



Australian Government

**Department of Education, Employment
and Workplace Relations**

Exits from the Trades

Literature Review

Prepared by Huntly Consulting Group Pty Ltd

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Table of Contents

Executive Summary	1
Literature Review	4
Introduction	4
Defining Skill Shortages	5
Trade Skill Shortages in Australia – Implications	5
Trade Skill Shortages in Australia - Industry Response	6
Attrition from the Trades	8
Rates of Attrition	8
General	8
Trade Specific Data	10
Conclusion – Rates of Attrition from the Trades	11
Factors which contribute to attrition in the trades	13
General	13
Individual Trades: Factors contributing to attrition	14
Conclusion – Factors contributing to attrition from the trades	20
Destinations of Tradespeople	21
Strategies for Reducing Attrition from the Trades	21
The Loss of Older Workers	22
Reducing or Responding to Attrition from the Trades	23
Conclusion - Strategies for Reducing Attrition from the Trades	27
Attrition from Apprenticeships	28
Rates of Apprentice Attrition	28
International	28
Australia	29
Conclusion – Rates of Attrition from Apprenticeships	31
Reasons for Apprentice Attrition	32
General	32
Apprentices	33
Conclusion – Reasons for Apprentice Attrition	37
Strategies for Reducing Apprentice Attrition	37
Conclusion – Strategies for Reducing Apprentice Attrition	40
General Conclusions	41
Bibliography	43
Glossary of Terms	46
Appendix 1 – Methodology	48

Table of Figures

Table 1 - Trade skill usage rates for major trade groups, 1993	10
Table 2- Main reasons qualified tradespeople left the automotive trades, 1993	15
Table 3 - Main reasons qualified tradespeople left the metal fitting and machining trades, 1993	16
Table 4 - Main reasons qualified tradespeople left the other metal trades, 1993	16
Table 5 - Main reasons qualified tradespeople left the electrical and electronics trades, 1993	17
Table 6 - Main reasons qualified tradespeople left the building trades, 1993	17
Table 7 - Main reasons qualified tradespeople left the food trades, 1993	18
Table 8 – Main reasons qualified tradespeople left the hairdressing trade, 1993	19
Table 9 – Main reasons qualified tradespeople left all other trades, 1993	19
Table 10 – Main reasons qualified tradespeople left all trades, 1993	20
Table 11 - Main factor that would enable return to metal fitting and machining trade	25
Table 12 - Main factor that would enable return to other metal trades	25
Table 13 - Main factor that would enable return to electrical and electronics trades	26
Table 14 - Main factor that would enable return to building trades	26
Table 15 - Main factor that would enable return to vehicle trades	26
Table 16 - Main factor that would enable return to food trades	26
Table 17 - Main factor that would enable return to hairdressing trades	27
Table 18 - Main factor that would enable return to other trades	27
Table 19 - Main factor that would enable return to all trades	27

Table of Charts

Figure 1 -- Reasons for leaving the trade (1993) (Australia)	15
Figure 2 - Proportion of trade qualified workers who would and would not consider returning to their home trade (1993) (Australia)	24
Figure 3 - Proportion of trade qualified workers, by trade qualification, who would and would not consider returning to their home trade (1993) (Australia)	24
Figure 4 - Proportion of trade qualified workers, by trade qualification, who would consider returning to their home trade (1993) (Australia)	25

Executive Summary

The *Exit from the Trades* research project was commissioned by the Department of Education, Employment and Workplace Relations (DEEWR) in response to a 2006 Council of Australian Governments (COAG) agreement to a sweeping action plan to address the ongoing issue of skill shortages in Australia. The COAG action plan covers a wide range of areas including a commitment to 'Understanding Skill Shortages Better', and emerged in the context of a nation experiencing its tightest labour market in more than 30 years.

The objective of *Exit from the Trades* was to examine attrition from the trades workforce. 'Attrition' is defined as 'a reduction in the number of people in an occupation or apprenticeship due to those leaving the occupation or (incomplete) apprenticeship'. The scope of the research covered both tradespeople and apprentices, as apprenticeship is the main (and in some trades the only) pathway to becoming a qualified tradesperson. Attrition from the trades in Australia is a major, contributing factor to skill shortages and represents an enormous economic loss for the nation in the form of unrealised or poorly realised returns on substantial training investment.

This literature review is the outcome of the first phase of the *Exit from the Trades* project. As well as the literature review, the project involves analysis of national data on training, labour mobility and occupational trends within the trades, along with national consultations involving approximately 50 industry, employer, employee and training organisation representatives, and focus groups with tradespeople, ex-tradespeople and apprentices.

Aims

The literature review was defined by DEEWR as follows:

"A systematic analysis of national and international literature (including from European countries, the United States, the United Kingdom and Canada) regarding the patterns of and factors influencing acquisition of qualifications and subsequent patterns and extent of and reasons for exit from trades of tradespeople. The literature reviewed should address the characteristics required to retain qualified trades people in their trade; skills wastage; the effect of skills shortages in the trades on industry; and effective ways to retain qualified tradespeople in their trade and address skills shortages in the trades."

Methodology

The literature review into attrition from the trades and apprenticeships was undertaken using the methodology outlined at Appendix 1. In summary, the literature search covered a number of Australian and international education, training and economic literature repositories and used a set of single and co-joined terms to identify literature with likely relevance to the review topic.

Searches were limited to literature published during or after 1995 on the basis that Australia's labour market, economic and skills supply circumstances have changed substantially since the mid-1990s.

However, literature produced pre-1995 which demonstrated continued currency or 'benchmark' publications were included in the final set of literature for use in preparing the review.

The majority of literature selected for reference in the review is Australian in origin, as most international literature tended to deal with labour market circumstances which were very different to those in Australia. As a result, only limited reference is made to international evidence in the review.

The literature review focussed on uncovering literature, published or unpublished, that related to attrition from the trades, attrition from occupations more generally, attrition from apprenticeships and education and training more broadly and the impact of skill shortages on Australian industry.

Terms used in this literature review are explained in the Glossary of Terms included at the end of this paper.

Findings

The review revealed that:

- Much more research has been conducted over the past 15 years on the rates and causes of attrition from apprenticeships than on attrition from the trades themselves. However, Australian literature suggests that around about 50% of tradespeople are no longer working in their trades and that, of these, about half never use their trade skills with the remainder split evenly between using them weekly or occasionally.
- There are major differences between trade groups, with, for instance, ex- hairdressers the least likely to still be using their skills (36%) compared to the most likely group (building and construction tradespeople) at 13%.¹ The literature suggests that these differences between trade groups can be accounted for by a number of factors including the dominance of women in the hairdressing industry (leaving work for good for family reasons)² and the depth of career paths and the portability of skills and experience in other industries such as automotive³ and electrotechnology which encourage vertical and horizontal movement out of the trades.⁴ Differences between the trade groups suggest that different reasons for leaving the trade are at work and, as a consequence, any strategies to reduce attrition rates would need to be tailored to individual trades.
- A comparison between international and Australian research and literature on rates of attrition amongst apprentices indicates that other developed countries experience apprentice non-completion rates of around 40% to 50%, suggesting that Australia's experience with non-completions is not unique.
- The research exploring the reasons for attrition from the trades highlights the extent to which it is a mix of what can be considered desirable and undesirable factors. Promotion and increased pay (if one accepts that higher levels of pay are an expression of labour market demand) are, for example, part of

¹ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

² DEWR, 2004, Labour Market for the Trades, pg 41

³ Borthwick, Jessie; John, David and Werner, Mark, 2000, Evidence of skill shortages in the automotive trades, pg 19

⁴ Electrotechnology Working Group, undated, Skill Shortages in Electrotechnology, pg 86

the natural order of the labour market and a desirable and essential aspect of a workforce that continues to acquire higher and higher levels of skill over time. On the other hand, a lack of career structures or uncompetitive wages represent undesirable factors that contribute to attrition from the trades.

- In terms of literature that focuses on how tradespeople might be lured back to their home occupations, the research is dated and almost exclusively (in Australia) relies on the 1994 Australian Bureau of Statistics (ABS) research publication *Career Paths of Persons With Trade Qualifications Australia 1993*.⁵ It shows that improved pay, a promotion or better career prospects are generally the least likely incentive to return to the trade.
- Both Australian and international studies suggest that many of the reasons that people leave the trades are common to most employment environments, such as conflict with their employer, dissatisfaction with wage levels and a lack of work due to economic downturn. However, a number are apprenticeship specific, such as insufficient training and a growing realisation by the apprentice that they did not enjoy or were no longer committed to the apprenticeship they had commenced.
- Many reasons given by apprentices and employers for early exit from apprenticeships relate to factors that would be difficult to control (economic downturn, employer closure, acceptance of a 'better' job offer) and, thus, difficult to prevent. However, some factors could be addressed, such as conflict with the employer, perceived poor wage levels, disinterest in the apprenticeship and career path, a lack of work effort or interest by the apprentice and concerns about bullying in the workplace.

There is evidence that the multiplicity of methodologies used to calculate completion rates is creating some confusion. Different methodologies return different results in terms of rates of attrition from apprenticeships and attribute varying levels of importance to personal characteristics in determining the likelihood of attrition. It is likely that Australia, at least, could benefit from a single, accepted, authoritative methodology for determining completion rates amongst apprentices.

- There is considerable evidence to suggest that the employer/apprentice relationship is key to the success and completion of apprenticeships and that efforts should be directed to better matching employers and apprentices and, during the life of the apprenticeship, providing sufficient early intervention services to resolve conflicts or issues that threaten to escalate into a decision by either party to terminate the contract of training.
- Further, evidence suggests that individuals who developed a strong commitment to entering an apprenticeship and embarking on a trade career before they actually did so were more likely to complete their course.

