Trainee and apprentice retention and attrition in Australia

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INTRODUCTION

This paper presents preliminary results for the NREC funded project The Australian Apprenticeship and Traineeship System: factors that contribute to retention and completion rates for apprentices and trainees.

The purpose of the study is to examine the range of factors that contribute to high retention rates and successful completion of apprenticeships and traineeships. The outcome of the study will therefore be an understanding of how a range of personal, demographic, structural, economic, educational, political and environmental factors contribute to the observed retention and completion rates across a number of occupations where a variety of learning pathways are used.

The key research questions of the study fall into five categories:

- the nature of cancellations and withdrawals
- the nature of the factors that contribute to successful completion
- patterns of retention rates between various clients groups and the factors underpinning these patterns
- those factors most amenable to bringing about increases in completion rates and improved retention rates
- the implications of the research.

The project team are using both qualitative and quantitative methods to collect and analyse data. The initial phase involves an analysis of existing trainee and apprentice data to identify factors that positively or negatively contribute to the retention and completion of traineeships and apprenticeships in Australia. The second phase of the research will involve interviews with a variety of stakeholders (eg, trainees and apprentices, employers, state training authorities) to elicit further information and to examine factors underpinning the identified patterns.

This paper presents the findings from the first part of the data analysis and looks at the nature of cancellations and withdrawals. It is based on data from the trainee and apprentice collection for the period 1995 to 1998, as supplied by NCVER.

Notes on the data

- 1. The way in which the data has been collected (up to this point) does not allow for easy separation of traineeships and apprenticeships.
- Contract status categories are those as supplied by NCVER and therefore use the standard definitions contained in NCVER publications.

OVERVIEW OF WITHDRAWALS, CANCELLATIONS, EXPIRIES AND SUSPENSIONS

83.7% of withdrawals occur within the first 12 months, with 73.7% occurring in the first six months and 57.3% occurring in the first three months. (Withdrawals occur during the probationary period.) Interestingly, 12.3% of all withdrawals in NSW occur after the first year.

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65.5% of cancellations occur within the first 12 months, with 36.0% occurring in the first six months. (Cancellations occur after the probationary period).

52.9% of expiries occur within the first 12 months (mainly at the end of the first year).

46.1% of suspensions occur during the first 12 months, with 28.7% in the second year and 17.4% in the third year. This classification is predominantly used in WA and SA.

THE NON-COMPLETION FACTOR (NCF)

One issue with the trainee and apprentice data collection is the difficulty of linking one year to the next. Consequently, a "slice in time" approach can be a useful way of determining the relative tendencies between groups. The problem with this approach is that it does not really take into account the number of trainees and apprentices "in training" at the commencement or at the end of the period, nor does it take into account changing numbers of trainees and apprentices. It also does not take into account trainees and apprentices who may have suspended and recommenced during the period.

Assuming a given period of time, however, the number of "starts", "terminations" and "non-completing terminations" can be determined. Their definitions are as follows:

Starts = commencements + recommencements

Terminations = withdrawals + completions + expiries + cancellations + suspensions

Non-completing terminations = terminations - completions

Because of the different proportion of trainees and apprentices which may be "in training" in different groups, it is useful to take the ratio of non-completing terminations to completions as a measure of the likelihood of a member of a particular group completing or not completing their contract of training.

We therefore have the non-completion factor (NCF), which is defined as:

NCF = non-completing terminations ÷ completions.

An NCF of 1 would therefore indicate that members of the group in question would be as likely to withdraw / expire / cancel / suspend as they would be to successfully complete their contract of training. An NCF of more than 1 would indicate that members of the group are more likely to withdraw / expire / cancel / suspend than they are to successfully complete their contract of training.

FACTORS AFFECTING COMPLETION OF CONTRACTS OF TRAINING

Location

Table 1 shows the variations in contract status according to the state in which apprentices and trainees are contracted.

The results indicate that apprentices and trainees in the Northern Territory have the highest non-completion factor, which means that they are more likely to terminate their contract of training by withdrawal / expiry / cancellation / suspension.

NSW and the NT have higher than average proportions of withdrawals and the ACT has no withdrawals at all during the period 1995-1998.

