies reviewed by Ryan indicate that these programs only deliver positive labour market outcomes (such as higher rates of pay) for some students (such as male apprentices in the UK and women in commercial studies courses in the US).

The question of the role of vocational education in improving the labour market outcomes of young people has been pursued in a number of Australian studies of the school-to-work transition. An important example is Marks (2006). This study used data from the LSAY 1995⁴ cohort to examine factors influencing the likelihood of full-time employment four years after leaving school for young people who do not attend university. The results provide a mixed assessment of the impact of VET on the chances of full-time employment. Specifically, Marks found that

³ Lenton (2005, p.90) also identifies a number of studies showing higher likelihood of post-school education by key 'non-white' ethnic groups.

⁴ The LSAY 1995 cohort comprises young people who started their participation in the LSAY in 1995, when the majority were aged 14 years.

participation in apprenticeships increased the likelihood of full-time employment for young men, and that traineeships promoted full-time employment for young women. However, in general, the positive effects of VET on the chances of full-time employment were found to be modest in comparison with the strong impacts of previous labour market experience.

Curtis' (2008) study added to Marks' study by analysing the impact of VET on labour market outcomes of the LSAY95 cohort in 2004 (when, on average, the participants were aged 23). Like Marks (2006), Curtis excluded university students from his sample (creating potential selection problems). His results also followed a similar pattern to Marks'. Participation in a traineeship or non-apprenticeship program (as compared to no post-school education) raised the likelihood of full-time employment for women. For men, participation in an apprenticeship program (as compared to no post-school education) improved the chances of full-time employment at age 23. Other types of non-university post-school study did not impact on the likelihood of full-time employment.

A variety of findings are reported in other Australian studies of the issue. For example, Dockery, Koshy and Stromback (2005) found positive effects of traineeships on employment probabilities when employment was measured at age 21. Gorgens and Ryan (2006) reported increased likelihoods of full-time employment for young people who had completed a VET qualification (as compared to the group who did not complete any post-school qualification). Stanwick (2005 and 2006) reported that some VET courses (such as certificate I and II) were less likely than others to deliver improved employment outcomes, at least in the short term. However, Dorien and Gorgens (2008) assert that the likelihood of employment, especially for young people with low levels of educational attainment, is strongly influenced by previous spells of employment/unemployment.

Canadian studies of the links between post-school study and labour market outcomes are less common. Recent studies include Hango and de Broucker's (2007) analysis of the employment rates of young Canadians who have pursued a variety of labour market pathways. They find that compared to those who do not complete high school, individuals following the college or university pathway are more than twice as likely to be employed in their mid twenties. However, their findings indicate only small differences in the employment rates of university and college graduates, as compared to high school graduates at this age.

Walters' (2006) analysis of wage outcomes for graduates based on 1995 National Graduate Survey data contributes further information on the impacts of post-school study in a Canadian context. He identified that both major forms of post-school education (college and university programs) result in higher wages two years after graduation. However, university graduates were found to typically achieve better labour market outcomes than graduates of colleges; gender differences in earnings between graduates were persistent; and labour market outcomes varied across the genders and qualification types. A higher gender wage gap and a larger degree of occupational segmentation was found among college graduates than among university graduates.

Statistical approach

This study uses data from the Longitudinal Survey of Australian Youth (LSAY) and the Canadian Youth in Transition Survey (YITS) to add new perspectives—especially a comparative perspective—to the determinants of post-school study and the impacts of study on labour market outcomes. The LSAY is a longitudinal survey that tracks young people as they move from school into further study, work and elsewhere. This study largely makes use of data from one of the LSAY cohorts—the LSAY95 cohort—with their educational choices measured in 1999. At this time the cohort was, on average, aged 18 and, in the majority of cases, in their first year out of secondary school. Three possible educational choices could be identified as having been made by the cohort members by this time: enrolment in a bachelor degree (university choice); participation in an apprenticeship, traineeship or other vocational⁵ diploma or certificate (VET choice); or no post-school education.

The LSAY95 cohort was first interviewed on their demographic and other circumstances around the age of 14, when they were in Year 9 at school. The initial sample included 13 613 participants, who were selected following a two-stage sampling process that involved first the random selection of schools for participation in the survey and then the selection of classes for participation. By 1999, when we observe their post-school educational choices, approximately 40% of the initial sample had been lost due to attrition, leaving a sample size for our analysis of 4490 young women and 4292 young men⁶.

The Canadian Youth in Transition Survey (YITS) has many similarities to the LSAY. It is a longitudinal survey of young Canadians aimed at contributing information on ‘who chooses post-school education and what factors influence this decision’, ‘what post-school pathways are youth following?’ and ‘How do additional investments in education “pay off” with respect to income and employment security?’ (Human Resources Development Canada (HRDC) 2000).

The current study largely relies on data from the YITS Cohort B. This group was 18 to 20 years old in 2000, when they were first surveyed. At that time they could be identified as having chosen one of three alternative types of post-school study: enrolment in a bachelor degree (university choice); enrolment in a college or other form of non-university, post-school education (college/other post-school education choice); and no post-school education. Demographic, socio-economic, school and post-school characteristics and experiences were recorded for the YITS Cohort B in 2000; 23 000 individuals participated in this survey. They were recruited from households that had participated in the Canadian Labour Force Survey in the previous three-year period and which had one or more young person in the target population.

One possible limitation of the study’s use of the LSAY95 Cohort and the YITS Cohort B to compare the characteristics of young Australians and Canadians entering different types of post-school study derives from the fact that data was collected from the two groups at different ages. As noted above, information on the demographic and socio-economic characteristics of the YITS

⁵ TAFE – Technical and Further Education.

⁶ Sample attrition and differences between the original characteristics of the sample and the underlying population of interest necessitated the application of weights in the analysis. A full description of the attrition problems affecting the LSAY and the design of a weighting system to address this problem is in Marks and Long (2000). Table A1 demonstrates the effect of weighting the LSAY95.

sample was collected in 2000, when the participants were aged 18 to 20, whereas this information was collected from the Australian sample when they were aged 14 (in 1995). This may produce some differences associated with, for example, geographic mobility between the ages of 14 and 20, and with the recall of school details and results.

To address this potential problem, and also to explore possible cohort changes in post-school study, this report summarises results of analysis conducted using the YITS Cohort A and the 1998 cohort of LSAY. Although the LSAY98 data in particular contains less detail on the demographic and socio-economic characteristics likely to affect educational choices, it offers the advantage of providing data collected at a similar point in the life cycle as the YITS Cohort A. The YITS Cohort A was first interviewed at age 15 in 2000 and demographic information was collected at this age. The LSAY98 cohort was first interviewed at the age of 14, in 1998, and demographic information was collected then. The post-school study choices of the YITS Cohort A can be identified at age 19, in 2004. In the LSAY98 data, post-school study choices can be identified at age 18, in 2002.

The initial LSAY98 sample included 14 117 participants, who were selected from a random sample of classes taken from schools that were selected into the survey on the basis of their representativeness of state and school sectors. However, by 2002, when we identify the choice of post-school study, only 7762 participants were left in the sample. Sample attrition and the differences between the original characteristics of the sample and the underlying population of interest also necessitated the application of weights in the analysis.

The YITS Cohort A included 30 000 individuals when first surveyed in 2000. The sample was drawn from 1000 Canadian schools and was based on a sampling plan designed to match the OECD Program for International Student Assessment (PISA) project. As such, the sampling plan involved a two-stage probability sample, whereby schools were first selected and then students were selected from these schools (Human Resources Development Canada 2000). By 2004, when we observe the post-school education choices of the cohort, only 14 500 cases were available for analysis. As was the case with the LSAY data, this necessitated the application of weights in the analysis.

An important additional extension to the examination of post-school study choices contained in this report is analysis of the transitions into employment of young Canadians and Australians. This analysis relies on the LSAY95 and YITS Cohort B data, as only these data sets span a sufficient time period to allow the study-to-employment transitions to be fully observed. Employment status for the LSAY95 cohort is measured in 2006, when the survey participants were, on average, 25 years old, and for the YITS Cohort B in 2006, when these survey participants were aged between 24 and 26 years. However, by 2006 both the Australian and Canadian samples had been significantly affected by attrition. Only 3914 young people remained in the LSAY95 sample and 12 435 in the YITS Cohort B sample. We responded to this problem by applying the sample and attrition weights supplied with the data sets.

The approach taken to the analysis of the post-school study choices observed in the LSAY and YITS data involved the application of a random utility model. It is assumed that school leavers are a heterogeneous group and that each leaver makes a decision about post-school education based on a rational assessment of individual costs and benefits. The choice set facing school leavers is characterised as finite and, thus, if a particular alternative (such as entry into a university course) is available to all members of the school leaver population then the fraction of the school leavers that chooses this alternative is assumed to be the fraction for whom university education is the utility maximising choice. Formally, the *choice probability* for an alternative i from a choice set C_i is described as being:

$$P(i) = P[t : u_i(i) \geq u_i(j), \text{ all } j \in C_i]$$

As such, the probability that a particular post-school option is chosen is characterised as reflecting the distribution, across the population, of the utility attached to different choices.

Following the methods developed by Daniel McFadden (see, for example, McFadden, 1981), each alternative and each individual is associated with a set of attributes. Formally, as shown in the equation:

$$u_t(j) = u(x_j, s_t)$$

the utility of post-school alternative j to school leaver t is a function both of the attributes of the alternative (summarised in the vector x_j) and the attributes of the school leaver (in the vector s_t). Information on the attributes, together with assumptions about the form of the utility function for different individuals, is used to make predictions of how, for example, school leavers with particular individual attributes will choose between the various post-school study alternatives.

Given that we have only been able to use data from the LSAY and YITS to observe some of the attributes relevant to the post-school study choice, an alternative formulation of the above equation is important—and is shown below. Specifically, the utility associated with alternative j by individual t is linked, first, to the value contributions of the attributes that can be observed (described in \mathbf{v} with measured contributions to utility measured in the parameter vector β). The influence of unobservable attributes on utility is captured by the error term.

$$P(i|s_o, X_o) = P[\nu(x_{i_o}, s_o) \cdot \beta + \varepsilon_i \geq \nu(x_{j_o}, s_o) \cdot \beta + \varepsilon_j, \text{ all } j \in C|s_o, X_o, \beta, \alpha],$$

This equation describes the probability that a school leaver will choose post-school alternative i as conditional on his/her observed individual attributes s_o and the observed attributes X_o of the alternatives in his/her choice set C . This formulation has provided the basis for estimating the parameters β and α using data on the observed post-school choices and attributes of the sample of school leavers from each data set.

Dependent and independent variables

As noted above, three broad post-school study alternatives are identified in this report: university, non-university post-school education (post-school education) and no post-school education. The attributes of the individuals in these cohorts that may affect the choice between these alternatives (the independent variables in the model) include their gender, indigenous status, location (rural versus urban), language (English spoken at home in the case of the Australian data and English or French as the first language for the Canadians), disability, type of school (independent or government), Year 12 or 13 completion, their mother's and father's level of education, and their academic achievement at school.

Although the LSAY and YITS offer a high level of comparability with regards to the characteristics of post-school study choices, a few comments on the measures developed for this study are warranted. First, academic achievement at school is measured in YITS data with reference to the student's recall of their academic results in their final year of school. This data is organised in the YITS data set into five groups: 'in the bottom 10% of results', 'in the 11th to 30th percentile range'; 'in the 31st to 60th percentile range'; 'in the 61st to 90th percentile range'; and 'in the top 10% of results'. The LSAY data includes Year 12 results for students who participated in Tertiary Entrance Exams⁷ and results of reading and maths tests for all individuals in the study when they were in Year 9. Therefore, to achieve comparability across the two data sets, it was necessary to re-organise the LSAY data to fit the framework used in the YITS. This was achieved by using the Year 12 exam results where these were available, and where they were not available the Year 9 scores in maths and reading tests were used. The Year 12 and Year 9 results were also organised into percentile ranges that matched those used in the YITS.