⁵ ABS, 1994, *Career Paths of Persons With Trade Qualifications Australia 1993*

Literature Review

Introduction

This literature review has been prepared in the context of a broader research project focussing on exits from the trades and apprenticeships. The project was commissioned by the Department of Education, Employment and Workplace Relations (DEEWR) in response to the outcomes of a 10 February 2006 meeting at which the Council of Australian Governments (COAG) agreed to a sweeping action plan to address the ongoing issue of skill shortages in Australia. The action plan covers a wide range of areas including a commitment to 'Understanding Skill Shortages Better'.

The aims of the literature review were to produce:

"A systematic analysis of national and international literature (including from European countries, the United States, the United Kingdom and Canada) regarding the patterns of and factors influencing acquisition of qualifications and subsequent patterns and extent of and reasons for exit from trades of tradespeople. The literature reviewed should address the characteristics required to retain qualified trades people in their trade; skills wastage; the effect of skills shortages in the trades on industry; and effective ways to retain qualified tradespeople in their trade and address skills shortages in the trades."

Attrition from the trades in Australia is a major, contributing factor to skill shortages and represents an enormous economic loss for the nation in the form of unrealised or poorly realised returns on substantial training investment.

The Commonwealth National Industry Skills Initiative Working Group⁶ concluded in 2002 that attrition is a major issue for many trade groups, finding that, for example:

- only 65.1% of qualified electro-technology tradespeople are still working in their trade group;
- only 55% of qualified metal tradespeople, construction tradespeople and automotive tradespeople are still working within their trade group;
- for the latter three occupational areas, only 40% were employed directly in their trade rather than in related, more senior jobs.⁷

Further, research in 2005 conducted by consulting group Miles Morgan Australia for the Western Australian Department of Education and Training found Western Australian attrition rates from apprenticeships were often 25% of the entry point cohort (and over 50% in the hospitality trades), a figure which suggests that statistics on attrition from the trades understate the overall loss from the aggregate training effort.⁸

⁶ Refer <http://www.getatrade.gov.au> for further information

⁷ Commonwealth National Industry Skills Initiative Working Group, 2002, Nature and Causes of Skill Shortages, pg 5

⁸ Miles Morgan Australia, 2005, Apprenticeship and Traineeship Forecasting Model

In this context, the literature review of the Exit from the Trades project attempts to provide a synthesis of the findings of the available literature, both Australian and international, on the factors behind attrition in the trades and trade training.

Defining Skill Shortages

Given the context within which the literature review has been commissioned, it is useful to provide an overview of recent literature that deals with the issue of skill shortages in the trades.

Most simply, a skill shortage can be conceived of as industry demand for skilled workers exceeding supply. However, as Richardson⁹ rightly points out, the concept of a skill shortage is not, in practice, so simple. Shortages may relate not to the number of skilled workers available but, for example, the number of hours they are prepared to work, whether or not they are prepared to work in the occupation for which they are skilled, the wages and working conditions they command and the level of ability of individual workers. Taking these factors into account leads to a series of classifications distinct from the commonly used notion of a skill shortage – skills mismatch, quality gaps, skill gaps etc.¹⁰ (this issue is also explored in the *Nature and Causes of Skill Shortages*¹¹).

It is important to bear in mind the complicated nature of the concept of skill shortages because, often, what is perceived or communicated as a skill shortage is not, in fact, simply a case of demand exceeding supply and thus demands a more complex response than simply increasing supply.

For example, while there may be enough qualified mechanics in Australia to fill every vacancy, these vacancies may go unfilled because the wages being set by employers are not enough to encourage mechanics to take up the available jobs – they may instead stay in other occupations with higher wages. In this hypothetical case, the solution to the ‘skill shortage’ is not likely to simply be an increased level of training for mechanics to boost supply levels – it may, in fact, be that market regulation or poor employer awareness of the labour market are artificially holding down wage levels and that one of these imperfections needs to be corrected in order for the correct wage signals to be sent.

Trade Skill Shortages in Australia – Implications

Difficulty filling trade vacancies has become a major issue for Australian industry during the recent and current prolonged period of economic growth. The past five years have seen a significant amount of effort being directed to identifying, measuring and resolving trade skill shortages that have, by and large, resulted from enormous levels of industry investment in resource development projects, the sale of minerals at unprecedented price points and the flow on expansion of the Australian economy as a whole. A wide range of reports and publications have been generated in a bid to assist Government and industry to foresee and respond pro-actively to imminent or developing skill shortages in the trades. For example, recent publications produced by DEWR¹², Monash University¹³, Minerals Council of Australia¹⁴, the Australian

⁹ Richardson, S (NCVER), 2007, What is a skill shortage?, pg8

¹⁰ Ibid, pg 9

¹¹ DEWR, 2002, Nature and Causes of Skill Shortages: Reflections from the Commonwealth National Industry Skills Initiative Working Groups, pg 3

¹² DEWR, 2005, Workforce Tomorrow: Adapting to a more diverse Australian labour market

¹³ Monash University, 2005, Availability of skilled labour in selected occupations in Western Australia

Industry Group¹⁵, Australian Chamber of Commerce and Industry¹⁶ and the Resources and Infrastructure Industry Skills Council¹⁷ all point towards persistent shortfalls of skilled workers to 2010 and beyond.

In the majority of cases, shortages of skilled trade workers are considered problematic for Australian industry because of the potential to constrain industrial activity and economic growth and to drive wages up to levels that force up inflation and, through monetary policy settings, interest rates (which in turn reduce the affordability of credit for consumers and industry alike).

The WA Chamber of Commerce and Industry-commissioned report *Availability of skilled labour in selected occupations in Western Australia* cites interviewed companies as identifying skill shortages as one of the three main risk factors impacting on project planning.¹⁸ The report states that “Shortages of skilled labour represent a major risk to the successful completion of projects. Projects risk being delayed from the construction phase through to the operational and maintenance phases.”¹⁹ For all industries in Australia, this is a critical risk associated with the rise of skill shortages – the likelihood that their emergence will inhibit or prevent expansion of activity. From a whole of economy perspective, constrained industrial expansion translates into slowing economic growth, the loss of opportunities to reduce operating costs through economies of scale and the potential to become globally uncompetitive as industry in other countries expands, reduces costs and prices Australian companies out of the market.

On the other hand, skill shortages pose a significant risk to companies, industry sectors and the economy as a whole because they may lead to increasing wages. Wages growth can, in turn, lead to rising inflation which is typically combated through increased interest rates which increase the cost for credit and force down consumer expenditure.

Trade Skill Shortages in Australia - Industry Response

While concern about the implications of trade skill shortages is valid, it is interesting to note that Shah and Burke found that “Wages are not always flexible for various reasons including the time taken by employers to deal with the problem, the implications for the wages of existing staff and the industrial relations arrangements. The flexibility varies across occupations and industries. While the relative earnings of computer professionals in the period from 1996 to 2002 clearly increased, in a number of trade occupations which have experienced persistent shortages there is little evidence of any increase in relative earnings.”²⁰

Shah and Burke also point out that even if wage responses do occur in times of skill shortage, these may be slow. Factors that tend to inhibit wage responsiveness in times of skill shortages are cited as including existing contracts of employment, imperfections in the area of product market competition, a lack of

¹⁴ Minerals Council of Australia, 2006, Staffing the Supercycle: Labour force outlook in the Minerals sector 2005 to 2015

¹⁵ AIG, 2006, World Class Skills for World Class Industries

¹⁶ ACCI, 2007, Skills for a Nation: A Blueprint for Improving Education and Training 2007-2017

¹⁷ RIISC, 2005, The RIISC Report

¹⁸ Monash University, 2005, Availability of skilled labour in selected occupations in Western Australia, pg 6

¹⁹ Ibid

²⁰ Shah, C and Burke, G, 2003, Skills Shortages: concepts, measurement and implications, pg v

transparency inherent in the labour market, controls on wages and welfare arrangements.²¹ A similar analysis is found in a 1994 OECD report that looks, in part, to explain the causes of skill shortages.²²

Trendle expands on this view, acknowledging that wages should increase to compensate for growth in demand that exceeds growth in supply.²³ He goes on to state that a number of factors may act to prevent wages from responding to skill shortages “including that while collective agreements are more flexible than the centralised wage setting system they may not offer enough scope to alleviate shortages. In addition, the wage leadership model of wage determination concludes that workers and unions respond to changes in wage relativities, meaning that award changes in response to the scarcity of certain skills may result in industrial unrest and wage inflation.”²⁴

Trendle also explores other possible, economically sound solutions to skill shortages including:

1. Altering production methods to enable less skilled workers to replace more highly skilled workers;
2. Altering production methods to replace labour with machinery;
3. Increasing the training effort directed at an occupation in shortage.²⁵

Trendle explores the latter response, increased training, within the context of trade skill shortages reported at the time in Queensland. He makes the point that a training response is really only useful if there is evidence of a fall in the ratio of persons being trained to total employment. Essentially, he argues that increased training effort will only work to redress skill imbalances in instances where the proportional training effort has declined. If this ratio has increased, as appears to be the case in nearly all trade groups except the mechanical and fabrication trades in Queensland, and skill shortages persist, the training response is evidently not addressing the cause (which may, in fact, be poor wage adjustments, working conditions etc).²⁶ Other strategies are likely required to address the skill shortage.

Shah and Burke also look at the issue of replacing workers who leave an occupation, noting that replacement rates appear to be very high for the automotive and hairdressing trades, about average for the metals trades and below average for refrigeration and air-conditioning mechanics.²⁷ These findings suggest that training and skilled migration strategies may work well for some trades but not so well for others.

However, a review of numerous Government and industry media releases suggest that increasing numbers in training is by far the preferred methodology for tackling skill shortages. Trendle notes this and argues that this is generally the response preferred by industry because it typically shifts the cost of the ‘solution’ from private firms to the public sector.²⁸

²¹ Shah, C and Burke, G, 2003, Skills Shortages: concepts, measurement and implications, pg 11

²² OECD, 1994, OECD Jobs Study: Evidence and Explanations.

