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VET experiences: What the Longitudinal Surveys of Australian Youth tell us

John Ainley, David D Curtis, Sheldon Rothman and Phillip McKenzie
Australian Council for Educational Research

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ABSTRACT

The VET sector provides several major pathways for young people from education to work and one of them is the apprenticeship. Apprenticeships combine participation in work and formal learning in an extended education and training structure that contributes to skill formation for individuals and the wider skills base. This paper uses Longitudinal Surveys of Australian Youth data to examine patterns of participation in and completion of apprenticeships. Participation in apprenticeship is a predominantly male activity associated with family backgrounds in skilled trades, realistic vocational interests and below average school achievement. Vocational interests developed by middle secondary school are associated with higher participation levels in traditional apprenticeships. Apprenticeship is more common amongst those who have studied vocational subjects in secondary school or who do not complete Year 12. Overall completion rates are approximately 80% with variations across fields of training.

1. Introduction

Australian Apprenticeships comprise both apprenticeships and traineeships. They combine practical work with structured training and lead to nationally recognised qualifications. In this paper, the focus is on those young people who pursue traditional apprenticeships. Although there is a growing body of research concerned with apprenticeships relatively little of this research uses longitudinal data from nationally representative samples of young people. There is a lack of knowledge about the factors that influence young people to enter an apprenticeship and affect their progress through an apprenticeship.

This paper uses data from the Longitudinal Surveys of Australian Youth (LSAY) to focus on two broad questions:

- What are the characteristics of young people who commence an apprenticeship, overall and in different fields?

- What are the points of entry to apprenticeships and what are the patterns of progress through apprenticeship?

2. Background

2.1 Recent history

In the early 1990s the number of apprenticeship commencements declined and there were questions about the capacity of this traditional mode of training to provide the appropriate skills for a modern economy that was based on a wider range of emerging jobs. Traineeships had been introduced in the mid-1980s to provide entry level training in a wider range of fields and formats (Kirby, 1985) but had not become established as an equivalent form of workplace-based training (Smart, 2001). The apprenticeship system in Australia underwent changes that resulted in the inclusion of traineeships with traditional apprenticeships to form New Apprenticeships (Ray, 2001) and most recently Australian Apprenticeships.

Because this paper is based on data from young people who were in Year 9 in 1995 whose entries to apprenticeship pre-dated the introduction of New Apprenticeships, this paper focuses on traditional apprenticeships. Apprenticeships have long been a numerically important part of the education and training system in Australia. Long, Carpenter and Hayden (1999) estimate that 23 per cent of males and 7 per cent of females born in 1975 had participated in an apprenticeship by the time they had reached 19 years of age. There has been little change in the numbers participating in traditional apprenticeships over the past decade (Ball & John, 2005).

2.2 Perceived benefits

Combining work, education and training in a structured manner is seen to have benefits for the community and for individuals. In terms of community benefits traditional apprenticeships have long been central to the training and skill formation process in Australia. In 1977 the OECD observed that the apprenticeship system had served Australia well and should not be lightly discarded (OECD, 1977). Raffe (2003) argued that apprenticeships provide skill formation through linking theoretical and applied learning, fostering links between training and practice, socialising young people into the workplace and acquiring an occupational identity. In many countries apprenticeships appear to result in higher levels of employment (Raffe, 2003). Learning and skill formation through apprenticeships envisage the work place, as well as the educational institution, as a place of learning (Harris, Simons, Willis & Carden, 2003). Harris et al (2003) argued that an important aspect of developing as a tradesperson was the capacity to integrate and synthesise the different messages from on-site and off-site environments. Other studies have shown that there is considerable variation in the extent to which this is realised (Billett, 1996).

2.3 Apprentice characteristics

Research from some time ago suggests that young men entering apprenticeships had relatively higher performance in numeracy and relatively poorer performance in literacy compared with their age cohort (Ainley & Clancy, 1983). A preponderance of these entrants came from the families of skilled tradespeople. Possibly, the experience of growing up in a home environment generates an interest in trades-related activities, or parents who are themselves working in skilled trades are able to provide contacts with potential employers (Ainley, Elsworth & Fullarton, 2001). Similar, perspectives have emerged from other studies (Ball & Lamb, 2001; Long, Carpenter & Hayden, 1999). Ball and Lamb (2001) reported that a trade course was a common destination for males who left school before completing Year 12, and that the profile of participants in trades courses tended to be evenly distributed across socioeconomic groups.