⁷ These exams are state-based assessments. The ENTER (Equivalent National Tertiary Entrance Rank) score was self-reported by most participants in their telephone interviews. The scores provided by Queensland students were converted by the LSAY administrators to a ENTER score.

The other changes required to achieve comparability between the measures used for each country sample were relatively minor. For example, residential location was measured with reference to a simple rural/urban variable, as this categorisation was available in both data sets, whereas a more complex measure of rural/regional/remote was only available in the LSAY data. Similarly, it was not possible to achieve comparable measures of parental occupation across the two data sets and thus, parental education was relied on to proxy socio-economic status.

Multinomial logistic regression models were used to estimate the relationship between each of the independent variables and the conditional probability of a particular post-school study choice. The models, which were applied separately to each country sample, also feature the incorporation of interaction terms based on the gender variable. As such the model also estimates gender differences in the relationships between each independent variable and the likelihood of a particular study choice. The modelling was carried out using STATA (a statistical package).

The statistical analysis of labour market outcomes focused, first, on estimating the determinants of the probability of one of three possible employment states by 2006 (employed full-time, employed part-time or not employed). The set of possible determinants in the model included: indigenous status, location (rural versus urban and state or province), language (English spoken at home in the case of the Australian data and English or French as the first language for the Canadians), disability, marital status, parental status, type of educational qualification and completion status. Each of these variables can either be linked to the labour market opportunities of the young person and/or the constraints on the ability to participate in paid work.

Multinomial logistic regression techniques were used to derive parameter estimates of the magnitude, direction and statistical significance of each of the above characteristics on observed labour market outcomes. The model of employment status also included a set of interaction terms based on the gender variable.

The analysis of employment likelihood by young Australians in 2006 was completed by one final component of this study. Specifically, the likelihood that a transition from employment to non-employment would occur between the ages of 22 and 25 was modelled for young Australian women. To achieve estimates of the determinants of this likelihood it was important to first ensure that the estimates were not affected by selection bias. The analysis sample for the transition from paid employment comprised only the young women who were employed in 2003 and these women were likely to have characteristics that distinguished them from other young Australian women. Thus, it would be wrong to infer the employment response to changed circumstances observed in the sample apply to all young women. To avoid this problem a method suggested by Orme (1997) was implemented. This involved a two-stage procedure, whereby we first estimated the probability⁸ that a woman with particular characteristics would be represented in the 2003 sample (that is, prior to analysis of the employment transition). A generalised residual was estimated as part of this step and then included as a term in the employment transition regression, effectively correcting for sample bias. Most of the factors included in the initial employment probit model (that is, rural location, disability, English language, indigenous status, state, presence of children, marital status) are also relevant to the chances of retaining employment. Thus, the model of employment transitions used in the second stage of the Orme procedure contained a restricted set of variables⁹. It also featured two key change variables: change in parent status (became a parent between 2003 and 2006) and change in marital status (became married between 2003 and 2006). The model was applied separately to sub-groups of young women according to their post-school qualifications in 2003.

⁸ The model had the same form as the employment logit model used to analyse employment likelihood in 2006. That is, the independent variables included rural location, disability, language, indigenous status, state, post-school qualification, presence of children, marital status.

⁹ Inclusion of the generalised residual will result in problems of collinearity if the set of variables in the two models are very similar.

Results

Post-school education choices observed in the LSAY95 and YITS Cohort B data

The results of the statistical analysis of the LSAY95 and YITS Cohort B data are reported in the following two tables, beginning with the LSAY95 results. Relative risk ratios (column 2) are the key data item reported. For the non-interaction terms these show the direction and estimated magnitude of the relationship between each measured characteristic and the likelihood of a particular post-school study choice by women. The first of these is the likelihood of non-university post-school education (VET or college) as compared to no post-school study, conditional on non-participation in university study (part 'a' of each table); and the second is the likelihood of university as compared to no post-school study, conditional on non-participation in other post-school study (part 'b' of each table). For example, looking at table 1a, the relative risk ratio on the Year 12 or 13 variable for the likelihood of VET study is the estimated difference in probability of this type of study being chosen over no post-school study by young women who completed Year 12 or 13, compared to women who left school early, conditional on non-selection of university study. The relative risk ratio of 1.5 indicates that women who complete Year 12 or 13 are approximately 1.5 times more likely than early school leavers to choose non-university post-school study over the no post-school study option.

The relative risk ratios for the interaction terms show the direction and estimated magnitude of gender-based difference in the importance of different characteristics in the determination of educational transitions. Where these terms are significant (highlighted by shaded rows), the relative risk ratio for men is different from that for women.

A summary and commentary on the results in tables 1 (a & b) and 2 (a & b) are provided at the end of this section.

Table 1a The likelihood of participation in VET compared to no post-school study at age 18, Australian youth, 1999

	Relative risk ratio	SE	z	P>z	95% CI	
Male	3.427	1.451	2.910	0.004	1.495	7.859
Disability	0.829	0.303	-0.510	0.608	0.405	1.695
Indigenous	1.454	0.440	1.240	0.216	0.804	2.629
Rural or Regional ^a	0.882	0.089	-1.240	0.214	0.723	1.075
English language spoken at home	0.713	0.129	-1.870	0.061	0.500	1.016
Attended private school in 1995	1.066	0.111	0.610	0.542	0.868	1.308
Attended school in Victoria in 1999 ^b	1.214	0.164	1.430	0.152	0.931	1.582
Attended school in Queensland in 1999	1.020	0.146	0.140	0.888	0.771	1.349
Attended school in South Australia in 1999	0.771	0.116	-1.730	0.084	0.575	1.035
Attended school in Western Australia in 1999	0.932	0.142	-0.460	0.644	0.691	1.257
Attended school in Tasmania in 1999	0.674	0.179	-1.480	0.138	0.400	1.135
Attended school in the ACT in 1999	1.143	0.274	0.560	0.579	0.714	1.830
Attended to Year 12 or 13 by 1998	1.507	0.177	3.480	0.000	1.196	1.898
Mother's education is other post-school ^c	0.595	0.158	-1.960	0.050	0.354	1.000
Mother's education is only high school	1.056	0.182	0.310	0.754	0.752	1.481
Mother's education is less than high school	0.769	0.125	-1.610	0.107	0.558	1.059
No mother education record	0.796	0.148	-1.220	0.221	0.553	1.147
Father's education is other post-school ^c	1.243	0.241	1.130	0.260	0.851	1.817
Father's education is only high school	1.186	0.237	0.860	0.391	0.803	1.754
Father's education is less than high school	1.441	0.261	2.020	0.043	1.011	2.055
No father education record	1.114	0.212	0.570	0.570	0.768	1.617
Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile ^d	1.350	0.222	1.820	0.069	0.977	1.864
Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	1.107	0.174	0.640	0.520	0.813	1.507
Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	0.929	0.158	-0.430	0.664	0.666	1.295
Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	0.744	0.204	-1.080	0.281	0.435	1.273
Male*Disability	0.962	0.455	-0.080	0.935	0.381	2.431
Male*Indigenous	0.327	0.148	-2.470	0.013	0.135	0.793
Male*Rural or Regional	1.092	0.153	0.630	0.531	0.830	1.437
Male*English language spoken at home	0.993	0.252	-0.030	0.978	0.604	1.633
Male*Attended private school in 1995	0.921	0.135	-0.560	0.576	0.691	1.228
Male*Attended school in Victoria in 1995	0.911	0.171	-0.490	0.621	0.631	1.317
Male*Attended school in Queensland in 1995	1.162	0.225	0.780	0.438	0.795	1.698
Male*Attended school in South Australia in 1995	0.912	0.190	-0.440	0.660	0.607	1.373
Male*Attended school in Western Australia in 1995	1.136	0.239	0.600	0.545	0.752	1.716
Male*Attended school in Tasmania in 1995	0.968	0.360	-0.090	0.930	0.467	2.005
Male*Attended school in the ACT in 1999	0.822	0.275	-0.580	0.559	0.427	1.584
Male*Attended to Year 12 or 13 by 1998	0.420	0.065	-5.610	0.000	0.310	0.568
Male*Mother's education is other post-school	2.839	1.012	2.930	0.003	1.412	5.710
Male*Mother's education is only high school	1.205	0.290	0.780	0.437	0.752	1.932
Male*Mother's education is less than high school	1.143	0.268	0.570	0.568	0.722	1.809
Male*No mother education record	1.746	0.463	2.100	0.036	1.038	2.937
Male*Father's education is other post-school	0.818	0.210	-0.780	0.433	0.495	1.352
Male*Father's education is only high school	0.822	0.224	-0.720	0.471	0.482	1.401
Male*Father's education is less than high school	0.792	0.197	-0.940	0.349	0.487	1.289

	Relative risk ratio	SE	z	P>z	95% CI	
Male*No father education record	0.720	0.192	-1.230	0.219	0.427	1.215
Male*Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile	0.765	0.171	-1.200	0.230	0.493	1.185
Male*Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	0.770	0.165	-1.220	0.222	0.507	1.171
Male*Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	0.952	0.218	-0.210	0.831	0.609	1.490
Male*Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	1.130	0.398	0.350	0.728	0.567	2.254

Notes: The default categories are: a) urban/metropolitan; b) NSW; c) university education; d) lowest 10%.

For tables 1a and 1b, multinomial logistic regression; number of observations: 7831; Log pseudo likelihood=7231.63.

Table 1b The likelihood of participation in university compared to no post-school study at age 18, Australian youth, 1999

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.486	0.470	-0.750	0.456	0.073	3.238
Disability	0.630	0.223	-1.300	0.193	0.315	1.263
Indigenous	0.867	0.333	-0.370	0.710	0.408	1.842
Rural or Regional ^a	0.977	0.091	-0.250	0.803	0.815	1.172
English language spoken at home	0.440	0.067	-5.380	0.000	0.327	0.594
Attended private school in 1995	1.447	0.135	3.970	0.000	1.206	1.737
Attended school in Victoria in 1995 ^b	1.340	0.161	2.430	0.015	1.059	1.696
Attended school in Queensland in 1995	0.899	0.123	-0.780	0.435	0.688	1.175
Attended school in South Australia in 1995	1.050	0.139	0.370	0.711	0.811	1.360
Attended school in Western Australia in 1995	0.971	0.139	-0.200	0.839	0.734	1.285
Attended school in Tasmania in 1995	0.905	0.234	-0.390	0.700	0.546	1.502
Attended school in the ACT in 1995	1.044	0.253	0.180	0.859	0.649	1.680
Attended to Year 12 or 13 by 1998	86.797	48.374	8.010	0.000	29.114	258.761
Mother's education is other post-school ^c	0.749	0.155	-1.400	0.162	0.500	1.123
Mother's education is only high school	0.626	0.097	-3.010	0.003	0.462	0.849
Mother's education is less than high school	0.500	0.072	-4.820	0.000	0.378	0.663
No mother education record	0.488	0.083	-4.240	0.000	0.350	0.680
Father's education is other post-school	0.614	0.094	-3.170	0.002	0.455	0.830
Father's education is only high school	0.599	0.101	-3.030	0.002	0.430	0.834
Father's education is less than high school	0.588	0.089	-3.510	0.000	0.437	0.791
No father education record	0.419	0.067	-5.420	0.000	0.306	0.574
Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile ^d	2.288	0.457	4.150	0.000	1.547	3.383
Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	3.676	0.697	6.870	0.000	2.536	5.330
Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	5.466	1.050	8.840	0.000	3.751	7.966
Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	6.082	1.398	7.850	0.000	3.876	9.543
Male*Disability	0.602	0.346	-0.880	0.377	0.196	1.856
Male*Indigenous	1.532	0.869	0.750	0.452	0.504	4.660
Male*Rural or Regional	0.814	0.118	-1.410	0.158	0.612	1.083
Male*English language spoken at home	0.946	0.223	-0.230	0.815	0.596	1.503
Male*Attended private school in 1995	1.064	0.152	0.440	0.662	0.805	1.407
Male*Attended school in Victoria in 1995	1.201	0.224	0.980	0.326	0.833	1.732
Male*Attended school in Queensland in 1995	1.136	0.235	0.620	0.538	0.757	1.705
Male*Attended school in South Australia in 1995	0.899	0.188	-0.510	0.611	0.598	1.354