The ACT, NT, Victoria, Queensland and South Australia all have higher than average proportions of cancellations.

South Australia and Victoria have higher than average proportions of expiries.

South Australia and Western Australia have higher than average proportions of suspensions.

The above results could indicate some differences in administrative procedures between the states / territories.

The above results show that, clearly, there are variations in the way different states / territories use the contract status categories.

Table 1: Variations in contract status by location

Contract Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Australia		
Commenced	105055	104436	111278	37222	35602	14678	7568	5814	421653		
Recommenced	14710	11819	7699	2286	1307	378	563	304	39066		
Total Started	119765	116255	118977	39508	36909	15056	8131	6118	460719		
Terminations as a percentage of "starts"											
Withdrawn	21.26%	3.63%	7.06%	3.16%	6.33%	3.92%	0.00%	14.43%	9.36%		
Completed	42.14%	33.29%	33.86%	30.88%	45.40%	47.06%	44.41%	34.59%	37.16%		
Expired	2.66%	7.48%	4.10%	2.09%	7.91%	1.90%	4.39%	0.15%	4.59%		
Cancelled	19.09%	31.05%	27.02%	18.63%	25.29%	15.85%	33.97%	31.64%	24.94%		
Suspended	0.02%	0.05%	0.00%	3.78%	7.38%	0.00%	0.09%	0.65%	0.94%		
Total terminated	85.17%	75.50%	72.05%	58.54%	92.30%	68.74%	82.86%	81.46%	77.00%		
Total not	43.03%	42.21%	38.19%	27.65%	46.90%	21.67%	38.45%	46.88%	39.84%		
completed											
Non-completion	1.02	1.27	1.13	0.90	1.03	0.46	0.87	1.36	1.07		
factor											

Gender

Table 2 shows the variations in contract status according to gender. The results indicate that females are slightly more likely to terminate their contract of training without completing.

Table 2: Variations in contract status by gender

Contract Status	Males	Females	Total						
Commenced	269231	152422	421653						
Recommenced	28353	10713	39066						
Total Started	297584	163135	460719						
Terminations as a percentage of "starts"									
Withdrawn	9.1%	9.8%	9.4%						
Completed	39.4%	33.0%	37.2%						
Expired	4.7%	4.5%	4.6%						
Cancelled	26.1%	22.9%	24.9%						
Suspended	1.1%	0.7%	0.9%						
Total terminated	80.37%	70.86%	77.00%						
Total not completed	40.93%	37.84%	39.84%						
Non-completion factor	1.04	1.15	1.07						

Age

Table 3 shows the variations in contract status according to age. The results contained in the table are difficult to analyse because of the issue of time. For example, the table shows a very high non-completion factor for 15 year old trainees and apprentices. This is most likely due to the fact that someone commencing at 15 years old will be aged 16 to 19 years when they terminate their contract of training. This fact would (at least partly) account for the trend of a decreasing non-completion factor for trainees and apprentices aged 15 to 19 years and the relatively high completion rate of trainees and apprentices in the 20 to 24 years age group. Consequently, variation in completion rates due to age will require further work based on the duration of the contract of training.

Table 3: Variations in contract status by age

Contract Status	14 or less	15	16	17	18	19	20 to 24	25 to 29	30 to 39	40 and over	Total	
Commenced	247	5284	28511	49469	70678	53404	101241	37173	39206	36440	421653	
Recommenced	2	62	585	2156	4587	6802	21486	2151	932	303	39066	
Total Started	249	5346	29096	51625	75265	60206	122727	39324	40138	36743	460719	
Terminations as a percentage of "starts"												
Withdrawn	3.6%	5.9%	6.7%	8.7%	8.8%	10.8%	11.5%	8.8%	7.8%	6.9%	9.4%	
Completed	0.0%	0.2%	1.6%	6.1%	9.2%	27.6%	88.4%	39.9%	27.3%	24.1%	37.2%	
Expired	0.0%	0.1%	0.4%	0.8%	1.5%	3.2%	8.6%	8.1%	5.7%	4.2%	4.6%	
Cancelled	4.8%	5.8%	7.5%	13.8%	18.9%	32.2%	40.4%	25.1%	18.6%	12.8%	24.9%	
Suspended	0.0%	0.2%	0.3%	0.7%	0.9%	1.4%	1.5%	0.6%	0.5%	0.4%	0.9%	
Total terminated	8.4%	12.2%	16.4%	30.2%	39.4%	75.2%	150.4%	82.5%	59.9%	48.5%	77.0%	
Total not completed	8.4%	12.0%	14.8%	24.1%	30.2%	47.6%	61.9%	42.6%	32.6%	24.3%	39.8%	
Non-completion factor	N/A	58.09	9.57	3.94	3.26	1.72	0.70	1.07	1.19	1.01	1.07	