2.4 Progress through apprenticeship

Several research studies show that withdrawal from apprenticeship tends to occur most frequently in the first year of training (Cully & Curtain, 2001; Harris et al., 2001; Lamb et al., 1998). Bender (2003) suggested training courses with high completion rates were more likely to be full-time, in trades and with government employers. Cully and Curtain (2001) also found that non-completions were higher among trainees than among apprentices and that non-completion was frequently associated with workplace issues.

2.5 Apprenticeship outcomes

In Australia, the *Student Outcomes Survey* conducted of TAFE graduates from 2002 showed that 86 per cent of apprentices undertook a qualification at AQF level III or higher (NCVER, 2003: 14). Moreover, following course completion, 65 per cent of apprenticeship graduates were employed with the same employer and only eight per cent were unemployed. Previous analyses of data from LSAY have also indicated that those young people who had completed an apprenticeship had substantially lower rates of unemployment than other young people (Marks & Fleming, 1998; Marks, Hillman & Beavis, 2003: McMillan & Marks, 2003).

3. Methods

3.1 Data

Data from the LSAY cohort of 13,600 young people who were in Year 9 in 1995 formed the basis of this investigation. [1] These young people were sampled from approximately 300 Australian secondary schools representative of state, sector and location. In the data to 2001, 790 individuals (11.5%) had participated in an apprenticeship of the 6,876 people who had remained active in the survey[2]. In the first year of the survey, participants completed two achievement tests, one in reading comprehension and one in mathematics, and a questionnaire on family background, school and work aspirations and attitudes toward school. In the following year cohort members completed a mailed questionnaire through which they provided information on school, work, post-school plans and, if they had already left school, post-school activities. From the third year onwards, cohort members were contacted by telephone annually. During these interviews, cohort members provided information on work, study, attitudes, aspirations, relationships, living situations and other activities. These data were used to determine who participated in an apprenticeship and some other aspects of the course of training that was undertaken. Further details are provided in Ainley and Corrigan (2005).

3.2 Variables

For most of the analyses in this paper the dependent variables concerned participation in an apprenticeship or persistence in the apprenticeship. In addition to variables that reflected socio-demographic and educational characteristics variables specifically related to apprenticeship participation and persistence were constructed.

Field of training: A classification of field of training was constructed from respondents' indications of the field in which they were studying and supplemented by information about the field in which they were working. Apprentices were classified into different fields of training: electronics, engineering and automotive, building, agriculture, food and hospitality and hairdressing.

Commencement and progress: LSAY data indicated the years of schooling attained prior to commencing the training, the time that had elapsed between leaving school and commencing training

[1] Rothman and McKenzie (2006) canvass the benefits and limitations of using longitudinal data for studying young people's transitions from school to work.
[2] Sample data were weighted to compensate for differential attrition from the survey.

and status over successive years. The data were also used to determine apprenticeship status in each year after commencing the survey.

3.3 Analysis

Analyses were conducted to generate descriptive statistics and measures of association between apprenticeship participation and characteristics of young people and their schools. In addition a logistic regression analysis was conducted to explore influences on participation in apprenticeships. This form of analysis is the appropriate analysis to provide an indication of net influences on an outcome that is dichotomous. There was an analysis of entry points overall and for each field of training. Longitudinal data were then analysed to examine status in the course of training at the latest point possible and relate that status to various entry characteristics.

4. Results

4.1 Characteristics of Apprentices

Participation was defined as ever having been engaged in an apprenticeship. The background characteristics by training status for the Y95 cohort are provided in Table 1.