	Relative risk ratio	SE	z	P>z	95% CI	
Male*Attended school in Western Australia in 1995	0.894	0.198	-0.510	0.612	0.579	1.379
Male*Attended school in Tasmania in 1995	0.962	0.385	-0.100	0.922	0.439	2.107
Male*Attended school in the ACT in 1995	0.698	0.250	-1.000	0.315	0.346	1.408
Male*Attended to Year 12 or 13 by 1998	1.713	1.497	0.620	0.538	0.309	9.500
Male*Mother's education is other post-school	1.714	0.568	1.630	0.104	0.895	3.284
Male*Mother's education is only high school	1.429	0.331	1.540	0.124	0.907	2.252
Male*Mother's education is less than high school	1.117	0.252	0.490	0.623	0.718	1.737
Male*No mother education record	1.642	0.415	1.960	0.050	1.001	2.695
Male*Father's education is other post-school	0.901	0.208	-0.450	0.653	0.574	1.417
Male*Father's education is only high school	0.840	0.215	-0.680	0.497	0.509	1.388
Male*Father's education is less than high school	0.984	0.226	-0.070	0.943	0.627	1.544
Male*No father education record	0.848	0.208	-0.670	0.503	0.524	1.373
Male*Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile	0.792	0.236	-0.780	0.434	0.441	1.420
Male*Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	0.828	0.232	-0.670	0.502	0.478	1.436
Male*Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	0.868	0.247	-0.500	0.619	0.497	1.516
Male*Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	1.010	0.333	0.030	0.977	0.528	1.929

Notes: The default categories are: a) urban/metropolitan; b) NSW; c) university education; d) lowest 10%.

For tables 1a and 1b, multinomial logistic regression; number of observations: 7831; Log pseudo likelihood=7231.63.

Table 2a The likelihood of participation in college/other post-school education compared to no post-school study at ages 18 to 20, Canadian youth, 2000

	Relative risk ratio	SE	z	P>z	95% CI	
Age	1.071	0.042	1.750	0.080	0.992	1.157
Male	1.203	0.881	0.250	0.801	0.286	5.051
Disability	0.723	0.147	-1.590	0.111	0.485	1.077
Indigenous	0.732	0.224	-1.020	0.308	0.402	1.333
Rural or Regional ^a	1.263	0.119	2.480	0.013	1.050	1.518
English or French language was first spoken	0.739	0.130	-1.710	0.087	0.523	1.045
Last school was private	1.244	0.194	1.400	0.160	0.917	1.688
Last school was in Newfoundland or Labrador ^b	0.992	0.179	-0.040	0.964	0.696	1.413
Last school was in Prince Edward Island	0.941	0.232	-0.250	0.805	0.580	1.525
Last school was in Nova Scotia	2.077	0.366	4.150	0.000	1.470	2.934
Last school was in New Brunswick	1.434	0.255	2.030	0.042	1.012	2.031
Last school was in Quebec	29.965	8.449	12.060	0.000	17.243	52.073
Last school was in Manitoba	0.780	0.138	-1.400	0.161	0.551	1.104
Last school was in Saskatchewan	0.666	0.105	-2.570	0.010	0.489	0.908
Last school was in Alberta	0.722	0.116	-2.030	0.042	0.527	0.988
Last school was in British Columbia	0.839	0.133	-1.110	0.267	0.616	1.144
Attended to Year 12 or 13 by 2000	6.012	1.604	6.720	0.000	3.563	10.143
Mother's education is other post-school ^c	0.785	0.126	-1.510	0.130	0.573	1.074
Mother's education is only high school	0.730	0.110	-2.090	0.037	0.543	0.981
Mother's education is less than high school	0.574	0.100	-3.180	0.001	0.408	0.809
No mother present	0.533	0.122	-2.760	0.006	0.341	0.833
Father's education is other post-school	1.467	0.230	2.440	0.015	1.078	1.996

	Relative risk ratio	SE	z	P>z	95% CI	
Father's education is only high school	1.229	0.181	1.410	0.160	0.922	1.640
Father's education is less than high school	1.151	0.190	0.850	0.394	0.833	1.591
No father present	1.145	0.189	0.820	0.411	0.829	1.582
Academic achievement in last school year was in 11th to 30th percentile ^d	1.881	0.984	1.210	0.227	0.675	5.245
Academic achievement in last school year was in 31st to 60th percentile	4.341	2.213	2.880	0.004	1.598	11.790
Academic achievement in last school year was in 61st to 90th percentile	5.168	2.645	3.210	0.001	1.895	14.090
Academic achievement in last school year was in 91st to 100th percentile	6.143	3.277	3.400	0.001	2.159	17.477
Male*Disability	1.515	0.452	1.390	0.164	0.844	2.719
Male*Indigenous	1.261	0.615	0.480	0.634	0.485	3.280
Male*Rural or Regional	0.783	0.105	-1.820	0.068	0.602	1.018
Male*English or French language was first spoken	1.223	0.307	0.800	0.422	0.748	2.000
Male*Last school was private	1.233	0.272	0.950	0.341	0.801	1.900
Male*Last school was in Newfoundland or Labrador	0.848	0.224	-0.630	0.531	0.505	1.421
Male*Last school was in Prince Edward Island	1.100	0.375	0.280	0.779	0.564	2.148
Male*Last school was in Nova Scotia	0.630	0.173	-1.680	0.092	0.368	1.079
Male*Last school was in New Brunswick	0.841	0.211	-0.690	0.491	0.515	1.376
Male*Last school was in Quebec	0.533	0.210	-1.600	0.111	0.246	1.155
Male*Last school was in Manitoba	0.904	0.232	-0.390	0.695	0.548	1.494
Male*Last school was in Saskatchewan	1.398	0.339	1.380	0.167	0.869	2.250
Male*Last school was in Alberta	0.966	0.221	-0.150	0.880	0.617	1.514
Male*Last school was in British Columbia	1.213	0.294	0.800	0.426	0.754	1.951
Male*Attended to Year 12 or 13 by 1998	0.711	0.266	-0.910	0.362	0.342	1.479
Male*Mother's education is other post-school	1.600	0.361	2.080	0.037	1.028	2.491
Male*Mother's education is only high school	1.136	0.240	0.600	0.547	0.751	1.718
Male*Mother's education is less than high school	1.098	0.282	0.360	0.717	0.663	1.818
Male*No mother present	1.250	0.423	0.660	0.510	0.644	2.427
Male*Father's education is other post-school	0.734	0.167	-1.360	0.175	0.469	1.148
Male*Father's education is only high school	0.711	0.145	-1.670	0.095	0.476	1.061
Male*Father's education is less than high school	0.645	0.151	-1.880	0.061	0.408	1.020
Male*No father present	0.546	0.125	-2.650	0.008	0.349	0.855
Male*Academic achievement in last school year was in 11th to 30th percentile	1.319	0.801	0.460	0.649	0.401	4.335
Male*Academic achievement in last school year was in 31st to 60th percentile	0.863	0.509	-0.250	0.803	0.271	2.745
Male*Academic achievement in last school year was in 61st to 90th percentile	0.892	0.532	-0.190	0.848	0.277	2.869
Male*Academic achievement in last school year was in 91st to 100th percentile	0.693	0.473	-0.540	0.591	0.181	2.645

Notes: The default categories are: a) urban/metropolitan; b) Ottawa; c) university education; d) lowest 10%.

For tables 2a and 2b, multinomial logistic regression; number of observations: 16 677; Log pseudo likelihood=13 805.4.

Table 2b The likelihood of participation in university compared to no post-school study at ages 18 to 20, Canadian youth, 2000

	Relative risk ratio	SE	z	P>z	95% CI	
Age	1.679	0.072	12.000	0.000	1.542	1.827
Male	0.102	0.142	-1.640	0.100	0.007	1.550
Disability	0.900	0.171	-0.550	0.581	0.620	1.308
Indigenous	0.824	0.285	-0.560	0.576	0.419	1.622
Rural or Regional ^a	0.828	0.086	-1.820	0.069	0.675	1.015
English or French language was first spoken	0.554	0.090	-3.630	0.000	0.403	0.762
Last school was private	1.277	0.230	1.360	0.173	0.898	1.817
Last school was in Newfoundland or Labrador ^b	2.032	0.380	3.790	0.000	1.409	2.931
Last school was in Prince Edward Island	2.511	0.565	4.090	0.000	1.616	3.903
Last school was in Nova Scotia	5.725	0.952	10.490	0.000	4.132	7.931
Last school was in New Brunswick	3.742	0.655	7.540	0.000	2.655	5.272
Last school was in Quebec	15.472	6.068	6.980	0.000	7.173	33.372
Last school was in Manitoba	1.288	0.215	1.520	0.130	0.929	1.786
Last school was in Saskatchewan	1.616	0.243	3.200	0.001	1.204	2.169
Last school was in Alberta	1.067	0.171	0.400	0.687	0.779	1.460
Last school was in British Columbia	1.115	0.162	0.750	0.456	0.838	1.483
Attended to Year 12 or 13 by 2000	17.967	6.578	7.890	0.000	8.767	36.822
Mother's education is other post-school ^c	0.613	0.093	-3.230	0.001	0.455	0.825
Mother's education is only high school	0.431	0.061	-5.900	0.000	0.326	0.570
Mother's education is less than high school	0.285	0.053	-6.700	0.000	0.198	0.412
No mother present	0.341	0.087	-4.200	0.000	0.206	0.563
Father's education is other post-school	0.755	0.116	-1.830	0.067	0.560	1.019
Father's education is only high school	0.606	0.092	-3.300	0.001	0.450	0.816
Father's education is less than high school	0.412	0.076	-4.790	0.000	0.287	0.592
No father present	0.468	0.073	-4.880	0.000	0.345	0.635
Academic achievement in last school year was in 11th to 30th percentile ^d	5.542	4.266	2.220	0.026	1.226	25.054
Academic achievement in last school year was in 31st to 60th percentile	19.973	15.086	3.960	0.000	4.544	87.779
Academic achievement in last school year was in 61st to 90th percentile	55.717	42.045	5.330	0.000	12.696	244.523
Academic achievement in last school year was in 91st to 100th percentile	138.862	106.144	6.450	0.000	31.041	621.199
Male*Disability	1.342	0.485	0.810	0.416	0.661	2.723
Male*Indigenous	0.308	0.177	-2.050	0.040	0.100	0.948
Male*Rural or Regional	0.804	0.132	-1.330	0.183	0.583	1.108
Male*English or French language was first spoken	1.237	0.299	0.880	0.379	0.770	1.986
Male*Last school was private	1.201	0.323	0.680	0.495	0.709	2.034
Male*Last school was in Newfoundland or Labrador	1.360	0.390	1.070	0.284	0.775	2.385
Male*Last school was in Prince Edward Island	1.156	0.434	0.390	0.700	0.553	2.414
Male*Last school was in Nova Scotia	0.553	0.151	-2.170	0.030	0.324	0.944
Male*Last school was in New Brunswick	0.589	0.150	-2.080	0.038	0.357	0.970
Male*Last school was in Quebec	0.603	0.380	-0.800	0.422	0.175	2.077
Male*Last school was in Manitoba	1.126	0.290	0.460	0.644	0.680	1.866
Male*Last school was in Saskatchewan	1.233	0.303	0.850	0.393	0.762	1.995
Male*Last school was in Alberta	1.616	0.385	2.010	0.044	1.013	2.579
Male*Last school was in British Columbia	1.131	0.248	0.560	0.576	0.735	1.738
Male*Attended to Year 12 or 13 by 1998	1.003	0.583	0.000	0.996	0.321	3.134

	Relative risk ratio	SE	z	P>z	95% CI	
Male*Mother's education is other post-school	1.323	0.290	1.280	0.202	0.861	2.032
Male*Mother's education is only high school	1.046	0.216	0.220	0.826	0.699	1.567
Male*Mother's education is less than high school	1.776	0.520	1.960	0.050	1.000	3.154
Male*No mother present	1.440	0.517	1.020	0.310	0.713	2.910
Male*Father's education is other post-school	0.727	0.166	-1.400	0.162	0.466	1.136
Male*Father's education is only high school	0.783	0.172	-1.110	0.267	0.509	1.206
Male*Father's education is less than high school	0.727	0.197	-1.170	0.240	0.427	1.238
Male*No father present	0.909	0.213	-0.410	0.685	0.575	1.440
Male*Academic achievement in last school year was in 11th to 30th percentile	4.367	5.613	1.150	0.252	0.352	54.244
Male*Academic achievement in last school year was in 31st to 60th percentile	5.271	6.670	1.310	0.189	0.441	62.956
Male*Academic achievement in last school year was in 61st to 90th percentile	8.165	10.327	1.660	0.097	0.684	97.404
Male*Academic achievement in last school year was in 91st to 100th percentile	7.695	9.873	1.590	0.112	0.622	95.142

Notes: The default categories are: a) urban/metropolitan; b) Ottawa; c) university education; d) lowest 10%.