Ethnicity

There are three fields containing information about a person's ethnicity. These fields relate to a person's country of origin, language spoken at home and ATSI status. Tables 4 to 6 show the variations in contract status due to these factors.

Table 4 shows that trainees and apprentices from North Africa and the Middle East are about 1.6 times more likely to terminate their contract of training through withdrawal / expiry / cancellation / suspension than they are to successfully complete it.

Table 5 shows that the highest non-completion factors are for students speaking other languages (American, African (excluding North African), Oceanic Austronesian, Pidgins and Creoles, Papuan, invented and sign) and for students speaking Australian indigenous languages, south-west Asian and North African languages.

Table 6 shows that ATSI trainees and apprentices are 2.4 times as likely to terminate their contract of training without completing than they are to complete their contract of training. Further, a comparison between the Tables 4, 5 and 6 shows that ATSI students are the most likely ethnic group to experience difficulties in completing their contracts of training.

Table 4: Variations in contract status by country

Status	Oceania and Antarctic a	North- West Europe	South + East Europe	N Africa + Mid- East	South- East Asia	North- East Asia	South + Central Asia	Americ as	Sub- Saharan Africa	Other	Total
Commenced	338016	11134	3231	1194	4569	842	1179	1794	1643	58051	421653
Recommenced	35765	634	272	173	300	57	36	156	124	1549	39066
Total Started	373781	11768	3503	1367	4869	899	1215	1950	1767	59600	460719
Terminations as a percentage of "starts"											
Withdrawn	9.7%	9.2%	10.6%	17.9%	12.0%	15.2%	10.0%	12.6%	10.2%	6.8%	9.4%
Completed	31.9%	25.4%	24.7%	26.8%	26.7%	24.7%	21.8%	25.9%	26.4%	75.2%	37.2%
Expired	3.3%	3.4%	3.1%	4.2%	3.0%	3.4%	2.1%	3.8%	3.5%	13.5%	4.6%
Cancelled	24.2%	19.2%	17.8%	20.5%	19.1%	17.6%	16.1%	23.1%	23.4%	32.1%	24.9%
Suspended	1.0%	1.7%	1.1%	0.4%	0.5%	0.3%	0.2%	0.3%	1.2%	0.4%	0.9%
Total terminated	70.1%	58.8%	57.3%	69.7%	61.3%	61.3%	50.1%	65.7%	64.7%	128.2%	77.0%
Total not completed	38.1%	33.4%	32.7%	42.9%	34.6%	36.6%	28.3%	39.8%	38.3%	53.0%	39.8%
Non-completion factor	1.19	1.32	1.32	1.60	1.29	1.48	1.30	1.53	1.45	0.70	1.07