Table 1 Selected Personal, Social and Educational Characteristics of Apprentices from the Y95 LSAY cohort

	Percentage in group	
Defined group	Apprentice	Full cohort
Sex		
Male	84	49
Female	16	51
Father's Occupation		
Professional/managerial	31	41
Sales/clerical/service	11	13
Skilled trade	36	23
Semi or unskilled	21	23
Father's Education		
Higher Education	16	26
Trade/Technical	33	23
Complete secondary	15	17
Not complete secondary	36	33
Home language background		
English	97	89
Language other than English	3	11
Location in Year 9		
Metropolitan	46	55
Regional	29	24
Rural and Remote	25	21
School sector		
Government	77	68
Catholic	16	20
Independent	6	12
Year 9 achievement reading		
Highest (>1 sd above mean)	5	11
High (> mean)	31	41
Low (< mean)	25	24
Lowest (>1 sd below mean)	39	24
Year 9 achievement (maths)		
Highest (>1 sd above mean)	8	14
High (> mean)	22	25
Low (< mean)	44	39
Lowest (>1 sd below mean)	26	23
Year 12 Completion		
Yes	51	81
No	49	19
Numbers	790	6876

Note: Those participants who had undertaken both an apprenticeship and a traineeship, have, for the purposes of this table, been classified as apprentices.

Personal and social background: Table 1 indicates that apprentices were less likely to be from families where the parents were in professional and managerial occupations, or who had completed a higher education qualification, than other young people in the cohort. They were less likely to come from language backgrounds other than English than were other young people and they were more likely to

come from non-metropolitan locations. There was an overwhelming majority of males among apprentices and apprentices were more likely to have a father who was a tradesman, or who had a technical education background.

Educational background: There were differences in educational background between apprentices and other young people. Apprentices were more likely to come from a government school and less likely to have attended non-government school, than the remainder of the cohort. The average reading and mathematics scores achieved by apprentices when they were in Year 9 at school were below the average scores of the remainder of the cohort. This is reflected in the distribution across the achievement categories. Participation in apprenticeships was higher among those who left school before Year 12 compared with those who had continued to Year 12.

Fullarton (2001) has highlighted the importance of Vocational Education and Training (VET) in Schools programs in retaining students at school and providing pathways between education and employment. Table 2 indicates that those students who entered apprenticeships were more likely than those who did not to have undertaken VET studies in Year 11 or 12. Approximately 37 per cent of all traditional apprentices who had continued at school to Year 12 had included a VET subject in their Year 12 course. In comparison only 21 per cent of non-apprentices from Year 12 had studied a VET subject.

Table 2 Percentages of Students from Year 9 in 1995 who had Completed Year 12 by VET Subjects at School and Apprenticeship Status

	Apprentice	Not Apprentice
VET subject	37	21
No VET Subject	63	79
Total	100	100

Vocational Interests: Vocational interests were represented by a set of six variables based on data gathered from students in the Y95 cohort when they were in Year 10. Respondents indicated how they felt about a range of 18 different activities. For each activity they indicated whether it was an activity which they "like very much", "like somewhat", "dislike somewhat", or "dislike very much". The activities were chosen to represent the six major interest fields elaborated in Holland's (1985) theory of vocational choice. Scores for each interest domain were obtained by combining the responses to the three items. The data in Table 3 show that apprentices had higher realistic interests than did the cohort as a whole, and lower conventional, artistic and social interests.

Table 3 Vocational Interest Scale Scores for Apprentices in the Y95 Cohort

	Apprentices		Full Cohort	
	Mean	SD	Mean	SD
Realistic Interest	**3.41**	0.68	**2.78**	0.85
Conventional Interest	2.19	0.78	2.57	0.80
Investigative Interest	2.24	0.68	2.49	0.71
Enterprising Interest	2.52	0.63	2.72	0.63
Artistic Interests	2.67	0.64	2.78	0.67
Social Interests	**2.86**	0.63	**3.16**	0.62
Average number	613		5735	

Note: Scale scores have a possible range from 1 (low interest) to 4 (high interest) and are based on the average of three items in each scale.