For tables 2a and 2b, multinomial logistic regression; number of observations: 16 677; Log pseudo likelihood=13 805.4.

Comparison of the data in tables 1 (a & b) and 2 (a & b) yields some interesting insights to the distinctive characteristics of the post-school study choices of young Australians and Canadians. The data in table 1a indicates that the likelihood of VET being chosen differs significantly on gender lines and for reasons *not* associated with factors included in the regression models. When these factors are held constant, Australian men who do not choose university education are shown to be 3.4 times more likely than Australian women to enrol in VET. In contrast, in Canada the likelihood of men entering college or another form of non-university post-school education is not statistically different from women's (table 2a). Furthermore, there are no statistical differences between men and women in the likelihood of enrolling in a university program in either country. This indicates that the Australian VET study pathway is somewhat unique in its attractiveness to young men, as compared to young women.

The results on the interaction term between the gender and the Year 12 completion variables support this conclusion about the unique gender characteristics of Australian VET. For young Australian women, completing Year 12 *increases* the likelihood of VET being chosen over no post-school study by 50.7%. However, for Australian men, this relationship is *negative* (table 1a). In Canada, completion of Year 12 is strongly related to enrolment in college or other non-university post-school education for young women and the relationship is not statistically different for young men. Young Canadian women who complete Year 12 are 6.0 times more likely to participate in a college or other post-school education program over no post-school study than their counterparts who left school early (table 2a). For university education, in both countries completion of Year 12 is strongly and positively related to the likelihood of participation for young women and there are no significant gender differences in these relationships. Thus, it would appear that another distinctive characteristic of VET is its importance to young men who do not complete Year 12. From the data available for this study, it would appear that the Canadian college system does not perform an equivalent function.

VET—as indicated by the results in table 1a—has a number of other characteristics that set it apart both from college study by Canadians and from university study by young Australians and Canadians. Most importantly, the school leavers embarking on VET are *not* characterised by high levels of academic achievement at school. The results in table 1a show that there are no statistically significant differences in the likelihood of VET being chosen over no post-school study between girls characterised by different levels of academic achievement at school (there are no statistically

significant differences in this relationship for young men either). In contrast, in Canada, higher academic achievement in school is positively and strongly related to the likelihood of college study being chosen over no post-school study (table 2a). For example, female students with school results in the top 10% of all results have a likelihood of participating in college/other post-school education that is 6.1 times higher than that of students with results in the lowest decile of school results. The likelihood of university study being chosen is also strongly related to academic achievement in school. This applies in both countries. In Australia, for example, the probability of participation in university is 6.1 times higher for female students with school results in the top 10% of all results than for students with results in the lowest decile (table 1b). A similar pattern applies to young men. In Canada the relationship between academic achievement at school and the chances of participation in university (over no school study) is much stronger. For example, students in the top 10% of school results are 139 times more likely to participate in university than students in the lowest decile of results (table 2b). This indicates a high level of competition for university places in the Canadian system.

The distinctive nature of VET is also evident in the results on the parental education variables. There is no clear, positive relationship between higher parental qualifications and the likelihood of participation in VET by young Australian women. Indeed, the only significant indicators of participation in VET by young Australian women are having a mother with a less than degree-level qualification and a father with less than high school (as compared to university) qualifications. The risk ratio on the former variable indicates that female school leavers with mothers who have university education are 40.5% more likely to participate in VET than those with mothers with another type of post-school education. However, there is not a significant difference between the likelihood of VET being chosen by girls with a mother who has a university education and this likelihood for girls with a mother who has a lower level of education (table 1a).

In contrast, in Canada girls with a mother who has high-level qualifications are more likely to participate in college/other post-school education over no study. For example, female school leavers with a mother who is university qualified are 42.6% more likely to participate in this type of study than their counterparts whose mother has less than high school qualifications. Canadian female school leavers with a mother who is university qualified are 27.0% more likely to participate in college/other post-school education (over no post-school education) than female leavers with a mother who has only a high school qualification (table 2a).

On these variables relating to parental education, the pattern of participation in college/other post-school education by Canadian students is, once again, closer to that of Australian and Canadian university participants than Australian VET students. The results show that higher levels of parental education are generally positively related to the likelihood of participation in university study in both Australia and Canada. For example, Australian female school leavers with a mother who is university qualified are 50.0% more likely to participate in university (over no post-school education) than leavers with a mother who has less than a high school qualification (table 1b). Australian female school leavers with a father who is university qualified are 41.2% more likely to participate in university (over no post-school education) than leavers with a father who has less than a high school qualification (table 1b). A similar pattern applies in Canada (see table 2b). Female school leavers with a mother who is university qualified are 71.5% more likely to participate in university (over no post-school education) than leavers with a mother who has less than a high school qualification. Canadian female school leavers with a father who is university qualified are 58.8% more likely to participate in university (over no post-school education) than leavers with a father who has less than a high school qualification.

A number of other comparisons can be made of the post-school study choices of young Australians and Canadians. First, in both countries, female school leavers with a language background that is English (or French in the Canadian case) are *less* likely to participate in university study than students from non-traditional language backgrounds. In Australia the difference between the language groups is 44.0% (table 1b), whilst in Canada it is 55.4% (table 2b). Language

background was not a distinguishing characteristic of the female school leavers who chose VET or college study over the no post-school study option.

In Australia, female students from private schools are 44.7% more likely to participate in university (over no post-school education) than their counterparts from government schools (table 1b). In Canada, this difference is not statistically significant. Furthermore, school type is not a significant characteristic that distinguishes female school leavers who opt for no post-school study from those who choose a non-university study option in either country.

In Canada, female school leavers from a rural or regional location are more likely to be engaged in a college/other post-school education program (over no post-school education) than their urban counterparts (by 26.3%, table 2a). However, this pattern is not replicated in the Australian data for VET or in the data from either country on university study. In Canada, there are significant provincial differences in both college/other post-school education (over no post-school education) and university (over no post-school education) choices made by young women, whereas state differences are not a feature of the Australian data.

Post-school education choices observed in the LSAY98 and YITS Cohort A data

This part of the report summarises the results of a statistical analysis of the LSAY98 and YITS Cohort A data, which essentially replicated the study of post-school study described in the previous section. It was aimed at determining if there were any differences in outcomes between data sets. The use of the LSAY98 and YITS Cohort A data also allows comparisons to be drawn between the post-school study choices of young people at different points in time.

The ability of this part of the study to accomplish its aim of comparing the determinants of post-school study choices across the LSAY95 and LSAY98 cohorts, and across the YITS cohorts A and B, was restricted by some data limitations. These affected the LSAY98 data in particular, as information on the student's state of residence was absent from this data set. Comparable measures of all other variables are available.

The results of the analysis based on the LSAY98 and Cohort A data are reported in tables 3 (a & b) and 4 (a & b), beginning with the LSAY98 results. As in the previous section, the relative risk ratios (column 2) are the key data item reported.

Table 3a The likelihood of participation in VET compared to no post-school study at age 18, Australian youth, 2002

	Relative risk ratio	SE	z	P>z	95% CI	
Male	1.047	0.395	0.120	0.904	0.500	2.193
Disability	1.379	0.549	0.810	0.420	0.632	3.009
Indigenous	0.786	0.261	-0.720	0.470	0.410	1.508
Rural or Regional ^a	1.016	0.108	0.150	0.880	0.826	1.250
English language spoken at home	0.729	0.162	-1.420	0.156	0.471	1.128
Attended to Year 12 or 13 by 1998	1.047	0.130	0.370	0.711	0.821	1.336
Mother's education is other post-school ^b	1.007	0.143	0.050	0.962	0.763	1.329
No mother qualification record	0.991	0.160	-0.050	0.957	0.723	1.360
Father's education is other post-school	1.136	0.155	0.940	0.349	0.870	1.485
No father qualification record	0.943	0.168	-0.330	0.741	0.665	1.337
Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile ^c	0.894	0.152	-0.660	0.508	0.640	1.247
Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	0.917	0.146	-0.540	0.587	0.670	1.254

	Relative risk ratio	SE	z	P>z	95% CI	
Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	0.535	0.103	-3.250	0.001	0.367	0.780
Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	0.847	0.229	-0.610	0.539	0.499	1.439
Male*Disability	0.401	0.215	-1.700	0.089	0.140	1.149
Male*Indigenous	0.853	0.396	-0.340	0.733	0.344	2.119
Male*Rural or Regional	0.695	0.105	-2.410	0.016	0.517	0.935
Male*English language spoken at home	1.275	0.386	0.800	0.423	0.704	2.309
Male*Attended to Year 12 or 13 by 1998	0.705	0.121	-2.040	0.041	0.504	0.987
Male*Mother's education is other post-school	1.281	0.255	1.250	0.213	0.868	1.892
Male*No mother qualification record	1.034	0.230	0.150	0.882	0.668	1.599
Male*Father's education is other post-school	0.863	0.166	-0.770	0.442	0.592	1.258
Male*No father qualification record	0.890	0.222	-0.470	0.641	0.546	1.451
Male*Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile	1.335	0.309	1.250	0.213	0.848	2.103
Male*Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	1.276	0.278	1.120	0.263	0.833	1.954
Male*Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	2.150	0.563	2.920	0.004	1.286	3.593
Male*Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	0.890	0.343	-0.300	0.763	0.419	1.893

Notes: The default categories are: a) urban/metropolitan; b) university education; c) lowest 10%.

For tables 3a and 3b, multinomial logistic regression; number of observations: 6818; Log pseudo likelihood=6303.2.