²³ Trendle, B, 2005, Perspectives on Skill Shortages, pg 7

²⁴ Ibid, pg 8

²⁵ Ibid, pgs 7 - 8

²⁶ Ibid, pg 9

²⁷ Shah, C & Burke, G, 2003, Job turnover: replacement needs and vacancies by occupation

²⁸ Trendle, B, 2005, Perspectives on Skill Shortages, pg 9

The two Shah and Burke papers and the Trendle paper draw on a wide range of international and national literature on the issue of skill shortages and, together, suggest a compelling argument for tailoring supply and demand-side solutions for different occupational groups. In fact, it may be possible to profile individual trade groups in terms of a consistent set of supply and demand variables in order to arrive at effective, customised strategies for addressing skills imbalances in each group. For example, the profile of one trade group, where the replacement rates for those leaving the occupation are in decline, may demand increases in training and immigration as an appropriate solution. For another trade group, where wage levels have failed to move despite persistent skill shortages, greater market transparency may be necessary to encourage employers to adjust wages. Potentially, a significant research effort could be undertaken in this area to identify the individual variables which bear the greatest responsibility for skill shortages for each trade group and, thus, the most appropriate solutions.

Attrition from the Trades

Attrition from the trades workforce is seen to be a major contributing factor to skills shortages in the trades. However, this review has found that there has been much less research over the past 12 to 15 years into attrition from the trades than into attrition from apprenticeships. The relative paucity of research emphasis on attrition from the trades has occurred within the context of significant, global concern with investigating the non-completion of formal courses of education and training of which apprenticeships are a subset. The same applies to occupations more broadly, with very little useful or recent literature being found through the search process.

Rates of Attrition

General

In 1994, the Australian Bureau of Statistics (ABS) compiled a major analysis of collected data on the career paths of Australian tradespeople.²⁹ The report found that between 1989 and 1993, the number of qualified Australian tradespeople working in their home trade fell from 54% (of 1,343,700 persons) to 49% (of 1,530,200 persons). Approximately 34% were working outside their trade in 1993 compared to 35% in 1989 and a total of 7% were unemployed as opposed to the much lower figure of 3% recorded in 1989.

The 1994 publication shows that 48% of all qualified tradespeople who had worked in their home trade were no longer working in that trade and, of these, 47% did not use their trade skills at all, 29% used their trade skills at least once a week and 24% used their trade skills occasionally.³⁰

The 1994 ABS study also found, as did other studies, that the proportion of tradespeople working in their home trade decreased with age: 69% of the 15 to 24 years age group were working in their home trade compared to 25% for tradespeople aged 55 to 64 years. In addition, the study found that one in five tradespeople who had worked in the trade for which they were qualified had taken at least one break of 12 months before returning to their trade occupation (a figure mirrored in 1989).³¹

²⁹ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

³⁰ Ibid, pg 1

³¹ Ibid, pg 3

Similar research by the then-Department of Employment, Workplace Relations and Small Business (DEWRSB) and cited by the National Centre for Vocational Education Research (NCVER) using 1996 Census data found that for all persons over 15 years of age and holding a trade qualification:

- 38% were working in a trade;
- 35% were working in a non-trade occupation;
- 5% were unemployed;
- 21% were not in the labour force (that is, not employed or actively seeking work, which includes those who retire).³²

More recent research, conducted by the then Department of Employment and Workplace Relations (DEWR) using 2001 Census data found that:

- on average, 35.1% of qualified tradespeople were working in their home trades;
- on average, 10% of qualified tradespeople had moved into related occupations (rather than remaining in the trade for which they were qualified);
- the proportion of tradespeople working in their home trade fell consistently with time elapsed since they attained their qualification (meaning that the proportion of qualified tradespeople working in their home trades was highest for those aged between 19 and 23 years at 61.6% compared to just 17.3% for tradespeople over the age of 49 years);
- 28.8% of qualified tradespeople were working in occupations unrelated to their trade qualification with the largest proportion becoming Truck Drivers, Sales Assistants or Cleaners;
- while about 3.9% of qualified tradespeople were unemployed at the time of the 2001 Census, the proportion unemployed tends to fall 10 to 14 years after attainment of trade qualification and, again, around the usual age of retirement;
- the proportion of qualified tradespeople not participating in the labour force increased from an average of 10.8% 20 to 29 years after gaining their trade qualification to an average of 48.3% after 30 or more years since qualifying.³³

Webster et al cite 1996 Census collection data which shows that the drift from trades into lower-skilled occupations is a greater drain on supply than the promotion of tradespeople up the career ladder and out of their home trade. At the time of the Census, 17.9% of metal, vehicle and electrical tradespeople and 14.4% of building and construction tradespeople were working in semi-skilled or unskilled manual and service sector work. Further, 8 to 13% were working in clerical and sales jobs. These rates do not compare favourably to tertiary qualified workers, of whom only 7.4% in total were working in jobs considered less skilled than their university education qualified them for.³⁴

It is useful to note NCVER's observation that "This picture of separation from the trades has changed very little in overall terms since the late 1980s ... the rate of remaining in skilled trades employment if qualified as an apprentice (or in an equivalent skilled vocational qualification) has stayed at just over half of all those

³² NCVER, 2001, Australian Apprenticeships: at a glance

³³ DEWR, 2004, Labour Market for the Trades, pg 39 - 41

³⁴ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pg 92

employed since 1989.”³⁵ Essentially, although there appears to be some movement in statistical representations of attrition from the trades between data sets and time periods, the overall attrition tendencies within the trades seem not to have changed much over the past two decades.

Not much literature examines attrition from occupations, with most focussing on the teaching profession (from a turnover perspective which includes movement between schools rather than exiting the profession) and medical professionals. This literature is predominantly international and relates to very different labour market settings to that experienced in Australia. Further, most occupational attrition reports that deal with the topic more broadly were considered too old to be of any value, as they were published in the 1980s and rely on data between 20 and 30 years old. Accordingly, it is difficult to contextualise the trade attrition experience within the broader Australian labour market. However, the Exits from the Trades project also includes a substantial data analysis component and, using ABS data, will be able to make labour mobility comparisons between Australian tradespeople and non-trade workers to compensate for the dearth of local literature.

Trade Specific Data

At the level of individual trade groups, the ABS data³⁶ shows the following about patterns of attrition and mobility:

Table 1 - Trade skill usage rates for major trade groups, 1993

	Working in Trade	Use Trade Skills at Least Weekly	Never Use Trade Skills
Metal Fitters and Machinists	52%	18%	18%
Other Metals	56%	11%	20%
Electrical and Electronics	60%	11%	15%
Building and Construction	71%	9%	13%
Vehicle	57%	18%	13%
Food	55%	11%	31%
Hairdressers	57%	2%	36%
Other Trades	50%	9%	32%

Later research conducted using 1996 Census data found that, for qualified automotive (or vehicle) tradespeople, 43% were working in an automotive trades occupation, 38% were working in a non-trade occupation, 5% were unemployed and 15% were not in the labour force (includes those who retired). The proportion who were working in their trade (43%) was higher than the average (38%) for all trades in the Australian workforce.³⁷

Similar research into qualified building and construction tradespeople and using DEWRSB supplied data based on the 1996 Census found that 41% were working in a trade occupation (the proportion of qualified construction tradespeople who were working in their trade (41%) was higher than the average (38%) for all

³⁵ NCVET, 2001, Australian Apprenticeships: Facts, Fiction and Future, pg xxii

³⁶ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993, table 8.1

³⁷ Borthwick, Jessie; John, David and Werner, Mark, 2000, Evidence of skill shortages in the automotive trades, pg 17

trades in the Australian workforce). In addition, 30% were working in a non-trade occupation, 7% were unemployed and 21% were not in the labour force (including those who retire).³⁸

The building and construction data also highlights the fact that 32% of tradespeople that left their trade did so within five years of gaining employment while 58% left within 10 years, representing a lower rate of early occupational exodus than for trades as a whole.³⁹

A report by the Electrotechnology Working Group also draws on DEWSRB 1996 Census data, stating that for those workers with electrotechnology trade qualifications:

- 42% were working in electrical or electronic trade occupations;
- 35% were working in a non-trade occupation;
- 4% were unemployed;
- 17% were not in the labour force (including those who retired).⁴⁰

The DEWR Labour Market for the Trades report found that:

- the building and construction trades had the highest retention rate of qualified tradespeople (41.7%) while the mechanical engineering trades had the lowest (28.2%);
- the automotive trades had the highest share of qualified tradespeople (15.8%) working in related occupations;
- the other trades group had the lowest proportion of qualified tradespeople working in related occupations (7.5%) and only 2% of hairdressers were working in a related occupation rather than their home trade.⁴¹

Conclusion – Rates of Attrition from the Trades

Australian research into trade attrition over the past 12 to 15 years has mainly focused on identifying attrition rates for all trades and associated variables and then focussing on major trade groups. Overseas literature on attrition from the trades is scarce and is generally more concerned with causal factors and, particularly, strategies to manage attrition rather than measuring and comparing rates.

Australian literature suggests that around about 50% of tradespeople are no longer working in their trades and that, of these, about half never use their trade skills, with the remainder split evenly between using them weekly or occasionally. Note, however, that these figures tend to vary considerably between individual trade groups, with ex-hairdressers the least likely to still be using their skills (36%) compared to the most likely group (building and construction tradespeople) at 13%. The literature suggests that these differences between trade groups can be accounted for by a number of factors including the dominance of

³⁸ Building and Construction Industry Working Group (Australia); Dept of Education, Training and Youth Affairs (DETYA); National Industry Skills Forum (Australia), 2001, Building Brighter Futures: Present and Future Skill Needs in the Building & Construction Industry, pg 67

³⁹ Ibid, pg 67

⁴⁰ Electrotechnology Working Group, undated, Skill Shortages in Electrotechnology, pg 83

⁴¹ DEWR, 2004, Labour Market for the Trades, pg 39

women in the hairdressing industry (leaving work for good for family reasons)⁴² and the depth of career paths and portability of skills and experience in other industries such as automotive⁴³ and electrotechnology, which encourage vertical and horizontal movement out of the trades⁴⁴.