Field of Training: A classification of field of training was constructed from respondents' indications of the field in which they were studying and supplemented by information about the field in which they were working. Apprentices were classified into eight different fields of training: electronics,

engineering and automotive, building, agriculture, food and hospitality, hairdressing, community services and health and business. Table 4 displays the distribution of apprenticeships across fields of training. Apprentices were largely in the fields of building, automotive and engineering and electrical and electronics. These three broad fields involved 71 per cent of apprentices.

Table 4 Distribution of Apprentices by Field of Training for Y95 Cohort

Field of training	N	%
Electrical and electronics	111	14.2
Automotive and other engineering/technology	207	26.4
Building trades including carpentry and plumbing	238	30.4
Food and hospitality	112	14.2
Hairdressing	68	8.7
Animal husbandry, land and marine	30	3.8
Business and Services	10	1.3
Health, community services	4	0.5
Other	5	0.6
Total	785	100

Note: Respondents for whom the field of training was missing have not been included in the table

Multivariate Analysis of Influences on Participation in Apprenticeships

A multivariate analysis of influences on participation in apprenticeship was conducted by entering three blocks (or sets) of variables in sequence. The first block included the background characteristics of the individuals before they began school. The second block consisted of acquired characteristics, such as achievement in literacy or numeracy and vocational interests, or the type of course undertaken at school. The third block consisted of characteristics of the school that an individual attended. Of course, at the third and final stage of the process, the result is the same as if all variables had been analysed simultaneously. However, the block-wise process provides additional information. Firstly, the results at each stage indicate how much the model is improved by including additional blocks of variables.[3] For example, it can be inferred whether acquired characteristics and school experiences improve the model over that which included student background alone. Secondly, it is possible to examine changes in the regression coefficients as additional blocks are added and thus infer the extent to which the observed effects are direct or transmitted.

Groups of influences

The investigation considered these influences in three blocks or sets.

- The first block included individual background influences such as family socioeconomic status (as measured on the ANU3 scale), language spoken at home, home location while the person was at school, sex and whether the person's father was a tradesman or had trade qualifications.
- The second block included three variables: achievement in literacy and numeracy in Year 9, vocational interests, and the individual's school curriculum experience. Achievement in literacy and numeracy was based on tests administered in Year 9.[4] Vocational interest was a composite variable made up of the combination of vocational interest scores most strongly associated with

[3] In logistic regression it is not possible to compute in a straightforward manner the percentage of variance explained at each step of the analysis because the dependent variable is dichotomous (Menard 2002, pp. 17-41). For that reason, the results include an estimate of the variance explained for each stage of the regression as well as other indicators of fit. The estimate is based on an ordinary HLM analysis using a dichotomous outcome variable.

[4] The Rasch-based scores for literacy and numeracy were highly reliable and the correlation coefficient between them was 0.54.

participation in an apprenticeship: mainly the level of interest in realistic activities. Curriculum experience reflected the experience of schooling of the individual and was represented as a set of two dummy variables. The first reflected whether the student had completed Year 12 with VET in Schools subjects in either Year 11 or 12, and the second reflected whether the student had completed Year 12 without having studied any VET subjects in school. The reference category was having left school before Year 12.

- The third block of variables included characteristics of the school attended. It included an indication of whether the school attended was a government, Catholic or independent school (represented as a set of two dummy variables). It also included variables characterising other features of the school attended: the average socioeconomic level of the school, the percentage of students completing Year 12, the percentage of students studying a VET in Schools subject, the average score on an attitudes to school scale, and the percentage of Year 12 enrolments in technology studies.

Results

The first part of the analysis involved an examination of the percentage of the overall variance in apprenticeship participation that was due to variation between individuals and the percentage that was due to variation between schools. In fact only 3.5 per cent of the total variance was attributable to differences between schools.[5] Thus, overwhelmingly the variance in participation in apprenticeship was associated with individuals.

More detailed results of the analysis for apprenticeship participation are recorded in Table 5. Those results refer to three models. The first includes only background characteristics, the second refers to background characteristics plus acquired characteristics and the type of school program, and the third includes background characteristics plus acquired characteristics and the school program undertaken and school characteristics. For each of the three models the estimated variance explained is shown.