Table 3b The likelihood of participation in university compared to no post-school study at age 18, Australian youth, 2002

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.401	0.247	-1.490	0.137	0.120	1.338
Disability	0.588	0.313	-1.000	0.318	0.207	1.668
Indigenous	0.430	0.194	-1.870	0.062	0.178	1.043
Rural or Regional ^a	0.809	0.087	-1.970	0.049	0.655	0.999
English language spoken at home	0.637	0.134	-2.150	0.032	0.421	0.962
Attended to Year 12 or 13 by 1998	22.868	6.641	10.780	0.000	12.942	40.404
Mother's education is other post-school ^b	0.966	0.135	-0.250	0.806	0.734	1.271
No mother qualification record	0.962	0.152	-0.240	0.809	0.706	1.313
Father's education is other post-school	0.764	0.101	-2.030	0.043	0.589	0.991
No father qualification record	0.603	0.107	-2.850	0.004	0.425	0.854
Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile ^c	2.687	0.642	4.130	0.000	1.682	4.293
Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	6.615	1.499	8.340	0.000	4.243	10.312
Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	9.927	2.401	9.490	0.000	6.179	15.947
Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	12.311	3.622	8.530	0.000	6.915	21.915
Male*Disability	1.184	0.809	0.250	0.805	0.310	4.517
Male*Indigenous	1.122	0.726	0.180	0.858	0.316	3.991
Male*Rural or Regional	0.697	0.111	-2.250	0.024	0.510	0.954
Male*English language spoken at home	1.088	0.316	0.290	0.771	0.616	1.922
Male*Attended to Year 12 or 13 by 1998	2.143	0.993	1.640	0.100	0.864	5.316
Male*Mother's education is other post-school	1.201	0.250	0.880	0.378	0.799	1.805
Male*No mother qualification record	1.015	0.237	0.060	0.949	0.642	1.605
Male*Father's education is other post-school	0.825	0.162	-0.980	0.328	0.562	1.212

	Relative risk ratio	SE	z	P>z	95% CI	
Male*No father qualification record	0.766	0.204	-1.000	0.316	0.455	1.290
Male*Academic achievement in Year 12 or Year 9 was in 11th to 30th percentile	0.997	0.329	-0.010	0.992	0.522	1.903
Male*Academic achievement in Year 12 or Year 9 was in 31st to 60th percentile	1.100	0.339	0.310	0.758	0.601	2.012
Male*Academic achievement in Year 12 or Year 9 was in 61st to 90th percentile	1.695	0.564	1.590	0.113	0.883	3.253
Male*Academic achievement in Year 12 or Year 9 was in 91st to 100th percentile	0.502	0.194	-1.780	0.075	0.235	1.072

Notes: The default categories are: a) urban/metropolitan; b) university education; c) lowest 10%.
Multinomial logistic regression; number of observations: 6818; Log pseudo likelihood=6303.2.

Table 4a The likelihood of participation in college/other post-school education compared to no post-school study at age 19, Canadian youth, 2004

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.742	0.356	-0.620	0.533	0.290	1.898
Disability	1.367	0.248	1.720	0.086	0.957	1.951
Indigenous	0.836	0.206	-0.730	0.467	0.515	1.355
Rural or Regional ^a	1.168	0.137	1.330	0.183	0.929	1.469
English or French language was first spoken	0.787	0.164	-1.150	0.252	0.523	1.185
Last school was private	2.620	0.658	3.830	0.000	1.601	4.288
Last school was in Newfoundland or Labrador ^b	0.809	0.105	-1.640	0.102	0.628	1.043
Last school was in Prince Edward Island	0.488	0.096	-3.640	0.000	0.332	0.719
Last school was in Nova Scotia	0.717	0.132	-1.800	0.071	0.499	1.029
Last school was in New Brunswick	0.636	0.110	-2.620	0.009	0.454	0.893
Last school was in Quebec	3.178	0.600	6.120	0.000	2.194	4.602
Last school was in Manitoba	0.426	0.079	-4.570	0.000	0.296	0.614
Last school was in Saskatchewan	0.400	0.068	-5.380	0.000	0.286	0.558
Last school was in Alberta	0.436	0.066	-5.510	0.000	0.325	0.586
Last school was in British Columbia	0.430	0.069	-5.230	0.000	0.313	0.590
Attended to Year 12 or 13 by 2000	1.254	0.183	1.550	0.121	0.942	1.669
Mother's education is other post-school ^c	1.013	0.191	0.070	0.946	0.700	1.466
Mother's education is only high school	1.047	0.193	0.250	0.803	0.730	1.503
Mother's education is less than high school	0.684	0.149	-1.750	0.081	0.447	1.048
No mother present	0.446	0.158	-2.280	0.022	0.223	0.892
Father's education is other post-school	0.873	0.150	-0.790	0.430	0.624	1.223
Father's education is only high school	0.706	0.123	-1.990	0.046	0.502	0.995
Father's education is less than high school	0.419	0.083	-4.370	0.000	0.283	0.619
Academic achievement in last school year was in 11th to 30th percentile ^d	1.474	0.319	1.790	0.073	0.964	2.253
Academic achievement in last school year was in 31st to 60th percentile	2.492	0.503	4.520	0.000	1.678	3.701
Academic achievement in last school year was in 61st to 90th percentile	3.400	0.708	5.870	0.000	2.260	5.115
Academic achievement in last school year was in 91st to 100th percentile	2.949	0.888	3.590	0.000	1.635	5.321
Male*Disability	0.814	0.238	-0.700	0.482	0.458	1.446
Male*Indigenous	1.145	0.397	0.390	0.697	0.580	2.261
Male*Rural or Regional	0.779	0.121	-1.610	0.108	0.575	1.056
Male*English or French language was first spoken	0.766	0.212	-0.960	0.336	0.446	1.318
Male*Last school was private	0.967	0.298	-0.110	0.913	0.529	1.767

	Relative risk ratio	SE	z	P>z	95% CI	
Male*Last school was in Prince Edward Island	1.336	0.371	1.040	0.296	0.776	2.302
Male*Last school was in Nova Scotia	1.191	0.299	0.700	0.487	0.728	1.950
Male*Last school was in New Brunswick	1.059	0.250	0.240	0.809	0.667	1.682
Male*Last school was in Quebec	0.595	0.149	-2.080	0.038	0.365	0.971
Male*Last school was in Manitoba	0.691	0.182	-1.400	0.161	0.413	1.158
Male*Last school was in Saskatchewan	0.923	0.212	-0.350	0.727	0.589	1.447
Male*Last school was in Alberta	1.056	0.217	0.260	0.792	0.705	1.580
Male*Last school was in British Columbia	1.398	0.309	1.510	0.130	0.906	2.157
Male*Attended to Year 12 or 13 by 1998	0.887	0.179	-0.600	0.550	0.597	1.316
Male*Mother's education is other post-school	0.835	0.203	-0.740	0.457	0.518	1.344
Male*Mother's education is only high school	0.715	0.170	-1.410	0.159	0.448	1.140
Male*Mother's education is less than high school	0.650	0.190	-1.480	0.140	0.366	1.151
Male*No mother present	0.923	0.429	-0.170	0.864	0.372	2.293
Male*Father's education is other post-school	1.173	0.264	0.710	0.479	0.755	1.822
Male*Father's education is only high school	1.271	0.289	1.050	0.292	0.814	1.985
Male*Father's education is less than high school	1.712	0.451	2.040	0.041	1.022	2.869
Male*Academic achievement in last school year was in 11th to 30th percentile	1.289	0.372	0.880	0.379	0.732	2.271
Male*Academic achievement in last school year was in 31st to 60th percentile	1.381	0.376	1.190	0.235	0.810	2.355
Male*Academic achievement in last school year was in 61st to 90th percentile	2.050	0.586	2.510	0.012	1.171	3.590
Male*Academic achievement in last school year was in 91st to 100th percentile	2.256	1.005	1.830	0.068	0.942	5.402

Notes: The default categories are: a) urban/metropolitan; b) Ottawa; c) university education; d) lowest 10%.

For tables 4a and 4b, multinomial logistic regression; number of observations: 14 459; Log pseudo likelihood=11 716.6.

Table 4b The likelihood of participation in university compared to no post-school study at age 19, Canadian youth, 2004

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.739	0.431	-0.520	0.604	0.235	2.319
Disability	0.889	0.178	-0.590	0.556	0.601	1.316
Indigenous	0.508	0.156	-2.210	0.027	0.278	0.925
Rural or Regional ^a	0.871	0.104	-1.150	0.251	0.689	1.102
English or French language was first spoken	0.556	0.120	-2.720	0.006	0.364	0.849
Last school was private	3.178	0.865	4.250	0.000	1.865	5.417
Last school was in Newfoundland or Labrador ^b	1.842	0.252	4.480	0.000	1.410	2.408
Last school was in Prince Edward Island	1.006	0.189	0.030	0.976	0.695	1.455
Last school was in Nova Scotia	1.600	0.287	2.620	0.009	1.126	2.274
Last school was in New Brunswick	1.209	0.199	1.150	0.250	0.875	1.670
Last school was in Quebec	0.849	0.175	-0.790	0.427	0.566	1.272
Last school was in Manitoba	0.865	0.155	-0.810	0.418	0.609	1.229
Last school was in Saskatchewan	0.581	0.098	-3.230	0.001	0.418	0.808
Last school was in Alberta	0.502	0.075	-4.590	0.000	0.374	0.673
Last school was in British Columbia	0.405	0.068	-5.400	0.000	0.292	0.563
Attended to Year 12 or 13 by 2000	2.962	0.447	7.200	0.000	2.204	3.982
Mother's education is other post-school ^c	0.698	0.131	-1.920	0.055	0.484	1.007
Mother's education is only high school	0.516	0.097	-3.530	0.000	0.357	0.745
Mother's education is less than high school	0.225	0.054	-6.230	0.000	0.140	0.359

	Relative risk ratio	SE	z	P>z	95% CI	
No mother present	0.178	0.060	-5.090	0.000	0.092	0.346
Father's education is other post-school	0.471	0.080	-4.460	0.000	0.338	0.656
Father's education is only high school	0.346	0.061	-6.050	0.000	0.245	0.488
Father's education is less than high school	0.212	0.043	-7.620	0.000	0.142	0.316
Academic achievement in last school year was in 11th to 30th percentile ^d	5.248	1.915	4.540	0.000	2.566	10.731
Academic achievement in last school year was in 31st to 60th percentile	17.284	5.898	8.350	0.000	8.855	33.736
Academic achievement in last school year was in 61st to 90th percentile	71.356	24.435	12.460	0.000	36.471	139.608
Academic achievement in last school year was in 91st to 100th percentile	169.584	67.270	12.940	0.000	77.935	369.009
Male*Disability	0.998	0.343	-0.010	0.996	0.509	1.957
Male*Indigenous	1.131	0.599	0.230	0.816	0.401	3.191
Male*Rural or Regional	0.574	0.098	-3.240	0.001	0.410	0.803
Male*English or French language was first spoken	1.028	0.305	0.090	0.926	0.574	1.840
Male*Last school was private	1.266	0.453	0.660	0.509	0.628	2.554
Male*Last school was in Prince Edward Island	1.657	0.451	1.850	0.064	0.972	2.826
Male*Last school was in Nova Scotia	1.459	0.372	1.480	0.139	0.885	2.404
Male*Last school was in New Brunswick	1.582	0.391	1.860	0.064	0.975	2.569
Male*Last school was in Quebec	0.358	0.107	-3.430	0.001	0.199	0.644
Male*Last school was in Manitoba	1.031	0.266	0.120	0.905	0.622	1.710
Male*Last school was in Saskatchewan	1.532	0.358	1.830	0.068	0.969	2.421
Male*Last school was in Alberta	1.568	0.337	2.090	0.036	1.029	2.388
Male*Last school was in British Columbia	1.561	0.372	1.870	0.061	0.979	2.489
Male*Attended to Year 12 or 13 by 1998	0.774	0.166	-1.190	0.233	0.508	1.180
Male*Mother's education is other post-school	0.775	0.193	-1.030	0.305	0.475	1.262
Male*Mother's education is only high school	0.753	0.189	-1.130	0.259	0.460	1.232
Male*Mother's education is less than high school	0.833	0.276	-0.550	0.582	0.435	1.596
Male*No mother present	1.156	0.538	0.310	0.755	0.464	2.878
Male*Father's education is other post-school	1.183	0.275	0.720	0.470	0.750	1.867
Male*Father's education is only high school	1.179	0.279	0.700	0.485	0.742	1.875
Male*Father's education is less than high school	1.300	0.395	0.860	0.387	0.717	2.357
Male*Academic achievement in last school year was in 11th to 30th percentile	0.507	0.240	-1.430	0.151	0.200	1.283
Male*Academic achievement in last school year was in 31st to 60th percentile	0.822	0.361	-0.450	0.656	0.348	1.944
Male*Academic achievement in last school year was in 61st to 90th percentile	1.139	0.506	0.290	0.770	0.477	2.721
Male*Academic achievement in last school year was in 91st to 100th percentile	2.257	1.271	1.450	0.148	0.749	6.803

Notes: The default categories are: a) urban/metropolitan; b) Ottawa; c) university education; d) lowest 10%.
Multinomial logistic regression; number of observations: 14 459; Log pseudo likelihood=11 716.6.