Table 5: Variations in contract status by language

Languages Contract Status	North Euro- pean	South Euro- pean	East Euro- pean	South- west Asian + N. Africa n	South Asian	South- east Asian	East Asian	Aust- ralian Indige nous	Other	Not known	Total	
Commenced	296711	7099	3170	2742	893	2458	1174	2276	840	104290	421653	
Recommenced	25530	1117	365	556	26	152	84	76	38	11122	39066	
Total "Starts"	322241	8216	3535	3298	919	2610	1258	2352	878	115412	460719	
Terminations as a perce	Terminations as a percentage of "Starts"											
Withdrawn	9.8%	15.1%	14.3%	24.0%	13.2%	13.7%	16.7%	14.4%	19.8%	6.8%	9.4%	
Completed	27.2%	31.4%	29.3%	24.7%	22.7%	26.5%	25.6%	22.4%	18.9%	66.8%	37.2%	
Expired	3.0%	3.0%	3.0%	3.0%	1.8%	2.3%	2.9%	4.2%	2.2%	9.4%	4.6%	
Cancelled	22.4%	20.3%	19.0%	18.6%	14.6%	16.3%	16.7%	28.0%	19.7%	33.1%	24.9%	
Suspended	1.1%	1.0%	1.4%	0.2%	0.1%	0.7%	0.2%	0.3%	0.2%	0.4%	0.9%	
Total terminated	63.5%	70.8%	66.8%	70.6%	52.4%	59.5%	62.2%	69.2%	60.8%	116.5%	77.0%	
Total not completed	36.3%	39.4%	37.6%	45.9%	29.7%	33.0%	36.6%	46.8%	41.9%	49.8%	39.8%	
Non-completion factor	1.33	1.26	1.28	1.86	1.31	1.25	1.43	2.09	2.22	0.74	1.07	

Table 6: Variations in contract status by ATSI status

Contract Status	ATSI	Not ATSI	Unknown	Total						
Commenced	14499	304602	102552	421653						
Recommenced	579	24336	14151	39066						
Total Started	15078	328938	116703	460719						
Terminations as a percentage of "starts"										
Withdrawn	11.1%	10.5%	6.0%	9.4%						
Completed	21.8%	23.8%	76.9%	37.2%						
Expired	7.9%	2.2%	10.9%	4.6%						
Cancelled	32.2%	20.5%	36.6%	24.9%						
Suspended	1.1%	0.9%	1.1%	0.9%						
Total terminated	74.1%	57.8%	131.6%	77.0%						
Total not completed	52.3%	34.0%	54.7%	39.8%						
Non-completion factor	2.40	1.43	0.71	1.07						

Disability

Table 7 shows the variation in contract status due to disabilities. The results indicate that although trainees and apprentices with disabilities have similar withdrawal, expiry, cancellation and suspension rates to those without a disability, their completion rate is lower. This effectively gives them a higher non-completion factor.

Table 7: Variations in contract status by disability status

[Please see overleaf.]

Table 7: Variations in contract status by disability status

Contract Status	Disability	No Disability	Total						
Commenced	8699	412954	421653						
Recommenced	487	38579	39066						
Total Started	9186	451533	460719						
Terminations as a percentage of "starts"									
Withdrawn	9.33%	9.36%	9.36%						
Completed	19.48%	37.52%	37.16%						
Expired	4.21%	4.60%	4.59%						
Cancelled	25.59%	24.93%	24.94%						
Suspended	0.63%	0.95%	0.94%						
Total terminated	59.24%	77.36%	77.00%						
Total not completed	39.77%	39.84%	39.84%						
Non-completion factor	2.04	1.06	1.07						

Highest level of schooling

Table 8 shows the variation in contract status by highest level of schooling. The results indicate that trainees and apprentices with year 9 or lower are at a significantly higher risk of not completing their contract of training. It also shows that the likelihood of non-completion decreases as the highest level of schooling increases.

Table 8: Variations in contract status by highest level of schooling

Contract Status	Year 9 or	Year 10	Year 11	Year 12	Not Stated	Total				
	lower									
Commenced	29164	129068	70199	172488	20734	421653				
Recommenced	1671	13148	7516	15628	1103	39066				
Total Started	30835	142216	77715	188116	21837	460719				
Terminations as a percentage of "starts"										
Withdrawn	12.15%	11.53%	7.96%	8.09%	7.33%	9.36%				
Completed	21.26%	35.66%	34.68%	42.32%	33.85%	37.16%				
Expired	5.75%	4.46%	4.77%	4.07%	7.61%	4.59%				
Cancelled	26.71%	25.89%	26.98%	22.96%	26.02%	24.94%				
Suspended	0.70%	0.97%	1.57%	0.66%	1.37%	0.94%				
Total terminated	66.57%	78.51%	75.97%	78.09%	76.18%	77.00%				
Total not completed	45.32%	42.85%	41.29%	35.78%	42.33%	39.84%				
Non-completion factor	2.13	1.20	1.19	0.85	1.25	1.07				

Duration of contract

Table 9 shows the variation in contract status by duration of contract. The results show that the contract duration is not recorded for withdrawals and cancellations, thus making it impossible to see if contract duration is a factor in these types of terminations. It also means that the calculation for the non-completion factor is invalid in this case. However, the table does show a high percentage of suspensions for contracts of training over 4 years.