For each of the models, the data show the regression coefficient, its standard error, and the exponent of the regression coefficient. Where the effect is statistically significant at the .05 level the coefficient and its associated statistics are shown in bold. A positive coefficient means that the factor increases the chances of being an apprentice. The exponent of the regression coefficient indicates the odds ratio for influence of the factor on participation in apprenticeship. For example (in Model 1) those who had a father who was a tradesman had almost twice the chance of participating in an apprenticeship (compared to not participating in an apprenticeship) than those who did not have a father who was tradesman, other things equal.

The results for Model 1 indicate a strong effect of sex (males are almost nine times as likely to be apprentices as females) and of being of an English-speaking background (those of an English-speaking background were four times as likely to be an apprentice as those who did not speak English at home). Those students whose father was a tradesperson were almost twice as likely to be an apprentice as other students. There is also an effect on apprenticeship participation of family socioeconomic status, with an increase of one standard deviation on this variable being associated with a drop of 20 per cent in the chances of being an apprentice. Students from rural and remote locations were twice as likely to be apprentices as their peers from metropolitan locations; there was a smaller effect for those from provincial locations. Just over 9 per cent of the variance in apprenticeship participation is explained by these individual background characteristics.

[5] The extent of variation can also be seen in the descriptive statistics for the distribution of apprentices. In 20 per cent of the schools no students became apprentices, and in just over 20 per cent of schools 3 or more students became apprentices. For the majority (60 per cent) of schools 1 or 2 students entered an apprenticeship.

Table 5 Results of logistic regression analyses for participation in apprenticeship among 1995 Year 9 LSAY cohort members

	Model 1			Model 2			Model 3		
Independent variable	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Socioeconomic status	**-.19**	**0.05**	**0.83**	-0.02	0.06	0.98	0.06	0.07	1.06
Sex (male cf female)	**2.18**	**0.12**	**8.87**	**1.27**	**0.17**	**3.55**	**1.19**	**0.17**	**3.29**
Home language (other cf English)	**-1.40**	**0.26**	**0.25**	**-1.33**	**0.32**	**0.26**	**-1.43**	**0.32**	**0.24**
Location									
Provincial (cf metropolitan)	**0.25**	**0.10**	**1.29**	0.18	0.12	1.20	0.13	0.12	1.14
Rural or remote (cf metropolitan)	**0.69**	**0.17**	**2.00**	0.42	0.25	1.52	0.36	0.22	1.43
Father in skilled trades	**0.64**	**0.11**	**1.90**	**0.48**	**0.14**	**1.61**	**0.46**	**0.14**	**1.58**
Father trade qualification	0.08	0.11	1.08	0.18	0.14	1.19	0.18	0.14	1.19
Reading achievement				**-0.22**	**0.07**	**0.80**	**-0.21**	**0.07**	**0.81**
Mathematics achievement				-0.09	0.07	0.92	-0.05	0.07	0.95
Trade related vocational interests				**0.75**	**0.08**	**2.11**	**0.76**	**0.08**	**2.14**
Type of school course									
Year 12 with VETIS (cf no Yr 12)				**-0.82**	**0.16**	**0.44**	**-0.82**	**0.17**	**0.44**
Year 12 no VETIS (cf no Yr 12)				**-1.33**	**0.16**	**0.26**	**-1.33**	**0.16**	**0.26**
School sector									
Catholic school (cf govt.)							0.15	0.14	1.16
Independent school (cf govt.)							0.02	0.19	1.02
School mean SES							**-0.27**	**0.10**	**0.76**
School mean % VETIS							-0.93	0.49	0.39
School mean % year 12							-0.11	0.55	0.89
School mean attitudes to education							0.04	0.07	0.96
School % technology enrolments							**1.86**	**0.46**	**6.41**
Constant	-6.07	0.24	0.00	-4.03	0.31	0.02	-3.92	0.32	0.02
Estimated % variance explained		**9.3**			**22.7**			**25.7**	

Note: Statistics shown are:
B the unstandardised regression coefficient
S.E. the standard error of the regression coefficient
Exp (B) the odds ratio that indicates the magnitude of the effect.
Figures in bold indicate the regression coefficient is statistically significant at the five per cent level.