The results presented in tables 3 (a & b) and 4 (a & b) show several important similarities with—as well as some differences to—those in tables 1 (a & b) and 2 (a & b). Importantly, the gender difference (unrelated to the factors in the model) that was apparent in enrolment into VET or another form of non-university education in the LSAY95 data is not statistically significant in the LSAY98 data.

The results on the interaction term between the gender and the Year 12 completion variables also changed between the two LSAY cohorts. In the LSAY98 cohort, this term is not significantly

different from zero. However, it is important to note that, in this cohort (as was the case for the 1995 cohort), men completing Year 12 have a lower likelihood of choosing VET over no post-school education compared to Year 12 completers. For young women in the 1998 cohort this relationship is positive, but not statistically significant. In contrast to the YITS Cohort B results, completion of Year 12 is not significantly related to enrolment in college or other non-university post-school education for young women (or young men). However, for university education, in both countries completion of Year 12 remains strongly and positively related to the likelihood of participation by women. There are no statistically significant differences in the relationship for young men. In summary, VET remains unique in that it is more important to early school leavers than Year 12 completers. However, across LSAY98 and Cohort A cohorts, the distinctiveness of this element appears to have fallen.

Another distinctive element of VET highlighted in the previous section was its low correlation with academic achievement at school. The results in tables 3 (a & b) and 4 (a & b) indicate that this particular characteristic has not changed substantially. Apart from the case of women in the 61st to 90th percentile of school results¹⁰, there are no statistically significant differences in the likelihood of VET being chosen (over no post-school education) that can be related to academic achievement at school. In Canada, as was the case for YITS Cohort B, higher academic achievement in school is positively related to the likelihood of the college choice (over no post-school education). However, the magnitude of this effect fell across the cohorts. For example, in YITS Cohort A female students with school results in the top 10% of all results have a likelihood of participating in college/other post-school education that is 2.9 times higher than that of female students with results in the lowest decile (table 4a). In Cohort B this effect was 6.1 times (table 2a).

The likelihood of the university choice remained strongly related to academic achievement in school in both countries in the LSAY98 and YITS Cohort A data. In Australia, for example, the probability of participation in university (over no post-school education) in the LSAY98 data is 12.3 times higher for female students with school results in the top 10% of all results than for female students with results in the lowest decile (table 3b). In the LSAY95 results this effect was 6.1 times (table 1b). In each country, gender differences in these relationships were not statistically significant.

The relationship between parental education and the likelihood of alternative post-school educational choices was also highlighted as a distinctive characteristic of VET in the previous section. In the 1998 data parental education is less precisely measured. However, the data that is available indicates that higher levels of parental education are *not* associated with the choice of VET (over no post-school education) by young Australian women (none of the coefficients on the parental education variables were significantly different from zero). In contrast, in Canada the educational qualifications of fathers in the Cohort A results are, in the main, positively related to the likelihood of participation in college/other post-school education. For example, female school leavers with a father with less than high school education qualifications are 58.1% less likely to participate than those with fathers with university qualifications (table 4a). However, in contrast to the YITS Cohort B results, female school leavers with mothers with high level qualifications are no more likely to participate in college/other post-school education (over no post-school education; table 4a).

This change did not apply to the characteristics of Canadian school leavers choosing university over no post-school education. Canadian female school leavers with a mother who is university qualified are 77.5% more likely to participate in university (over no post-school education) than leavers with a mother who has less than a high school qualification (table 4b); in the Cohort B data this effect was 71.5% (see table 2b). Canadian female school leavers with a father who is university qualified are 78.8% more likely to participate in university (over no post-school education) than leavers with a father who has less than a high school qualification (table 4b); in the Cohort B data this effect was

¹⁰ The likelihood of VET/other post-school education for this group is only 53.5% of the likelihood recorded by student in the bottom decile of results.

58.8% (see table 2b). In the LSAY98 data Australian female school leavers with a father who is university qualified are 39.7% more likely to participate in university than leavers with a father without a measured educational qualification (table 3b). In the LSAY95 results female leavers with a father with university qualifications were 41.2% more likely to participate in university (over no post-school education) than leavers whose fathers had less than a high school qualification (table 1b).

Only a small number of other changes are apparent across the cohorts. In the LSAY98 data a significant (and negative) difference is present in the likelihood of participation in university (over no post-school education) between rural and urban female school leavers (table 3b). This difference was not apparent in the 1995 results, a change that is likely to be due to the omission of the state variables in the 1998 data. In the Canadian Cohort A data private school attendance is significantly and positively correlated with participation in college/other post-school education (table 4a), whereas this effect was not statistically significant in the Cohort B data (table 2a).

Language background remained a strong determinant of participation in university across the cohorts. In Australia the difference in the likelihood of participation in university between female students with an English background and those from other language groups is -36.3% in the LSAY98 data (table 3b). In Canada, in the Cohort A data, the difference is -44.4% (table 4b). As was the case for the LSAY95 and Cohort B results, language background was not a distinguishing characteristic of the school leavers who chose VET or college (over no post-school education).

In the Canadian data, provincial differences in participation in both types of post-school education remained strong. However, in contrast to the Cohort B results, rural versus urban location was not associated with significant differences in participation in post-school study for Cohort A.

Labour market participation

The previous section highlighted a number of distinctive characteristics of young people participating in VET in Australia. In particular, the results indicate the absence of a strong relationship between participation in this pathway and academic achievement at school or parental education. This contrasts with the patterns of participation in college/other post-school education by Canadian youth and participation in university by young people in both Australia and Canada. These patterns show that academic achievement in school and high parental socio-economic status (proxied by parental education) are key determinants of these particular choices of post-school education.

The theoretical material discussed earlier in the report may cast some light on these different patterns. It highlighted the human capital theory assumption of a critical relationship between the demand for education and the labour market reward for education. This theoretical perspective also posits that, if the demand for education is high relative to the available educational places, then the scarce educational slots are likely to be allocated on the basis of academic merit and/or family financial resources.

By implication, the strength of the relationship between participation in a particular type of post-school education and academic achievement at school and socio-economic background can be theorised to be proportional to the labour market rewards associated with the education. That is, if a program of education is associated with high labour market rewards then the competition for scarce places will be intense. As a result, in these circumstances, the available educational slots are most likely to go to students with the highest academic scores at school and/or the greatest financial resources. However, if a program of education is not in high demand because its labour market returns are perceived to be small, then the role of academic ability and financial resources in allocating places will be diminished. In sum, the patterns of participation in post-school education across individuals with different levels of academic ability and different socio-economic status are likely to reflect the different labour market 'rewards' associated with the various types of education.

This theorised relationship between labour market rewards and patterns of participation in post-school education gives importance to the results summarised in the following set of tables. They are derived from a multinomial logit model of the likelihood of one of three possible employment states (full-time employment, part-time employment or not employed) by, approximately, age 25. Importantly, they show the relationship between the level of educational attainment and the chances of different employment states by the time a young person reaches his or her mid twenties.

Table 5a For those employed part-time compared to full-time, the likelihood of different types of engagement in the labour market at age 25, Australian youth, 2006¹

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.803	0.591	-0.300	0.766	0.190	3.395
Disability	1.063	0.892	0.070	0.942	0.206	5.500
Indigenous	0.482	0.278	-1.260	0.206	0.156	1.494
Rural or Regional ^a	1.365	0.224	1.900	0.058	0.990	1.883
English language spoken at home	1.920	0.641	1.950	0.051	0.998	3.695
Ever married	0.653	0.106	-2.630	0.008	0.476	0.897
If a parent	8.012	2.063	8.080	0.000	4.837	13.272
Completed university qualification ^b	1.123	0.437	0.300	0.765	0.524	2.406
Completed other post-school qualification	0.992	0.397	-0.020	0.984	0.453	2.172
Incomplete university qualification	1.701	0.692	1.310	0.191	0.767	3.775
Incomplete other post-school qualification	1.558	0.652	1.060	0.289	0.686	3.538
Lived in Victoria in 2006 ^c	0.845	0.200	-0.710	0.476	0.531	1.343
Lived in Queensland in 2006	0.903	0.260	-0.350	0.724	0.514	1.589
Lived in South Australia or NT in 2006	1.369	0.294	1.470	0.142	0.900	2.085
Lived in Western Australia in 2006	0.857	0.334	-0.390	0.693	0.399	1.842
Lived in Tasmania in 2006	1.010	0.755	0.010	0.989	0.234	4.368
Lived in the ACT in 2006	0.865	0.196	-0.640	0.523	0.555	1.349
Male*Disability	3.704	3.637	1.330	0.182	0.541	25.375
Male*Indigenous	3.864	3.988	1.310	0.190	0.511	29.218
Male*Rural or Regional	0.433	0.116	-3.110	0.002	0.256	0.734
Male*English language spoken at home	0.858	0.418	-0.310	0.754	0.330	2.232
Male*Ever married	0.827	0.228	-0.690	0.491	0.481	1.421
Male*If a parent	0.133	0.081	-3.320	0.001	0.040	0.437
Male*Completed university qualification	1.611	0.865	0.890	0.375	0.562	4.614
Male*Completed other post-school qualification	0.776	0.438	-0.450	0.653	0.257	2.345
Male*Incomplete university qualification	1.740	0.961	1.000	0.316	0.590	5.138
Male*Incomplete other post-school qualification	1.541	0.912	0.730	0.465	0.483	4.918
Male*Lived in Victoria in 2006	0.916	0.324	-0.250	0.803	0.458	1.830
Male*Lived in Queensland in 2006	1.256	0.510	0.560	0.575	0.566	2.786
Male*Lived in South Australia in 2006	0.609	0.223	-1.360	0.175	0.297	1.247
Male*Lived in Western Australia in 2006	1.060	0.743	0.080	0.934	0.268	4.188
Male*Lived in Tasmania in 2006	0.162	0.216	-1.370	0.171	0.012	2.197
Male*Lived in the ACT in 2006	0.981	0.345	-0.050	0.957	0.493	1.955

Notes: 1) Full-time employment is defined as working more than 30 hours per week; part-time work is defined as working between 0 and 30 hours per week.

The default categories are (a) urban/metropolitan; (b) never enrolled in post-school study (c) Lived in NSW in 2006. For tables 5a and 5b, multinomial logistic regression; number of observations: 3172; Log pseudo likelihood=2079.9.