Differences between the trade groups suggest that different reasons for leaving the trade are at work and, as a consequence, any strategies to reduce attrition rates would need to be tailored to individual trades (explored later in the literature review when the reasons for trade attrition are discussed).

Further, a variety of analyses consistently find that attrition from a trade becomes more likely the longer since the qualification was attained.^{45 46 47 48} It is clear from the data presented in a variety of reports, that a significant loss of tradespeople from their home trades occurs within the first five years of working as a tradesperson (40% overall according to the ABS⁴⁹). No data was found to compare this rate of attrition to other occupations or non-trade occupations. However, it is not surprising that a substantial amount of attrition occurs within the first five years of working in a trade, as this is the period in which tradespeople gain experience in their job, while also having a qualification which makes them more mobile in the labour market if they want to change jobs.

Overall, the literature review has uncovered very little in the way of surprising or 'new' information but, perhaps most importantly, has highlighted the lack of research focus on trade attrition rates over the past 12 to 15 years and the tendency of most research during that period to rely on existing source documents (particularly the *ABS Career Paths of Persons with Trade Qualifications* published in 1994). A notable exception is the 2004 DEWR *Labour Market for the Trades* unpublished paper which uses 2001 Census data.

Since 1993⁵⁰, the ABS has not conducted any further surveys specifically focussed on measuring attrition from the trades and identifying causal factors (although the two yearly Labour Mobility supplement to the Labour Force Survey does collect data about occupational mobility). The review highlights the potential value of more up-to-date research on the extent of rates of attrition from the trades.

More broadly, and this applies to all areas of attrition from the trades, the national research effort has not kept pace with the obvious importance of this issue in terms of skill shortages. Renewed, co-ordinated research would greatly update Australia's understanding of the extent to which attrition impacts on supply relative to demand and what can be done to stem the loss of trade skills that results from qualified individuals leaving their home trade for good (and prevent it from happening in the first place).

⁴² DEWR, 2004, *Labour Market for the Trades*, pg 41

⁴³ Borthwick, Jessie; John, David and Werner, Mark, 2000, *Evidence of skill shortages in the automotive trades*, pg 19

⁴⁴ Electrotechnology Working Group, undated, *Skill Shortages in Electrotechnology*, pg 86

⁴⁵ Building and Construction Industry Working Group (Australia); Dept of Education, Training and Youth Affairs (DETYA); National Industry Skills Forum (Australia), 2001, *Building Brighter Futures: Present and Future Skill Needs in the Building & Construction Industry*, pg 67

⁴⁶ ABS, 1994, *Career Paths of Persons With Trade Qualifications Australia 1993*, pg 3

⁴⁷ Electrotechnology Working Group, undated, *Skill Shortages in Electrotechnology*, pg 86

⁴⁸ DEWR, 2004, *Labour Market for the Trades*, pg 41

⁴⁹ ABS, 1994, *Career Paths of Persons With Trade Qualifications Australia 1993*, pg 3

⁵⁰ ABS, 1994, *Career Paths of Persons With Trade Qualifications Australia 1993*

Factors which contribute to attrition in the trades

General

Recent literature dealing with the reasons people leave their trade occupations tends to be split into two categories: that which focuses on a specific trade and attempts to enumerate, usually using survey data, the reasons for leaving, and that which explores the issue of attrition more generally, often from a theoretical point of view.

By and large findings across the literature are similar in terms of the sort of factors that motivate individuals to leave their trade. There is considerable evidence to suggest that the same factors are at work within individual trades but to varying degrees. Importantly, much of the literature points out the difference between 'positive attrition' where tradespeople leave their trade to take up a more highly skilled job and 'negative attrition' where leaving the trade occurs against the wishes of the individual (eg redundancy) or results in the loss of (most or all of) their skills and experience from the workforce.

Webster et al recognise that attrition rates for tradespeople are typically higher than for professional and para-professional workers and attribute much of this to a lack of career paths and limited opportunities for promotion.⁵¹ They discuss the range of reasons why tradespeople leave their jobs and cite getting a "better or more interesting job" as the primary reason, followed by seeking a pay rise or promotion.⁵² Working conditions, often anecdotally blamed for attrition in the trades, feature as a minority in the reasons given by tradespeople for leaving their trade.⁵³

Further, Webster et al found that the career paths and earning profiles for people working in the trades and those with trade qualifications are much flatter than for other skilled categories of labour. In fact, 1996 census data shows that tradespeople who stay in their trade labour market (this covers trade jobs as well as lesser skilled jobs servicing the trades such as labouring) tend to have flatter experience-to-earning profiles than those who opt to leave their home trade.⁵⁴ They sum this finding up as follows: "First, qualified tradesmen who have moved into managerial or administrative positions earn a significant premium over those who remain in trade classified jobs. This may reflect higher earnings of those operating their own businesses. Second, qualified tradesmen who work in the labouring occupations earn less than those who remain in a trade."⁵⁵

This suggests that wages and future earning capacity act as a significant incentive to move vertically out of a home trade but does not explain why qualified tradespeople may choose to move into lower skilled occupations and incur a loss in earning capacity.

Webster et al also quote results from the Melbourne Institute's 1999-2000 Omnibus Survey which asked qualified tradespeople or people working in a trade a series of questions about attrition from the trades.

⁵¹ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pgs 12 - 13

⁵² Ibid

⁵³ Ibid

⁵⁴ Ibid, pgs 92 -93

⁵⁵ Ibid

The two most commonly quoted reasons were that tradespeople left their home trade either to start their own business or 'get a better job'. The two least commonly quoted reasons were that the job was too difficult or that there was not enough work.⁵⁶ The latter reason conflicts with the 1994 findings published by ABS in *Career Paths of Persons With Trade Qualifications Australia 1994* which found that a lack of work was one of the most prevalent reasons cited for leaving a home trade.⁵⁷ This anomaly may reflect either the results of differing sampling techniques or, potentially, different economic circumstances at the time of survey which would indicate that this reason is not part of a long-term trend but dependent on macro-economic variables.

However, in agreement with the ABS publication, Melbourne Institute respondents agreed, on balance, that the tradespeople tended to leave their home trade because the pay was too low or there were few prospects for promotion.⁵⁸

Individual Trades: Factors contributing to attrition

By referring to the ABS publication's data tables, the reasons for leaving the trade for each major trade group and all trades as a whole have been calculated and presented below along with other trade group-specific information about the factors underpinning attrition. Figure 1 below shows the ABS-recorded reasons (by percentage per trade group), while the tables following show the reasons relating to each specific trade group.

⁵⁶ Ibid, pg 97

⁵⁷ ABS, 1994, *Career Paths of Persons With Trade Qualifications Australia 1993*

⁵⁸ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, *Training for the Skilled Trades in Australia: 1980 – 2000*, pg 97

Figure 1 - – Reasons for leaving the trade (1993) (Australia)

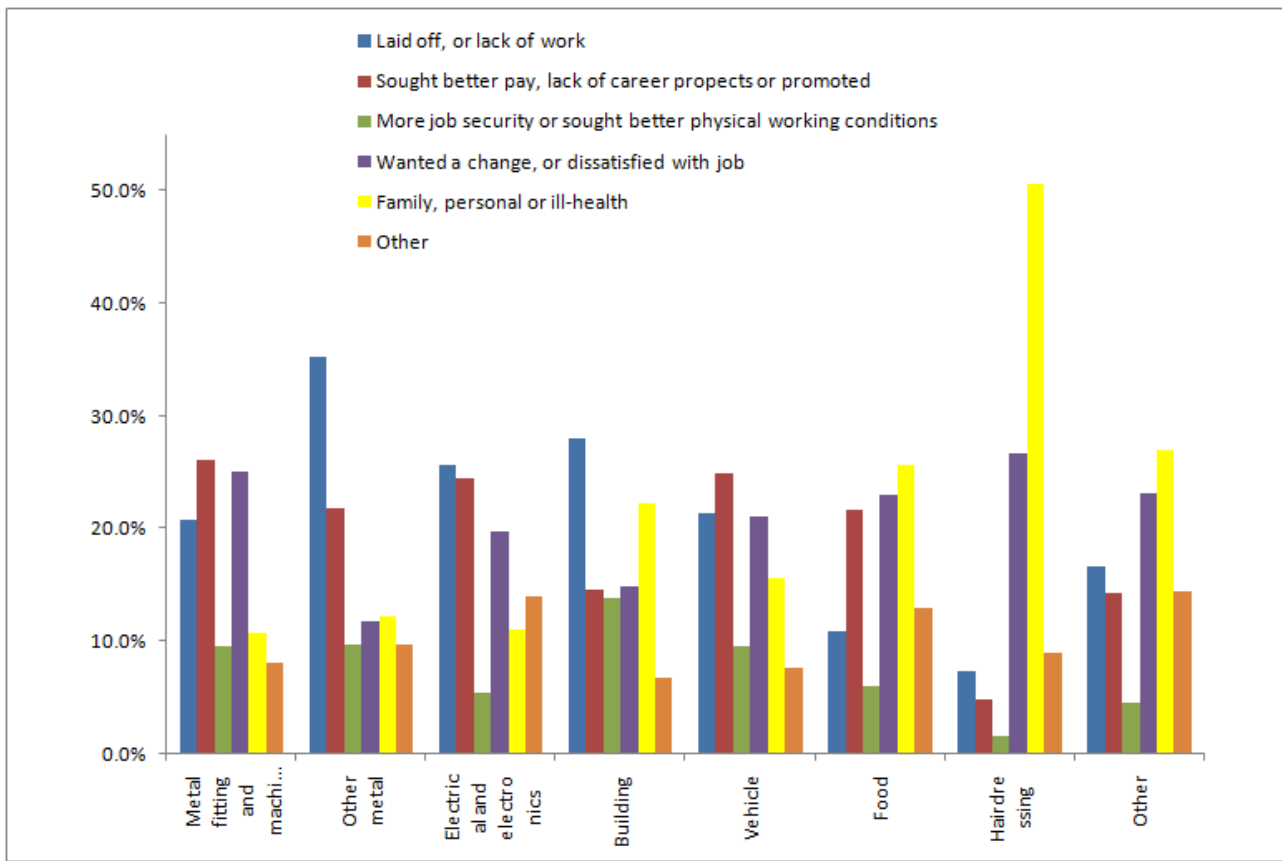


Table 2- Main reasons qualified tradespeople left the automotive trades, 1993

Sought better pay, lack of career prospects or promoted	24.9%
Laid off or lack of work	21.4%
Wanted a change or dissatisfied with job	21.0%
Family, personal or ill health	15.6%
More job security or sought better physical working conditions	9.5%
Other	7.6%
Total	100%

(republished by Borthwick, David and Werner⁵⁹)

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Borthwick, David and Werner⁶⁰ observe that the ranking pattern of reasons for leaving the automotive trades was slightly different to all other trades. Wages were a greater issue for automotive tradespeople than all other trades (24.9% compared to 19% for all tradespeople).