Including acquired characteristics and the experience of senior secondary schooling, as reported in Model 2, increases the estimated variance explained to almost 23 per cent. There is an association between earlier school achievement and apprenticeship participation. For reading achievement, but not mathematics achievement, there is a negative association with participation in an apprenticeship. A difference of one standard deviation in reading achievement is associated with a 20 per cent lower chance of being an apprentice. Vocational interests are also important as an influence on apprenticeship participation. Those whose trade-related interests score is one standard deviation higher than their peers' are twice as likely to be an apprentice, other things equal. A second observation from the results of the analysis of Model 2 is that the effects of family socioeconomic status become smaller and non-significant. This is because family socioeconomic status is associated with taking Year 12 without VET in Schools which is more strongly but negatively associated with apprenticeship participation than is socioeconomic status. For similar reasons, the influence of location becomes non-significant when the type of senior school program is included.

Model 3 includes school characteristics as well as background characteristics, acquired characteristics and the senior school program experienced. Including the set of school characteristics adds only 3 per cent to the variance explained. This increment is relatively small because there is little between-school

variance to explain. In fact, the school characteristics in the model account for a substantial percentage (approximately 80%) of the variance between schools that does exist. Of the school characteristics that account for the differences among schools, the most influential is the percentage of senior school enrolments in technology subjects. Other things equal, a student at a school with a 13 percentage point higher level of enrolments in technology subjects is six times as likely to participate in an apprenticeship. The results for the analysis of Model 3 also show that schools serving populations of lower average socioeconomic status have higher levels of apprenticeship participation.[6]

Interpretation

The significant individual background influences on apprenticeship participation are sex, home language, and having a father as a tradesman. After allowing for the effects of all other factors in the full model, males are more than three times as likely as females to be apprentices, those of an English speaking background are four times as likely as other students to be apprentices and those whose father is a tradesman are nearly 60 per cent more likely than other young people to be an apprentice. It can be noted that the difference between males and females in apprenticeship participation is reduced when the vocational interest measure is included in the analysis. In other words, differing interests explain a large part but not all of the differences between males and females in apprenticeship participation. When girls have similar interests to boys, they are still less likely to enter into an apprenticeship. In a similar way, the results show that the influence of having a father who is a tradesman is reduced when differences in vocational interests are included in the analysis. In other words part but not all of the influence of having a father who is a tradesman arises from differences in vocational interests.

Acquired characteristics also influence apprenticeship participation. Apprenticeship participation is associated with stronger trade-related vocational interests (a one standard deviation increase in trade related interests is associated with a person being more than twice as likely to be an apprentice) and lower levels of reading achievement (a one standard deviation lower score in reading is associated with a person being 25 per cent more likely to be an apprentice). There is an influence of the type of senior school program undertaken on apprenticeship uptake. Participation in apprenticeship is more likely among those who leave school before reaching Year 12 than among those who continue to Year 12. Furthermore, participation in an apprenticeship is more likely among those who include one or more VET in Schools subjects in their program than among those who do not.

Among the school characteristics that influence apprenticeship participation, the largest effect is of the percentage of Year 12 enrolments in technology subjects. This indicator represents a general orientation of the senior school curriculum. That this effect is evident, after making allowance for a range of individual and other school influences, suggests that the type of curriculum does influence the uptake of apprenticeships. There is also an effect of average socioeconomic status for the school: students who enter an apprenticeship are more likely to have attended a school with a lower average socioeconomic status than those who chose not to enter an apprenticeship.

4.2 Progress through Apprenticeships

Progress and school attainment: Table 6 shows that the majority of those from the Y95 cohort who entered a traditional apprenticeship had completed their apprenticeship by 2003. Overall, one in six

[6] It should be noted that if the analysis is conducted without including average socioeconomic status an effect for school sector is observed. However, the effect is weaker than that of average socioeconomic status and is not significant in the analysis of the full model shown in Table 6. A possible interpretation is that government schools serving populations of high socioeconomic status do not have many of their graduates entering apprenticeships. Similarly the percentage of enrolments in VET in schools subjects has a weaker influence on apprenticeship participation than the percentage of enrolments in technology subjects and therefore is not significant in the analysis of model 3 as reported in Table 6.