Table 5b For those not employed compared to full-time, the likelihood of different types of engagement in the labour market at age 25, Australian youth, 2006¹

	Relative risk ratio	SE	z	P>z	95% CI	
Male	1.069	0.942	0.080	0.940	0.190	6.018
Disability	7.833	4.918	3.280	0.001	2.288	26.816
Indigenous	0.800	0.475	-0.370	0.708	0.250	2.564
Rural or Regional ^a	1.438	0.337	1.550	0.121	0.908	2.277
English language spoken at home	0.722	0.247	-0.950	0.340	0.369	1.412
Ever married	0.538	0.136	-2.450	0.014	0.327	0.883
If a parent	39.890	11.627	12.650	0.000	22.530	70.626
Completed university qualification ^b	1.105	0.437	0.250	0.802	0.509	2.399
Completed other post-school qualification	1.079	0.452	0.180	0.857	0.474	2.454
Incomplete university qualification	1.702	0.726	1.250	0.213	0.737	3.928
Incomplete other post-school qualification	2.097	0.910	1.710	0.088	0.896	4.908
Lived in Victoria in 2006 ^c	0.566	0.179	-1.800	0.071	0.305	1.051
Lived in Queensland in 2006	0.556	0.232	-1.410	0.159	0.246	1.259
Lived in South Australia in 2006	1.160	0.360	0.480	0.632	0.632	2.129
Lived in Western Australia in 2006	1.400	0.787	0.600	0.549	0.465	4.215
Lived in Tasmania in 2006	0.116	0.164	-1.530	0.127	0.007	1.837
Lived in the ACT in 2006	1.133	0.360	0.390	0.695	0.607	2.113
Male*Disability	0.730	0.607	-0.380	0.705	0.143	3.721
Male*Indigenous	8.244	6.920	2.510	0.012	1.591	42.717
Male*Rural or Regional	0.733	0.285	-0.800	0.424	0.342	1.569
Male*English language spoken at home	1.160	0.634	0.270	0.785	0.398	3.385
Male*Ever married	1.151	0.516	0.310	0.754	0.478	2.771
Male*Parent	0.015	0.012	-5.280	0.000	0.003	0.072
Male*Completed university qualification	1.150	0.764	0.210	0.833	0.313	4.227
Male*Completed other post-school qualification	0.520	0.359	-0.950	0.343	0.134	2.010
Male*Incomplete university qualification	1.133	0.759	0.190	0.852	0.305	4.215
Male*Incomplete other post-school qualification	0.313	0.243	-1.500	0.134	0.068	1.431
Male*Lived in Victoria in 2006	1.404	0.712	0.670	0.503	0.520	3.793
Male*Lived in Queensland in 2006	1.725	1.198	0.790	0.432	0.442	6.726
Male*Lived in South Australia in 2006	1.124	0.556	0.240	0.814	0.426	2.966
Male*Lived in Western Australia in 2006	1.488	1.300	0.460	0.649	0.269	8.244
Male*Lived in Tasmania in 2006	12.360	19.876	1.560	0.118	0.529	288.956
Male*Lived in the ACT in 2006	0.772	0.400	-0.500	0.618	0.279	2.133

Notes: 1) Full-time employment is defined as working more than 30 hours per week; not employed is defined as including unemployment and not in the labour market.

The default categories are (a) urban/metropolitan; (b) never enrolled in post-school study (c) Lived in NSW in 2006. For tables 5a and 5b, multinomial logistic regression; number of observations: 3172; Log pseudo likelihood=2079.9.

Table 6a For those employed part-time compared to full-time, the likelihood of different types of engagement in the labour market at ages 24 to 26, Canadian youth, 2006¹

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.800	0.376	-0.470	0.635	0.319	2.007
Disability	1.729	0.440	2.150	0.032	1.050	2.848
Indigenous	0.673	0.270	-0.990	0.324	0.307	1.477
Rural or Regional ^a	0.817	0.211	-0.780	0.435	0.493	1.356
English language spoken at home	1.537	0.254	2.600	0.009	1.111	2.126
Ever married	0.766	0.117	-1.750	0.080	0.569	1.032
If a parent	2.053	0.335	4.410	0.000	1.491	2.827
Completed university qualification ^b	0.711	0.138	-1.760	0.078	0.486	1.039
Completed other post-school qualification	0.798	0.147	-1.230	0.220	0.557	1.144
Incomplete university qualification	1.140	0.302	0.500	0.620	0.679	1.915
Incomplete other post-school qualification	1.586	0.474	1.540	0.123	0.883	2.851
Living in Newfoundland or Labrador ^c	0.882	0.258	-0.430	0.666	0.497	1.564
Living in Prince Edward Island	0.475	0.296	-1.190	0.233	0.140	1.612
Living in Nova Scotia	0.738	0.206	-1.090	0.277	0.427	1.276
Living in New Brunswick	0.395	0.122	-3.020	0.003	0.216	0.722
Living in Quebec	1.028	0.190	0.150	0.880	0.715	1.478
Living in Manitoba	1.180	0.260	0.750	0.453	0.766	1.817
Living in Saskatchewan	1.624	0.394	2.000	0.046	1.009	2.614
Living in Alberta	0.859	0.185	-0.710	0.480	0.564	1.309
Living in British Columbia	1.582	0.345	2.110	0.035	1.032	2.426
Male*Disability	1.735	1.056	0.910	0.365	0.526	5.719
Male*Indigenous	3.898	2.574	2.060	0.039	1.068	14.219
Male*Rural or Regional	0.710	0.294	-0.830	0.408	0.316	1.597
Male*English language spoken at home	0.695	0.214	-1.180	0.237	0.381	1.270
Male*Ever married	0.827	0.244	-0.640	0.519	0.464	1.473
Male*If a parent	0.610	0.292	-1.030	0.303	0.239	1.561
Male*Completed university qualification	2.057	0.785	1.890	0.059	0.974	4.345
Male*Completed other post-school qualification	1.109	0.415	0.280	0.782	0.533	2.308
Male*Incomplete university qualification	1.539	0.807	0.820	0.411	0.551	4.300
Male*Incomplete other post-school qualification	0.771	0.351	-0.570	0.567	0.316	1.881
Male*Living in Newfoundland or Labrador	0.521	0.289	-1.180	0.240	0.176	1.545
Male*Living in Prince Edward Island	1.227	1.192	0.210	0.833	0.183	8.239
Male*Living in Nova Scotia	0.674	0.316	-0.840	0.400	0.269	1.690
Male*Living in New Brunswick	1.692	0.831	1.070	0.284	0.646	4.430
Male*Living in Quebec	0.675	0.216	-1.230	0.220	0.361	1.264
Male*Living in Manitoba	0.408	0.166	-2.210	0.027	0.185	0.904
Male*Living in Saskatchewan	0.165	0.099	-2.990	0.003	0.051	0.537
Male*Living in Alberta	0.551	0.240	-1.370	0.170	0.235	1.292
Male*Living in British Columbia	0.739	0.307	-0.730	0.466	0.328	1.666

Notes: 1) Full-time employment is defined as working more than 30 hours per week; part-time work is defined as working between 0 and 30 hours per week.
The default categories are: (a) urban/metropolitan; (b) never enrolled in post-school study (c) Lived in Ottawa in 2006.
For tables 6a and 6b, multinomial logistic regression; number of observations: 9266; Log pseudo likelihood=5793.9.

Table 6b For those not employed compared to full-time, the likelihood of different types of engagement in the labour market at ages 24 to 26, Canadian youth, 2006¹

	Relative risk ratio	SE	z	P>z	95% CI	
Male	0.846	0.359	-0.390	0.693	0.368	1.943
Disability	1.931	0.780	1.630	0.103	0.875	4.261
Indigenous	1.157	0.384	0.440	0.660	0.604	2.219
Rural or Regional ^a	1.495	0.229	2.630	0.009	1.107	2.018
English language spoken at home	0.763	0.182	-1.140	0.255	0.478	1.216
Ever married	0.856	0.145	-0.920	0.358	0.614	1.193
If a parent	5.155	0.877	9.640	0.000	3.694	7.194
Completed university qualification ^b	0.379	0.077	-4.760	0.000	0.254	0.565
Completed other post-school qualification	0.659	0.125	-2.190	0.029	0.454	0.957
Incomplete university qualification	0.748	0.230	-0.950	0.344	0.410	1.365
Incomplete other post-school qualification	0.830	0.269	-0.580	0.565	0.440	1.565
Living in Newfoundland or Labrador ^c	2.417	0.666	3.200	0.001	1.408	4.147
Living in Prince Edward Island	0.916	0.314	-0.260	0.797	0.467	1.795
Living in Nova Scotia	0.907	0.255	-0.350	0.729	0.523	1.573
Living in New Brunswick	0.787	0.238	-0.790	0.429	0.436	1.423
Living in Quebec	0.840	0.173	-0.850	0.398	0.561	1.258
Living in Manitoba	1.087	0.278	0.330	0.743	0.659	1.794
Living in Saskatchewan	0.936	0.240	-0.260	0.795	0.566	1.546
Living in Alberta	0.770	0.185	-1.090	0.277	0.481	1.234
Living in British Columbia	0.805	0.203	-0.860	0.391	0.491	1.320
Male*Disability	1.643	0.810	1.010	0.314	0.625	4.318
Male*Indigenous	1.101	0.391	0.270	0.786	0.549	2.209
Male*Rural or Regional	1.217	0.663	0.360	0.718	0.419	3.540
Male*English language spoken at home	0.888	0.211	-0.500	0.618	0.558	1.414
Male*Ever married	0.517	0.150	-2.270	0.023	0.293	0.915
Male*If a parent	0.251	0.084	-4.120	0.000	0.130	0.484
Male*Completed university qualification	2.674	0.863	3.050	0.002	1.421	5.034
Male*Completed other post-school qualification	1.150	0.339	0.470	0.636	0.645	2.049
Male*Incomplete university qualification	1.118	0.526	0.240	0.812	0.445	2.811
Male*Incomplete other post-school qualification	1.372	0.542	0.800	0.422	0.633	2.974
Male*Living in Newfoundland or Labrador	0.689	0.268	-0.960	0.337	0.322	1.475
Male*Living in Prince Edward Island	0.771	0.390	-0.510	0.607	0.286	2.078
Male*Living in Nova Scotia	1.154	0.457	0.360	0.718	0.531	2.506
Male*Living in New Brunswick	2.033	0.828	1.740	0.081	0.916	4.516
Male*Living in Quebec	1.246	0.404	0.680	0.497	0.660	2.352
Male*Living in Manitoba	0.455	0.185	-1.930	0.053	0.205	1.010
Male*Living in Saskatchewan	0.842	0.336	-0.430	0.666	0.385	1.840
Male*Living in Alberta	1.446	0.557	0.960	0.337	0.680	3.075
Male*Living in British Columbia	1.792	0.654	1.600	0.110	0.876	3.664

Notes: 1) Full-time employment is defined as working more than 30 hours per week; not employed is defined as including unemployment and not in the labour market
The default categories are: (a) urban/metropolitan; (b) never enrolled in post-school study (c) Lived in Ottawa in 2006.
For tables 6a and 6b, multinomial logistic regression; number of observations: 9266; Log pseudo likelihood=5793.9.

The results in tables 5a and 5b do *not* show significant differences in the likelihood of alternative labour market outcomes at age 25 between young Australians with low educational attainment (defined as less than university qualification) and their peers. Indeed, these results indicate that neither VET nor university qualifications increase the likelihood of full-time employment at age 25.

This is a somewhat perplexing result, given the strength of the predictions of the human capital model mentioned earlier and the results of a raft of empirical studies showing positive rates of return from investments in university education in particular. However, the results on the influence of VET qualifications are in line with the findings of other Australian studies. As summarised by Marks (2006, p.3) ‘there is evidence that full-time vocational study is not particularly beneficial in terms of labour market outcomes’.

The results also contrast with those from the YITS Cohort B (shown in table 6b), which indicate that women who have *completed* either a university qualification or another post-school qualification by age 24 to 26 are more likely to be full-time employed (over not employed) than their counterparts who did not engage in any post-school study. For university qualified women this effect is 62.1%; for women with other post-school qualifications the effect is 34.1%.

Two possible explanations of the Australian results can be offered: first, the impact of educational choices on labour market outcomes is not fully apparent by age 25. Indeed, at this age those school leavers who did not engage in any post-school study are likely to have benefited from additional years in the labour market. The extra period that was available to them for job search is likely to have contributed to a higher chance of employment at age 25, *ceteris paribus*. However, this early experience in the labour market may not translate to greater chances of employment retention at older ages—or *higher wage outcomes*. That is, at older ages, the advantage of high educational attainment may become larger. Ideally, future studies of the labour market impacts of post-school study will address this possibility.

The positive impacts of post-school study on the employment chances of young Canadians are an interesting contrast to the Australian results in this regard. This difference may be linked to the different characteristics of the groups of young people engaged in post-school study in the two countries. In Canada the group with low educational attainment features a relatively high proportion of individuals with low academic results at school and with less favourable family backgrounds. The results shown here may indicate the difficulties these young people experience in ‘competing’ in a labour market where post-secondary qualifications are common.