Table 9: Variations in contract status by duration of contract [Please see overleaf.]

Table 9: Variations in contract status by duration of contract

Contract Status	Up to 1 year	Over 1 and up to 2 years	Over 2 and up to 3 years	Over 3 and up to 4 years	Over 4 years	Unknown	Total			
Commenced	223750	42666	21820	126829	3595	2993	421653			
Recommenced	12217	9867	8970	6760	364	888	39066			
Total Started	235967	52533	30790	133589	3959	3881	460719			
Terminations as a percentage of "starts"										
Withdrawn	0.00%	0.00%	0.00%	0.00%	0.00%	1111.65%	9.36%			
Completed	31.68%	32.83%	34.20%	47.92%	117.33%	0.67%	37.16%			
Expired	5.41%	5.18%	3.34%	3.24%	7.50%	0.08%	4.59%			
Cancelled	0.00%	0.00%	0.00%	0.00%	0.00%	2960.53%	24.94%			
Suspended	0.10%	2.05%	2.41%	0.70%	34.63%	0.00%	0.94%			
Total terminated	37.19%	40.06%	39.94%	51.86%	159.46%	4072.92%	77.00%			
Total not completed	5.51%	7.23%	5.75%	3.94%	42.13%	4072.25%	39.84%			

Occupation

Table 10 shows the variation in contract status by occupation. The results show that the occupational groups most at risk of not completing their contracts of training are labourers and related workers and intermediate production and transport workers. The groups least at risk of non-completion are managers and administrators and professionals.

Table 10: Variations in contract status by occupation

Contract Status	Manag- ers and admin- istrators	Profes- sionals	Assoc- iate professi onals	Trades- persons and related workers	Advan- ced clerical and service workers	Inter- mediate clerical, sales and service workers	Inter- mediate produc- tion and trans- port workers	Elementary clerical, sales and service workers	Labour- ers and related workers	Total
Commenced	6792	3264	18459	170678	1024	119269	11142	46203	44822	421653
Recommenced	313	28	285	36148	6	1518	58	365	345	39066
Total Started	7105	3292	18744	206826	1030	120787	11200	46568	45167	460719
Terminations as	a percent	age of "sta	arts"							
Withdrawn	6.43%	6.35%	7.61%	10.02%	15.44%	10.45%	6.54%	7.16%	7.71%	9.36%
Completed	47.42%	27.46%	30.43%	45.63%	39.81%	33.67%	24.06%	26.35%	23.98%	37.16%
Expired	6.19%	5.26%	4.94%	2.92%	6.31%	5.57%	8.01%	5.33%	7.55%	4.59%
Cancelled	23.73%	14.79%	19.23%	31.05%	29.22%	19.52%	20.60%	18.45%	22.39%	24.94%
Suspended	0.13%	0.06%	0.14%	1.67%	0.19%	0.35%	0.31%	0.06%	0.83%	0.94%
Total terminated	83.90%	53.92%	62.35%	91.29%	90.97%	69.56%	59.52%	57.35%	62.47%	77.00%
Total not completed	36.48%	26.46%	31.91%	45.66%	51.17%	35.89%	35.46%	31.00%	38.49%	39.84%
Non- completion factor	0.77	0.96	1.05	1.00	1.29	1.07	1.47	1.18	1.61	1.07

FURTHER WORK

As discussed above, there is a major problem with the data in that the duration of contracts of training which have been withdrawn or cancelled is unknown. This makes it more difficult to therefore separate out traineeships from apprenticeships within the data. The next step is to examine ways of adequately separating the data so that issues pertinent to the different contracts of training can be identified. Following this, a series of cross-tabs will be performed whereby the combination of a number of factors can be examined.

During the last stages of the quantitative analysis, specific research questions will be formulated for the qualitative part of the study to ensure adequate coverage of relevant factors in the interviews.