(16.5%) apprentices had discontinued and one in ten (9.9%) were continuing with their apprenticeship. Almost three quarters (73.7%) had completed their apprenticeship by 2003.

Table 6 Progress Status of Apprentices to 2003 by School Completion for the LSAY Y95 Cohort

Progress Category in 2003	Percentage in Progress Category		
	Year 12 Completion Status		Total
	Yes	No	
Ongoing	18.9	2.4	9.9
Finished	67.8	78.5	73.7
Discontinued	13.4	19.1	16.5
Total	100	100	100
Number	303	382	685

Among those who had left school before Year 12, nearly four fifths (78.5%) had finished their apprenticeship and just under one fifth (19.1%) had discontinued. A very small percentage (2.4%) was still continuing, possibly because they did not commence direct from school. Among those who had attained Year 12 at school a little more than two thirds (67.8%) had completed their apprenticeship, a little fewer than one in eight had discontinued (13.4%) and just under one fifth (18.9%) were continuing. The projected completion rate for apprentices overall is 81 per cent and there is almost no difference between those who had completed Year 12 and those who had not completed Year 12.

Progress and Field of Training: To examine progress by field of study the categories completed and ongoing were combined to represent successful progress. This was contrasted with those who had discontinued because they had withdrawn or had their Apprenticeship cancelled. Overall there is little difference in non-completion rates between apprentices and trainees. Successful progress appeared to vary by field of training. Table 7 shows that, among apprentices, Hairdressing and Food and Hospitality had the highest percentage of students not having persisted with their course. Automotive and Building had the lowest rate of non-continuance.

Table 7 Progress Status to 2003 of Apprenticeships by Field of Training for the LSAY Y95 Cohort

	% of commencement		
	Finished / Ongoing	Not Continuing	N
Electrical	84	16	111
Automotive & engineering	93	7	207
Building & construction	91	8	239
Food & hospitality	76	24	110
Hairdressing	67	32	69
Agriculture & horticulture	83	16	30
Total	85	15	784

Note: A number of fields have been excluded because of small numbers. In addition there were cases for which a field could not be assigned.

Destinations of those who discontinue: In this section attention is focussed on the educational and occupational destinations of those who discontinued a traditional apprenticeship[7]. Approximately one in six (16 per cent) of those who discontinued an apprenticeship proceeded to another course of study.

[7] There were approximately 105 cases.

For half of these (i.e. 8 per cent overall) this was a certificate in VET or TAFE. Just a few (2 per cent overall) studied for a TAFE diploma and some (6 per cent overall) transferred to study for a bachelor degree at a university.

Significantly more individuals who had discontinued an apprenticeship were not participating in the workforce compared with those who had completed their apprenticeship. While not all those who had completed their apprenticeship were still working in the industry in which they qualified or using the trade they learnt, they were still more likely to be employed than those who had discontinued their apprenticeship before completion. The employment outcomes for those who discontinued an apprenticeship were less satisfactory than for those who had completed an apprenticeship. Ninety five per cent of those who had completed an apprenticeship were employed in 2003 compared to 84 per cent of those who had discontinued their apprenticeship.

There was also some evidence that those who had completed an apprenticeship were able to manage their financial lives more satisfactorily than those who had discontinued. Twenty-three per cent of those who had discontinued indicated that it was “fairly” or “very” difficult to manage financially in a typical month compared to just 11 per cent of those who had completed an apprenticeship.

Characteristics of Apprenticeship Discontinuations: Multivariate analysis was used to investigate the influence of various factors on non-completion of an apprenticeship and traineeship. The analysis focused on those who had been an apprentice at some stage up to 2003. The outcome was whether the apprentice had discontinued the apprentice or not. This form of analysis provided an indication of the net effect a range of potential influences on discontinuation. Logistic regression was used because the outcome (or dependent) variable was dichotomous. For the analyses all continuous independent variables were standardised but all binary variables remained as categorical variables. The model for the multivariate analysis of influences on discontinuation was similar to that used in the analysis of participation in apprenticeship.