The Australian results, showing low correlation between educational attainment and employment at age 25, may also be due to the impact of parenting on employment and the links between parenting and education. Being a parent strongly affects the likelihood of full-time employment for young women. In Australia, young women who are parents at age 25 are 39.9 times more likely to be *not* working (instead of full-time employed) than their counterparts who are not mothers (table 5b). In Canada this effect is smaller, at 5.2 times (table 6b). To the extent that parenting is linked to educational choices, then the risk ratios on the education variables will be biased downwards and the independent effect of parenting may be overstated.

The last component of the statistical analysis for this study addresses this possibility. It focuses on the role of parenthood in determining the likelihood of a transition from employment to non-employment between ages 22 and 25 by Australian women. The analysis is conducted separately for women with university qualifications, those with TAFE qualifications and those with no post-school qualifications at age 22. The sample is limited to young women who were employed in 2003. As such, the results of the analysis, which are summarised in table 7, identify how parenthood affects the chances of retaining paid employment at a relatively young age, across groups characterised by different levels of educational attainment. The results re-emphasise the importance of parenthood to the employment outcomes of young women (having a child between age 22 and 25 is a key determinant of the likelihood of a transition out of paid employment). However, they also show that the effect of new motherhood on employment retention differs by a large magnitude between young women with university qualifications and young women with lower levels of educational attainment. Having a child increased the probability of leaving paid work by 14.8 percentage points in the group of young women with university qualifications. For young women with TAFE qualifications this effect was much higher, at 44.0 percentage points. For women with no post-school qualification the effect was 40.9 percentage points.

In sum, the results in table 7 provide another perspective on the impacts of educational attainment on labour market participation. High educational attainment acts to reduce the vulnerability of labour market participation by young women to parenthood. This increased attachment to the labour market is likely to also have impacts on employment and earnings chances over the life course. Thus, educational attainment can be expected to have both short- and long-term impacts on patterns of labour force participation by women.

Table 7 Probability of making a transition from employment between 2003 and 2006, young Australian women by post-school qualifications

	Marginal effect	Std Err.	P> z	95% CI	
University qualified by 2003					
Living in rural area	-0.011	0.024	0.664	-0.058	0.037
Had a child between 2003 and 2006	0.148	0.087	0.015	-0.022	0.318
Became married between 2003 and 2006	0.000	0.026	0.985	-0.050	0.051
Language is English	0.006	0.040	0.892	-0.072	0.084
Generalised residual on selection into employment in 2003	0.213	0.087	0.011	0.043	0.382
TAFE qualified by 2003					
Living in rural area	0.005	0.035	0.896	-0.065	0.074
Had a child between 2003 and 2006	0.440	0.107	0.000	0.231	0.650
Became married between 2003 and 2006	-0.011	0.036	0.768	-0.081	0.059
Language is English	-0.024	0.062	0.663	-0.146	0.097
Generalised residual on selection into employment in 2003	0.219	0.079	0.002	0.065	0.373
No post-school qualification by 2003					
Living in rural area	0.032	0.030	0.286	-0.027	0.091
Had a child between 2003 and 2006	0.409	0.083	0.000	0.246	0.572
Became married between 2003 and 2006	-0.011	0.027	0.685	-0.065	0.042
Language is English	0.041	0.038	0.402	-0.034	0.117
Generalised residual on selection into employment in 2003	0.145	0.047	0.002	0.053	0.236

Notes: No. observations: university = 446; TAFE = 301; no PSE = 474. RLL: university = 99.8; TAFE = 74.2; no PSE = 124.5.

Conclusion

This report highlights the different characteristics of the transitions into post-school and/or the labour market of young Australian and Canadian men and women. The analysis made extensive use of data from the Longitudinal Survey of Australian Youth (LSAY) and the Canadian Youth in Transition Survey (YITS) to generate insights to cross-national differences and changes in educational and labour market transitions between the two countries.

The statistical analysis of the educational transitions of young Australians and Canadians indicated a number of distinctive features of the characteristics of young people participating in VET in Australia. In particular, the analysis pointed to a lack of a strong relationship between participation in VET and academic achievement at school. It also identified a weak relationship between participation in this type of post-school study and levels of parental education. Each of these findings were broadly in line with the results of previous Australian research on participation in VET (as summarised in the literature review), but they contrasted with the findings on the characteristics of Canadian participants in college/other post-school education. In Canada, non-university post-school education is more likely to be taken by young people with relatively high levels of academic achievement and from more advantaged family backgrounds. This makes it more similar in its characteristics to university education in both Australia and Canada.

These results could be taken to imply that VET provides Australian students with low educational outcomes at school and/or from less advantaged family backgrounds with educational opportunities that are not present in the Canadian system. However, less positively, the results may also indicate that there is a lack of competition for places within the VET system. This, in turn, could indicate that students and/or their parents do not perceive positive labour market outcomes from achieving a VET qualification. This report provides some evidence on this latter conjecture by demonstrating that the probability of full-time employment at age 25 is not improved by the completion of a VET qualification. Furthermore, the impact of parenthood on the chances of employment retention is similar in the group of women with VET qualifications and those without any post-school qualifications. In contrast, the Canadian results show a positive relationship between a college/other post-school education qualification and full-time employment chances at ages 24 to 26.

In total, the results from the statistical analysis conducted for this project have re-emphasised how important insights to the functioning of educational systems can be achieved from cross-national comparisons. In this case, it appears that there are distinctive features of the Australian VET system. As compared to the Canadian college system, VET appears to have a lower level of attractiveness to students of higher academic ability and/or from families of higher socio-economic status.

These results are relevant to the design of Australian policy aimed at growth in post-school education. Specifically, the results in this report suggest that this growth may not be achievable within the VET system as it is currently comprised. Questions can be asked—on the basis of the results presented in this report—about the demand for the type of courses currently offered in the VET system. There appears to be more competition for places in the Australian university system. Based on the Canadian evidence compiled in this report, there may also be strong demand for programs similar to those offered in Canadian colleges.

The OECD (2008b) adds support to the conclusion that countries such as Australia can gain from a closer examination of Canada's college system. In line with the findings of this study, the OECD

attributes most of the high rate of participation in post-secondary education by young Canadians to the importance of colleges in their education system (OECD 2008b, pp.87–88). It describes the colleges as contributing to a system of post-school education that is ‘... more flexible and more need-oriented than in countries where universities dominate.’ Interestingly, the OECD also links the success of the Canadian education system to an absence of vocational education in secondary schools. This apparently contributes to an expanded role for the colleges, where the majority of vocational skills are delivered at what the OECD describes as a ‘relatively advanced age’. It also results in secondary schools retaining a greater focus on the provision of general skills.

Some additional features of the design of the Canadian system of post-school education may also be relevant to the results presented in this report. For example, although colleges generally provide vocationally-oriented education leading to diplomas for two and three years of study and certificates for one year of study, some colleges also provide post-secondary education for which a degree will be awarded on completion. Colleges also provide the classroom components of registered apprenticeship programs, as well as academic upgrading, pre-employment and literacy programs. Apprenticeship training is generally shared between the workplace and an educational institution, which can be a public college, private college or separate institute (CMEC 2008, pp.7–8).

The relationship between secondary education and college education—which varies between provinces—is also relevant to the importance of colleges in the system of post-school education. For example, the province of Quebec has 11 years of elementary and secondary education compared with 12 years in other provinces, with students entering the post-secondary education system at 16 or 17 years of age. As a result, students in Quebec, compared to students in other provinces, are more likely to be in college compared to no post-school study.

Related to this distinct feature of the Quebec secondary school system, Quebec also has a unique post-secondary education institution—the colleges of general and vocational education, hereafter called CEGEPs (colleges d’enseignement general et professionnel). The CEGEPs provide two types of education: a two-year program of academic education leading to university entrance; and a three-year program of vocational and technical education that generally leads to labour market entry. It should be further noted that CEGEP education is free for residents of Quebec (CMEC 2008, pp.6–7).

In some other Canadian provinces colleges also provide an intermediate step between secondary school and university. In the province of British Columbia, for example, many colleges offer one- or two-year university transfer programs, so students may initially enrol at a college but with the intention of completing a university degree at another institution.

Further research is warranted on the importance of these and other features of the Canadian system of post-school education that have relevance to the Australian environment and the policy objective of lifting levels of educational attainment. There is also scope for additional research on the possible relationship between the types of courses offered in the college system and women’s participation in this type of education. Finally, there is scope for further research on the aspects of the Australian VET system that have contributed to its success in providing post-school education that is accessible to students with relatively poor school outcomes and from families with relatively low educational resources.

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Appendix

Sample attrition and differences between the original characteristics of the LSAY95 sample and the underlying population of interest necessitated the application of weights in the analysis. A full description of the design of these weights is in Marks and Long (2000). Briefly, a post-stratification weighting schema was developed by LSAY technical staff to attempt to compensate for differential rates attrition across the waves of the survey by students with different characteristics. A variable was identified to reflect the probability of attrition for each student and to re-weight the sample to ensure the weighted sample reflected the original distribution of the variables in each year. The table below shows the weighted and unweighted frequencies in the LSAY95 sample that were used in our analysis of education choices at age 18. Comparing these frequencies reveals that the use of weights only resulted in minor changes in the sample characteristics.

Table A1 Characteristics of weighted and unweighted LSAY95 sample for analysis of post-school education at age 18

	Percent of weighted sample in 1995	Percent of weighted sample at age 18	Percent of unweighted sample at age 18
Male	48.9	48.9	47.5
Disability	2.1	2.0	1.9
Indigenous	2.7	2.3	2.1
Rural or Regional	44.6	44.8	44.9
English language spoken at home	89.6	88.4	90.4
Attended private school in 1995	32.8	31.9	35.1
State in 1995: ACT	2.0	1.9	4.2
State in 1995: Victoria	24.3	23.9	21.3
State in 1995: Queensland	18.4	19.8	18.5
State in 1995: South Australia or NT	8.4	8.2	16.7
State in 1995: Western Australia	10.6	10.4	13.9
State in 1995: Tasmania	2.9	3.0	4.0
Mother's education is other post-school	5.1	5.2	5.6
Mother's education is only high school	19.3	20.0	20.2
Mother's education is less than high school	27.8	28.0	26.8
No mother education record	31.0	30.0	29.1
Father's education is other post-school	15.3	15.8	16.0
Father's education is only high school	11.6	12.0	12.0
Father's education is less than high school	22.9	22.8	21.9
No father education record	32.5	31.4	30.4

The analysis of the post-school education choices of young Canadians in 2000 using the YITS Cohort B data was not associated with sample attrition issues, as 2000 was the first year of this survey. The sample frequencies are reported in the following table.

Table A2 Characteristics of YITS Cohort B sample for analysis of post-school education at ages 18 to 20

	Frequency	Percent of sample
Male	624 341	51.2
Disability	73 147	6.0
Indigenous	35 903	2.9
Rural or Regional	254 128	20.9
English or French language was first spoken	1 062 423	87.3
Last school was private	101 887	8.4
Last school was in Newfoundland or Labrador	24 424	2.0
Last school was in Prince Edward Island	5 950	.5
Last school was in Nova Scotia	37 824	3.1
Last school was in New Brunswick	30 390	2.5
Last school was in Quebec	300 858	24.7
Last school was in Manitoba	44 019	3.6
Last school was in Saskatchewan	42 251	3.5
Last school was in Alberta	131 573	10.8
Last school was in British Columbia	155 897	12.8
Attended to Year 12 or 13 by 2000	741 326	61.5
Mother's education is other post-school	221 369	19.8
Mother's education is only high school	477 071	42.8
Mother's education is less than high school	166 168	14.9
No mother present	49 003	4.4
Father's education is other post-school	181 249	16.1
Father's education is only high school	316 046	28.1
Father's education is less than high school	180 095	16.0
No father present	223 666	19.9
Academic achievement in last school year was in 5th to 25th percentile	214 173	18.0
Academic achievement in last school year was in 26th to 66th percentile	493 430	41.6
Academic achievement in last school year was in 67th to 93rd percentile	362 321	30.5
Academic achievement in last school year was in 93rd to 100th percentile	74 518	6.3



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