The Victorian Automobile Chamber of Commerce in 2000 reinforces this view, finding that wages were a significant factor in tradespeople’ decisions to stay in their trade or leave: “It was widely held that many tradespeople leaving the industry did so to undertake unrelated work for better wages. The general perception was that, outside of the major dealerships, there was little opportunity for career development

⁵⁹ Borthwick, Jessie; John, David and Werner, Mark, 2000, Evidence of skill shortages in the automotive trades, pg 20

⁶⁰ Ibid, page 20

within the industry. All participant groups, including employers, TAFE teachers, apprentices and trainees acknowledged that wage rates in the industry were a significant factor in deciding to stay in or leave the industry ...”⁶¹

In a report commissioned by DEWR, *Skills in Demand*, by TNS Social Research, low wages were found to be a considerable reason Motor Mechanics leave their trade. Other factors included work conditions and job design. Customer behaviour and market structures were believed to be factors that kept pay rates low due to a crowded market and a market run largely by third parties, i.e. insurance companies and long warranties given by new car companies.⁶²

The 2004 DEWR report *Labour Market for the Trades* also found that the automotive trades had the highest proportion of qualified tradesperson employed in related occupations (rather than their home trade).⁶³

Table 3 - Main reasons qualified tradespeople left the metal fitting and machining trades, 1993

Sought better pay, lack of career prospects or promoted	26.1%
Laid off or lack of work	20.8%
Wanted a change or dissatisfied with job	25.0%
Family, personal or ill health	10.6%
More job security or sought better physical working conditions	9.5%
Other	8.1%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

More than any other trade and well above the all trade average of 19.3%, 26.1% of ex-metal fitting and machining tradespeople had left their home trade to seek better pay or due to promotion or a lack of career prospects. Webster et al also make this observation, attributing the attrition of metals-related tradespeople from their home occupation to the pursuit of better paid, more highly skilled jobs.⁶⁴ They point out that between 1971 and 1996 the proportion of qualified metal tradespeople working in higher skilled jobs rose from 11.9% to 20.3%.⁶⁵

Table 4 - Main reasons qualified tradespeople left the other metal trades, 1993

Sought better pay, lack of career prospects or promoted	21.7%
Laid off or lack of work	35.2%
Wanted a change or dissatisfied with job	11.7%
Family, personal or ill health	12.1%
More job security or sought better physical working conditions	9.6%
Other	9.6%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

⁶¹ Victorian Automobile Chamber of Commerce, 2000, Skill shortages in the retail motor industry, pg 24

⁶² TNS Social Research (DEWR), 2006, Skills in Demand, pg 34

⁶³ DEWR, 2004, Labour Market for the Trades, pg 39

⁶⁴ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pg 23

⁶⁵ Ibid

The other metals trade, perhaps reflecting economic circumstances in the industry, show an unusually high proportion of tradespeople who left their trade due to loss or unavailability of work (35.2% as opposed to the trade average of 21.4%)

Table 5 - Main reasons qualified tradespeople left the electrical and electronics trades, 1993

Sought better pay, lack of career prospects or promoted	24.4%
Laid off or lack of work	25.6%
Wanted a change or dissatisfied with job	19.6%
Family, personal or ill health	11.0%
More job security or sought better physical working conditions	5.4%
Other	14.0%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

The Electrotechnology Working Group reiterates a DEWRB finding that “career progression by electrotechnology tradespeople is a significant component of attrition. Almost two-thirds of the 35% of electrotechnology tradespeople working in a non-trade occupation were employed in more highly skilled occupations ... Of the two-thirds moving to a more highly skilled occupation, they moved to a range of occupations; with building and engineering associate professionals, specialist managers, and managing supervisors being key areas of employment.”⁶⁶

This finding touches on a crucial issue affecting attrition from the trades – the fact that a significant proportion of persons in many trades who leave, do so to take up even more highly skilled occupations. This is a natural and desirable aspect of any labour market that values career progression and lifetime skills acquisition, but could also suggest that external wage signals are stronger than those within the trades labour market because wage adjustments are not occurring as they should ie. trade occupation wages may be artificially low due to imperfections in the labour market for tradespeople.

NCVER discusses this issue in its 2001 report, stating that “It is important to note that the notion of ‘wastage’ from the trades is a misnomer. Wastage is concerned with separation from the trades for reasons of job mobility, retirement or unemployment. Much wastage involves upwards job mobility, with many of those who leave moving to managerial or other similar positions within their trades industry. Hence, the term ‘wastage’ does not capture the real nature of this phenomenon.”⁶⁷

Table 6 - Main reasons qualified tradespeople left the building trades, 1993

Sought better pay, lack of career prospects or promoted	14.5%
Laid off or lack of work	28.0%
Wanted a change or dissatisfied with job	14.9%
Family, personal or ill health	22.2%
More job security or sought better physical working conditions	13.8%
Other	6.7%
Total	100%

⁶⁶ Electrotechnology Working Group, undated, Skill Shortages in Electrotechnology, pg 86

⁶⁷ NCVER, 2001, Australian Apprenticeships: Facts, Fiction and Future, pg xxii

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

The Building and Construction Industry Working Group noted the pattern of reasons given by building tradespeople for leaving their trade and suggests that, in relation to those who ‘wanted a change or were dissatisfied with the job’ this could be evidence of a “desire for less physically demanding work (including not working outside in hot or cold weather).”⁶⁸

As with the electrical and electronics trades, the Working Group also found that “Career progression by construction tradespeople is certainly the reason why many workers leave their occupation. Slightly more than half of the 30 per cent of construction tradespeople working in a non-trade occupation were employed in a more highly skilled occupation. The other half (48%) were, however, employed in a less skilled occupation. Those moving to a more highly skilled occupation moved to a wide range of occupations; with building and construction managers and building associate professionals being a key area of employment. Those moving to lesser skilled occupations also moved to a wide range of occupations, the most important of the lesser skilled occupations being truck drivers, sales representatives, and sales assistants.”⁶⁹ This view is also supported by Webster et al who point out that between 1971 and 1996 the proportion of building tradespeople working in managerial, administrative, professional and technical jobs rose from 9.5% to 21%.⁷⁰

Table 7 - Main reasons qualified tradespeople left the food trades, 1993

Sought better pay, lack of career prospects or promoted	21.6%
Laid off or lack of work	10.9%
Wanted a change or dissatisfied with job	23.0%
Family, personal or ill health	25.7%
More job security or sought better physical working conditions	5.9%
Other	13.0%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

A survey of chefs in the United Kingdom found the main reasons for chef’s exiting their trade included:

- Lacked autonomy when cooking in the kitchen;
- Lack of social life at the weekend;
- Lack of career direction/uncertainty about their future;
- Felt unappreciated and exploited.⁷¹

⁶⁸ Building and Construction Industry Working Group (Australia); Dept of Education, Training and Youth Affairs (DETYA); National Industry Skills Forum (Australia), 2001, Building Brighter Futures: Present and Future Skill Needs in the Building & Construction Industry, pg 68

⁶⁹ Building and Construction Industry Working Group (Australia); Dept of Education, Training and Youth Affairs (DETYA); National Industry Skills Forum (Australia), 2001, Building Brighter Futures: Present and Future Skill Needs in the Building & Construction Industry, pg 67

⁷⁰ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pg 24

⁷¹ Pratten, John and O’Leary, Barbara, 2007, Chef Shortages in the UK, Journal of European Industrial Training, pg 75

Somewhat similarly, in 2001 the Food Trades Skill Shortages Working Group (Australia) of the National Industry Skills Forum found the following reasons for tradespeople leaving the food trades:

- the demanding high-pressure nature of the industry;
- lack of rewards and appreciation;
- stress;
- working conditions.⁷²

Pratten and O’Leary also quote a 2003 study conducted by Pratten in the United Kingdom that found that almost half of apprentices studying to be a chef would never work in the food industry due to:

- low pay and anti-social hours;
- poor physical conditions of work;
- excessive discipline in the kitchen;
- some women complained of sexism;
- promotions took many able chefs away from the cooking which they enjoyed, into the less familiar areas of costing and administration and this caused some to become dissatisfied and their departures led to even greater staff shortages higher up the career ladder.⁷³

Table 8 – Main reasons qualified tradespeople left the hairdressing trade, 1993

Sought better pay, lack of career prospects or promoted	4.8%
Laid off or lack of work	7.3%
Wanted a change or dissatisfied with job	26.7%
Family, personal or ill health	50.6%
More job security or sought better physical working conditions	1.6%
Other	8.9%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 9 – Main reasons qualified tradespeople left all other trades, 1993

Sought better pay, lack of career prospects or promoted	14.3%
Laid off or lack of work	16.7%
Wanted a change or dissatisfied with job	23.1%
Family, personal or ill health	27.0%
More job security or sought better physical working conditions	4.6%
Other	14.4%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

⁷² Food Trades Skill Shortages Working Group (Australia), National Industry Skills Forum, Department of Education, Training and Youth Affairs, 2001, A Recipe for Change: the Future of Commercial Cookery in Australia, pg 29