The results showed that almost none of the background factors had a statistically significant influence on discontinuation. Partly this is because the numbers of those who discontinue in the sample is small and partly it is because the effects are small in magnitude. There is a tendency for females to discontinue to a greater extent than males but the effect only reaches significance in one of the models. There is a moderate effect size for language background but it not statistically significant because the numbers of apprentices with a language background other than English is small.

The conclusion from these analyses is that the background characteristics of apprentices (including both home background and educational background) have little influence on their propensity to complete an apprenticeship. Based on the self reports of reasons for discontinuing an apprenticeship it would appear that non-completion of an apprenticeship is more likely to be associated with changing (or more clearly focussed) interests, personal factors or aspects of the working environment.

5. Conclusions

Apprenticeships are important in terms of the pathways they provide from school education to working life and in terms of skill formation on which to base future occupational development. Participation patterns in Apprenticeship differ from participation patterns in other programs of education and training possibly because they require the participant to secure a job as well as a place in a course of study.

Participation in traditional apprenticeships followed some distinctive patterns that reflected the influence of home environments, the development of interests, the curriculum they followed, and the orientation of the school they attended. One aspect of the home environment that was influential was having a father who was a tradesman. Young people whose fathers worked in skilled trades were almost twice as likely as others to participate in a traditional apprenticeship. Similarly, the development of trade-related vocational interests influenced the uptake of a traditional apprenticeship

with a difference of one standard deviation in trade-related interests being associated with a doubling of the chances of participating in a traditional apprenticeship.

There were aspects of an individual's school experience that influenced participation in a traditional apprenticeship. Firstly, participation was highest among those who left school before Year 12 (29 per cent of early school leavers were apprentices compared to 6 per cent of school completers). Secondly, among those who had completed Year 12, participation in apprenticeship was higher among those whose senior school studies included at least one VET in Schools subject. Thirdly, among those who attended a school with a strong level of enrolments in technology subjects (and to a smaller extent VET subjects) in the senior secondary years there was an increased likelihood of participation in an apprenticeship (other things equal).

6. Implications

From these results several policy-related inferences can be drawn. The first inference is that a growth of numbers in apprenticeships is potentially likely to be from amongst those who proceed through school to Year 12 because only a small percentage of those young people who take up an apprenticeship. The second inference is that participation in apprenticeship will be facilitated by fostering, through experience and advice, interests in activities related to those fields. The evidence for this comes from the association between apprenticeship and both trade-related interests and having a father who is a trades person. Attention to the curriculum and experiences in the compulsory years of school might be an appropriate starting point to develop a stronger base for entry into apprenticeship, along with a consideration of the careers advice that young people receive. The third inference is that what is available in the senior school curriculum has an important influence on participation in apprenticeships by those who stay at school to Year 12. This operates at two levels. The first level is that individuals who include VET subjects in their Year 12 course are more likely to enter an apprenticeship than those who do not. The second level is the school curriculum orientation in that coming from a school with a strong level of enrolments in technology subjects in the senior secondary years is associated with an increased likelihood of participation in an apprenticeship.

On the basis of the longitudinal data on progression it was possible to estimate projected completion rates for Apprenticeships. Overall, completions rates would appear to be approximately 83 per cent. Of course there are variations across fields of training with lower completion rates in the food and hospitality industries and in hairdressing. These completion rates compare favourably with corresponding measures for other forms of post-compulsory education and training. The inference from these data is that there is not a lot of scope for improved completion rates resulting in stronger output of skilled workers from this source.

In addition, the analyses in this report suggest that non-completion of an apprenticeship is mainly associated with changed interests, personal factors or lack of satisfaction with conditions in the workplace. There is almost no discernable influence of background characteristics on persistence with an apprenticeship.

There is an emerging emphasis on post-compulsory education and training directed to perceived shortage of skilled personnel in industries served by the Australian Apprenticeship systems. Meeting the requirements for skilled labour will depend on an understanding of the factors associated with enhanced participation in the forms of training available as well as supporting the development of effective practices within those forms of training.

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