⁷³ Pratten, J and O’leary, B, 2007, Chef Shortages in the UK, Journal of European Industrial Training, pg 69

Table 10 – Main reasons qualified tradespeople left all trades, 1993

Sought better pay, lack of career prospects or promoted	19.3%
Laid off or lack of work	21.4%
Wanted a change or dissatisfied with job	20.8%
Family, personal or ill health	20.4%
More job security or sought better physical working conditions	8.0%
Other	10.1%
Total	100%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Conclusion – Factors contributing to attrition from the trades

There is considerable evidence, although much of it is now quite dated, to suggest that the same reasons for qualified tradespeople leaving their home trade are at work within individual trades but to varying degrees. On average, tradespeople move out of their home trade for four key reasons:

- better pay or a promotion;
- job loss or lack of work (a factor likely to be at work most intensively during times of low economic activity and higher unemployment);
- desire to do a different job;
- family or personal reasons.⁷⁴

However, data at the level of individual trade groups highlights the extent to which these motivating factors work with differing intensity between groups. Hairdressing, a female dominated occupation, shows (comparatively) very little attrition due to a desire to increase income or move into a more highly skilled job (4.8% compared to the trade average of 19.3%).⁷⁵ Instead, more than half of qualified hairdressers no longer working in their trade left due to family, health or personal reasons, suggesting a switch from employment to child rearing and/or unpaid domestic work.⁷⁶

Most importantly, the research on the causes of attrition from the trades highlights the extent to which it is due to a mix of positive and less positive factors. Promotion and increased pay (if one accepts that higher levels of pay are an expression of labour market demand) are part of the natural order of the labour market and an essential aspect of a workforce that continues to acquire higher and higher levels of skill over time and that responds to labour market wage signals. Unfortunately, the issue of pay is somewhat confused by the fact that tradespeople appear to experience relatively flat earning profiles compared to professional occupations. Choosing to leave a home trade in search of greater pay may actually be an expression of poor wage adjustments within the trades labour market rather than a direct response to wage signals in the broader labour market. This is an area that appears appropriate for further research, particularly in terms of determining whether or not wage adjustments and signals are operating appropriately in the trades labour market.

⁷⁴ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

⁷⁵ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

⁷⁶ Ibid

However, the fact that over 40% of tradespeople who left their home trade did so due to job loss or lack of work (21.4%) (ie, involuntary attrition) or due to job dissatisfaction (20.8%)⁷⁷ is cause for concern. This represents a potentially avoidable and undesirable drain of skills from the Australian labour market based on factors that may be short-term (lack of jobs) or partly controllable (job dissatisfaction). As mentioned earlier, data in this area is generally out of date and there may be potential for updated research focussing on the reasons for tradespeople leaving their home trade, what might entice them back, and what would have convinced them to remain in their home trade in the first place.

Destinations of Tradespeople

As with rates of attrition from the trades, there is very little Australian and international literature exploring where tradespeople go when they leave their home trade.

At the very broadest level, a United States study found that older workers (aged 45 years and above) who change occupations tend to move into substantially different jobs and industries. They are more likely to be self-employed, work part-time and keep flexible hours in their new jobs, suggesting a deliberate lifestyle change.⁷⁸ Research cited earlier in this literature review also touches on the issue of the destinations of tradespeople who leave their home occupations, pointing to the significant proportion (around 20%) who left to take up better paid jobs or a promotion (usually in a managerial, administrative or more technical role).^{79 80}

NCVER found that 22% of persons with trade qualifications had left their home trade to take up a higher skilled job.⁸¹ However, NCVER also found that just over a quarter had moved into a medium or lower-skilled job although the proportion moving into labouring jobs had declined since 1989.⁸² This correlates with the findings of Webster et al⁸³ and the pervasive view in the literature that career paths for tradespeople have opened up over the past 20 to 30 years, creating higher paid job opportunities while, in tandem, semi-skilled pay rates have declined.

Strategies for Reducing Attrition from the Trades

More so than any other aspect of research into attrition from the trades, the issue of strategies to reduce attrition has received the most research and policy development attention over the past 12 to 15 years. In part, this is due to a growing recognition over the past decade that the ageing of Australia's population is accelerating the rate of loss of skilled workers from the labour market without a compensating increase in skilling of younger workers. It is also likely to reflect increased interest in tapping unused trade skills at a time when Australia's economy has grown rapidly, the labour market has tightened to historic levels and skill shortages are forcing the nation to look creatively for skill supply outside of traditional education and training pathways aimed mainly at younger people.

⁷⁷ Ibid

⁷⁸ Johnson, R; Kawachi, J, 2007, Job Change at Older Ages: effects on wages, benefits and other job attributes, pg 27

⁷⁹ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pgs 22 - 25

⁸⁰ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

⁸¹ NCVER, 2001, Australian Apprenticeships: Facts, Fiction and Future, pg 152

⁸² Ibid

⁸³ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pgs 22 - 25

The Loss of Older Workers

A significant amount of literature focuses primarily on the issue of attrition arising from retirement from the workforce or the inability of older workers to continue participating in the labour market for a variety of reasons (age discrimination and public policy disincentives).^{84 85 86}

Lundberg and Marshallsay argue that older workers, in fact, are usually keen to continue working but are discouraged from doing so due to discrimination, disincentives and the impact of age-related stereotypes on the attitudes of younger workers.⁸⁷ 72% of construction workers included in their study indicated they will either need or may choose to continue working beyond retirement age, and only one in five said they would prefer to undertake different work.⁸⁸ For many of the older workers surveyed, travel was a future high priority, suggesting that more flexible working arrangements may motivate older workers to continue working. Family and domestic activities also feature strongly in older worker's retirement plans which again reinforces the need for flexibility in job design if older trade workers are to be encouraged to continue working⁸⁹

To quote: "... the research indicated that the policy priority is to address the perceived obstacles, constraints and disincentives that deter or prevent older workers from working beyond their 'normal' retirement age. A substantial majority of older workers believes that older workers face discrimination in the workforce, but few of them report discriminatory attitudes from their colleagues and employers. Older workers strongly supported measures against age discrimination and age-biased stereotypes that limit opportunities for older workers. Rules and regulations relating to superannuation and workcover policies are perceived to discriminate against older workers and act as disincentives for older people to continue working. Some older workers see themselves as needing fairer access to training programs to enable them to update their skills and keep current with developments in technology. Training in computing skills, updating of existing skills, and professional development training programs designed to enhance specific skills in particular fields are considered important."⁹⁰

United States researchers Padgett, Maldonado and Saddler discuss the need for a flexible work situation for older workers, job-sharing and mentoring programs that include a phased retirement plan, and offer a range of strategies for inducing increased retention across all worker age groups including:

- flexible scheduling
- benefit packages
- tuition reimbursement
- training
- feedback, evaluations and job promotions

⁸⁴ Lundberg, David and Marshallsay, Zaniah (NCVER), 2007, Older worker's perspectives on training and retention of older workers, pg 8

⁸⁵ Padgett VL; Maldonado, C and Saddler, S, 2006, Retention in the Workplace Today: Are We Ready for Generation Y?

⁸⁶ Business Council of Australia, 2007, Age Can Work: a business guide for supporting older workers

⁸⁷ Lundberg, David and Marshallsay, Zaniah (NCVER), 2007, Older worker's perspectives on training and retention of older workers, pg 8

⁸⁸ Ibid, pgs 8 - 9

⁸⁹ Ibid, pgs 8 - 9

⁹⁰ Lundberg, David and Marshallsay, Zaniah (NCVER), 2007, Older worker's perspectives on training and retention of older workers, pgs 10 - 11

- starting pay higher than minimum wage
- employee bonuses
- special incentives and perks
- casual dress environment
- fun atmosphere
- special events
- opportunities for community involvement
- mentoring.⁹¹

In the journal *Business NZ*, proposed strategies to address skill shortages include changes to employment laws to reduce the fear of employing older workers (amongst a number of groups)⁹². This recommendation is similar in nature to legislative action taken recently in Australia to remove unfair dismissal laws that were considered by the then-Federal Government to inhibit employment growth amongst small to medium enterprises. The Business Council of Australia recommends a commitment to life-long learning, phased retirement and the capacity for individuals to re-engage with the workforce at varying levels of intensity according to their personal needs and preferences.⁹³

Reducing or Responding to Attrition from the Trades

In their analysis of the automotive trades, Borthwick, John and Werner found that 44% of qualified automotive tradespeople who had left their trades would consider returning if their pay or career prospects were improved (compared to an all of trade average of 46%).⁹⁴ Similarly, the Electrotechnology Working Group reports that the ABS found that 54% of electrical and electronics tradespeople who have left their home trade would consider returning if there were jobs available – only 17% indicated that better pay, a promotion or improved career prospects would entice them back into trade work.⁹⁵

Webster et al found that high rates of attrition are often found in occupations where there are comparatively few prospects for advancement and the main avenue for job variety and challenge is acquired through changing jobs or occupations.⁹⁶ This is consistent with the ABS finding that a significant proportion of tradespeople exit their trade for pay and career reasons. It also reinforces the view that trades with flat occupational and career structures are likely to suffer the most attrition because tradespeople who want improved pay or advancement have little choice but to exit their trade in order to pursue these goals.

The ABS *Career Paths of Persons With Trade Qualifications Australia 1993* publication summarises the main factors given by tradespeople who have left their home trade that would influence them to return.

⁹¹ Padget, VL; Maldondao, C and Saddler, S, 2006, Retention in the Workplace Today: Are We Ready for Generation Y?

⁹² Business NZ, 2006, Skills Perspectives pg 8 - 19

⁹³ Business Council of Australia, 2007, Age Can Work: A Business Guide for Supporting Older Workers, pg 12

⁹⁴ Borthwick, Jessie; John, David and Werner, Mark, 2000, Evidence of skill shortages in the automotive trades, pg 21

⁹⁵ Electrotechnology Working Group, undated, Skill Shortages in Electrotechnology, pg 87

⁹⁶ Webster, Elizabeth; Dockery Mike; Bainger, Thea and Kelly, Ross, 2001, Training for the Skilled Trades in Australia: 1980 – 2000, pg 13

Figure 2 - Proportion of trade qualified workers who would and would not consider returning to their home trade (1993) (Australia)

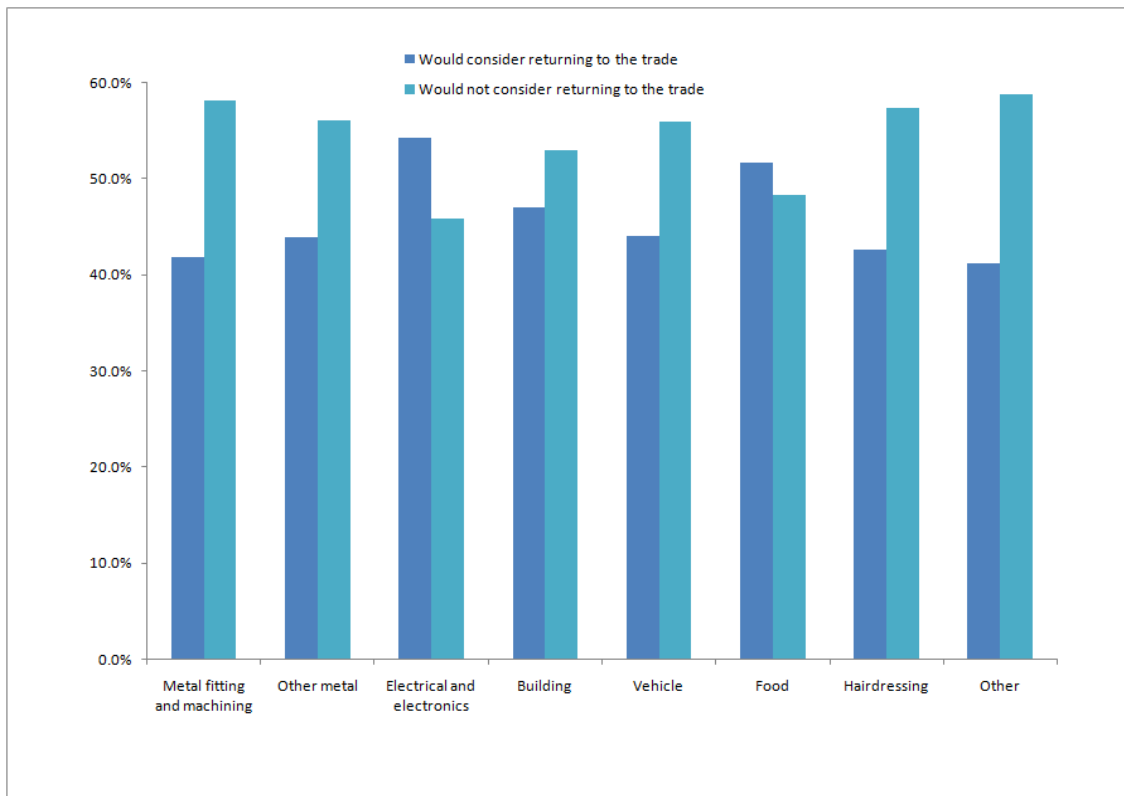


Figure 3 - Proportion of trade qualified workers, by trade qualification, who would and would not consider returning to their home trade (1993) (Australia)

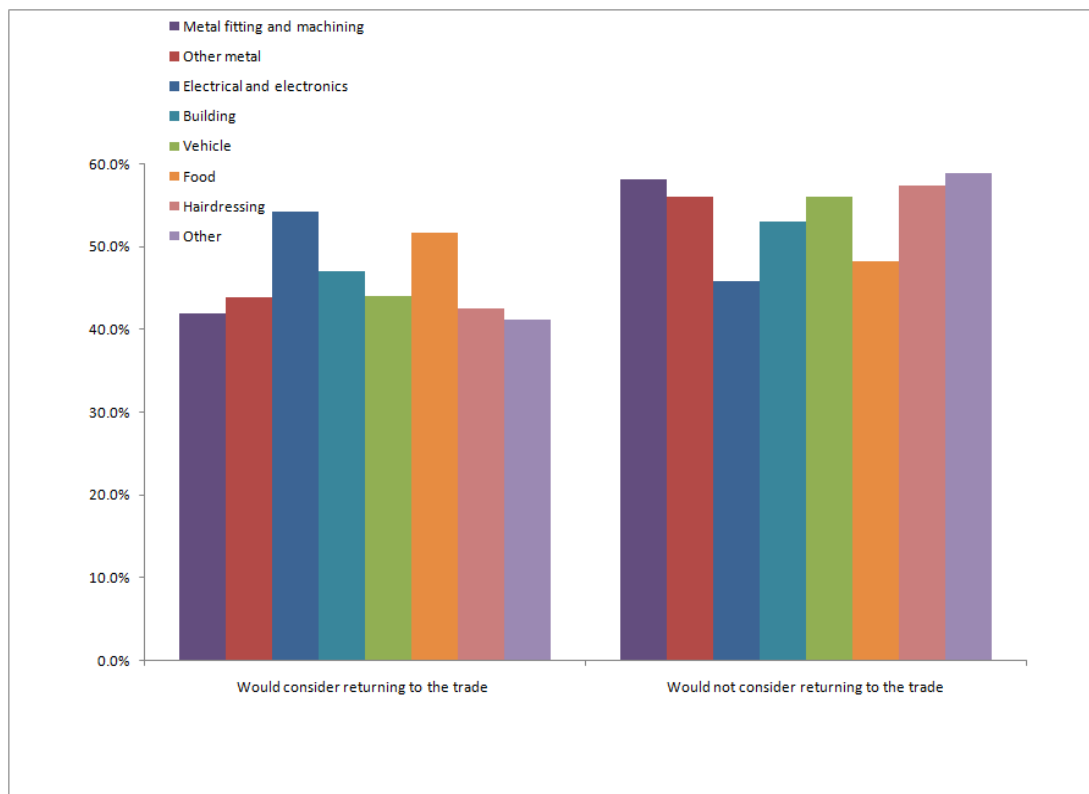


Figure 4 - Proportion of trade qualified workers, by trade qualification, who would consider returning to their home trade (1993) (Australia)

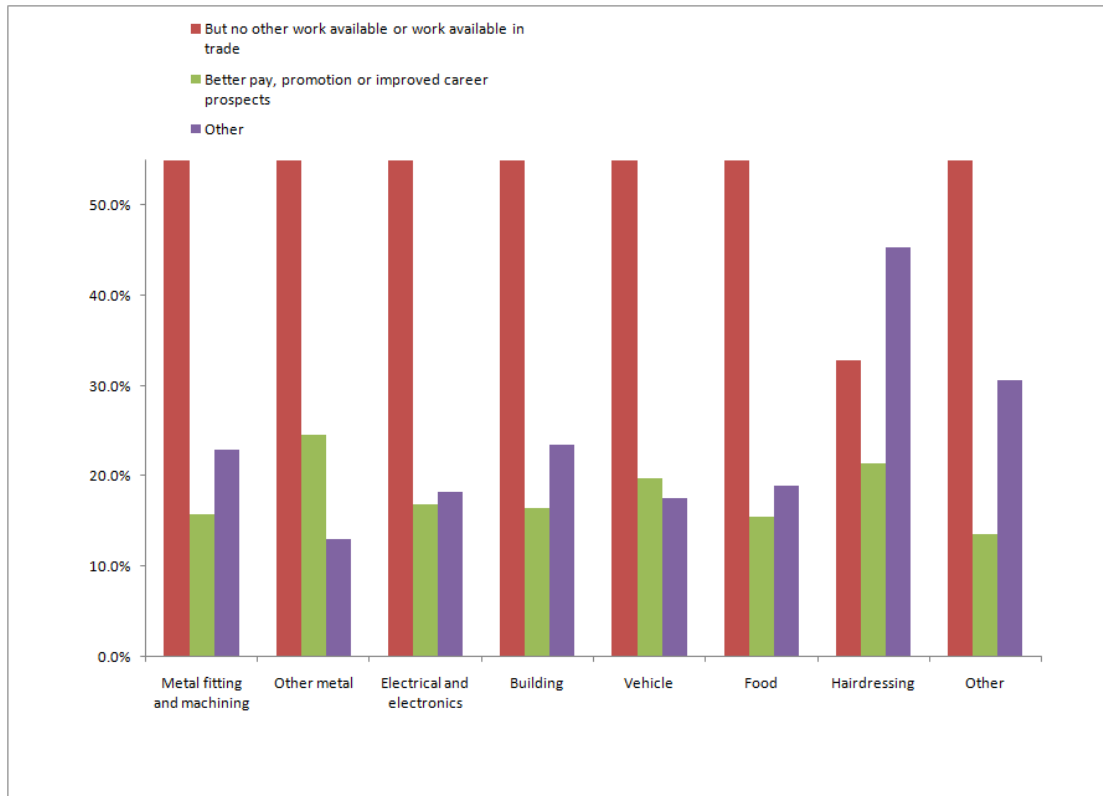


Table 11 - Main factor that would enable return to metal fitting and machining trade

(a) Would consider returning to the trade	41.9%
But no work available	25.7%
For better pay, promotion, improved career prospects	6.6%
Other	9.6%
(b) Would not consider returning to the trade	58.1%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 12 - Main factor that would enable return to other metal trades

(a) Would consider returning to the trade	43.9%
But no work available	27.5%
For better pay, promotion, improved career prospects	10.8%
Other	5.7%
(b) Would not consider returning to the trade	56.1%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 13 - Main factor that would enable return to electrical and electronics trades

(a) Would consider returning to the trade	54.2%
But no work available	35.3%
For better pay, promotion, improved career prospects	9.1%
Other	9.9%
(b) Would not consider returning to the trade	45.8%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 14 - Main factor that would enable return to building trades

(a) Would consider returning to the trade	47.0%
But no work available	28.3%
For better pay, promotion, improved career prospects	7.7%
Other	11.0%
(b) Would not consider returning to the trade	53.0%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 15 - Main factor that would enable return to vehicle trades

(a) Would consider returning to the trade	44.0%
But no work available	27.6%
For better pay, promotion, improved career prospects	8.7%
Other	7.7%
(b) Would not consider returning to the trade	56.0%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 16 - Main factor that would enable return to food trades

(a) Would consider returning to the trade	51.7%
But no work available	33.9%
For better pay, promotion, improved career prospects	8.0%
Other	9.8%
(b) Would not consider returning to the trade	48.3%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 17 - Main factor that would enable return to hairdressing trades

(a) Would consider returning to the trade	42.6%
But no work available	14.0%
For better pay, promotion, improved career prospects	9.1%
Other	19.3%
(b) Would not consider returning to the trade	57.4%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 18 - Main factor that would enable return to other trades

(a) Would consider returning to the trade	41.2%
But no work available	23.0%
For better pay, promotion, improved career prospects	5.6%
Other	12.6%
(b) Would not consider returning to the trade	58.8%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Table 19 - Main factor that would enable return to all trades

(a) Would consider returning to the trade	45.5%
But no work available	27.0%
For better pay, promotion, improved career prospects	7.8%
Other	10.7%
(b) Would not consider returning to the trade	54.5%
Total	100.0%

Source: ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

Conclusion - Strategies for Reducing Attrition from the Trades

Literature that explores the possibility of reducing or reversing attrition from the trades is generally split into two categories – that dealing with retirement-related attrition, and that identifying factors which might influence tradespeople back to their home occupation.

Research about attrition resulting from retirement is much more recent in nature. This is not surprising given the increased emphasis over the past decade on exploring ways in which the ageing of Australia's workforce can be more effectively managed. In the main, the literature reaches conclusions that are the same across all occupations – primarily that retirement can be delayed if workers are offered more flexible, lifestyle accommodating work options that allow them to balance the pursuit of both personal and professional goals. Most of these options involve the use of part-time work to allow for a greater, self-driven emphasis on the pursuit of personal and lifestyle goals.

In terms of literature that focuses on how tradespeople might be attracted back to their home occupations, the research is dated and almost exclusively (in Australia) relies on the 1994 ABS research publication. Most interestingly, improved pay, a promotion or better career prospects are generally the least likely to be

successful incentives to return to the trade, according to tradespeople who have left their home trade. Unfortunately, the high proportion of tradespeople who say that they would return to their trade but cannot due to a lack of work suggests that the ABS survey work was undertaken during a time of much higher than current unemployment. It is likely that a similar survey conducted now would yield very different results.

As with all other aspects of attrition from the trades, there are differences between trades in terms of what would influence ex-tradespeople to return. However, these are nowhere near as marked as, for example, differences between trades tradespeople in terms of reasons for leaving, suggesting either an overly blunt research tool or an unexpectedly high level of agreement amongst tradespeople on what would attract them to return to their trade. Unfortunately, the data is not available to analyse this issue further.

Attrition from Apprenticeships

Research into attrition from apprenticeships has received considerably more attention over the past 12 to 15 years compared to attrition from the trades. This appears to be an due to a recent, strong research focus on education and training non-completion, not just in Australia but internationally.

Rates of Apprentice Attrition

International

Internationally, rates of attrition recorded for apprenticeships and vocational courses incorporating on and off-the-job learning vary, but tend to be in the order of 40% to 50% of commencing students.

In 2003 in the United Kingdom, Smith found that drop-out rates from NQV courses tended to peak at about three months into training and, in total, were about 52% for Level 2 courses and 47% for Level 3 courses (NQV level 1 is a semi-skilled attainment, NQV 2 is a skilled attainment and NQV 3 is a full trade or technical attainment, corresponding to an Australian Certificate III/IV).⁹⁷ Pratten and O'Leary quote a 2003 study conducted by Pratten in the United Kingdom that found that almost half of apprentices studying to be a chef would never actually work in their destination industry.⁹⁸

A 2004 study of Scottish apprentices aged between 16 and 24 years found that completion rates ranged between 48% and 51% between 2000/01 and 2002/03, suggesting a relatively stable pattern of completion and non-completion. Unlike many other studies, the authors found that age had no bearing on the likelihood of completion.⁹⁹

In the United States, a 2003 study found that only 39% of all construction apprentices completed their training and gained their qualification¹⁰⁰, 47% cancelled their training, the average duration of a cancelled

⁹⁷ Smith, V, 2003, Raising Retention and Achievement in Work-Based Learning (Education and Training Journal), pg 275

⁹⁸ Pratten, J and O'leary, B, 2007, Chef Shortages in the UK, Journal of European Industrial Training, pg 69

⁹⁹ Gallacher, Jim; Whittaker, Susan; Crossan, Beth and Mills, Vince, 2004, Modern Apprenticeships: Improving Completion Rates, pgs ii to iii

¹⁰⁰ Bilginsoy, C, 2003, The Hazards of Training: Attrition and Retention in Construction Industry Apprenticeship Programs (Industrial and Labor Relations Review), pg 58

apprenticeship was 27 months and the average length of a completed apprenticeship was 49 months.¹⁰¹ Another United States study found that completion rates for construction apprentices employed in 30 states between 1995 and 2003 were below 40% (although significant variations existed according to personal characteristics such as ethnicity and gender).¹⁰² Hudson, Kienzl and Diehl found that about 40% of occupational course students (essentially vocational education and training students) left their course before gaining their qualification.¹⁰³

Australia

In Australia, a number of significant publications have appeared over the past 12 to 15 years dealing with the issue of attrition from apprenticeships (and/or traineeships). A selection has been synthesised below to give an idea of the findings of various studies.

Katrina Ball found, in 2004, that completion rates for apprentices and trainees:

- are higher for females (47% for females to 45% for males);
- are much lower for indigenous Australians (30% compared to 46% for other Australians);
- are higher for apprentices and trainees living in non-capital city metropolitan locations and rural areas;
- are higher for full-time apprentices and trainees compared to part-timers;
- vary considerably across occupational groups (and within these other variables were seen to be at work including age and labour mobility);
- are much lower for apprentices and trainees aiming for AQF 1 and 2 qualification;
- are higher for govt-employed apprentices and trainees compared to those in the private sector or employed by group training schemes.¹⁰⁴

In a further study focusing on apprentices and trainees commencing in 1999, Ball and John found that:

- the completion rate was 52% for those on their original contract, rising to 55% after taking into account those who had recommenced training for the same qualification with a different employer, and reaching 60% after taking into account those who had changed both qualification and employer;
- completion rates have declined for traditional apprentices from 71% for the cohort of 1995 to 60% for the cohort of 1999 (same trade but different employer to that of their original contract);
- completion rates have increased for those who were not traditional apprentices from 47% for the cohort of 1995 to 52% for the cohort of 1999 (same trade but different employer to that of their original contract);
- the likelihood of completion is influenced by personal characteristics such as age, Indigenous status, presence of a disability, highest school level completed and residential location.¹⁰⁵

¹⁰¹ Ibid, pg 59

¹⁰² Berik, G and Biliginsoy, C, 2006, Still a wedge in the door: women training for the construction trades in the US (International Journal of Manpower), pg 330

¹⁰³ Hudson, L; Kienzl, H and Diehl, J, 2007, Students entering and leaving postsecondary occupational education: 1995-2001: Statistical analysis report, pg 46

¹⁰⁴ Ball, Katrina, 2004, Factors Influencing Completion of Apprenticeships and Traineeships, pgs 10 -11

¹⁰⁵ Ball, K and John, David, 2005, Apprentice and Trainee Completion rates, pg 5

Ray, Beswick, Lawson, O'Brien and Madigan found in 2000, while analysing 1994/95 and 1995/96 apprenticeship commencements that attrition after one year of training was low, between 13 and 16 % for commencements in 1994/95 and 1995/96. After two years of training, the attrition rate for the 1994–95 intake was around 20 % and by two and a half years this had risen to almost 22 %. Constructing projections based on the limited data available, they suggest a possible upper limit of approximately 30% attrition and a possible lower limit of approximately 23 % attrition four years after commencement for the groups under investigation. However, their research also indicated that the highest rate of attrition occurs during the first three months of training. After six months of training, the rate at which apprentices leave slows considerably.¹⁰⁶

NCVER's 2002 publication *Outcomes and Completions of New Apprenticeships* found that males were more likely to complete an apprenticeship than females, although some studies found that the reverse was true for traineeships. Analysis of NCVER 2000 data also suggested that females were over-represented among non-completers (comprising 42% of the non-completer sample group, but only 31% of total in-training numbers in 2000) although this conflicts with some other Australian and international studies which suggest the reverse. Analysis of 2000 NCVER data also found that only those aged 23 years and above were over-represented among non-completers, contrary to other studies which found that those aged 19 years and above were over-represented amongst non-completers.¹⁰⁷

As with other studies, the NCVER report found that rates of non-completion of apprenticeships were higher amongst Indigenous people, those who spoke a language other than English at home and those who were engaged part-time. Similarly, apprentices and trainees who had completed their secondary schooling to year 12 were more likely to complete their contract of training than those who completed only Year 10 secondary schooling.¹⁰⁸

Karmel and Ong modelled Australian apprenticeship completion rates using historical data and found that for young men around 50% of apprenticeships are not completed.¹⁰⁹

Cully and Curtain found in 2001 that:

- most withdrawals and cancellations occur early in the life of the training contract and then the proportion diminishes over time, as fewer and fewer remain;
- 42% of trainees stopped their training before they were a quarter way through and a further 25% had done so by the halfway mark;
- 38% of apprentices stopped their training before they were a quarter way through;
- between 16% and 20% of non-completions were initiated by employers.¹¹⁰

¹⁰⁶ Ray, David, Beswick, Wayne, Lawson, Christopher, O'Brien, Clare and Madigan, Sharyn (DEST), 2000, Attrition in Apprenticeships, pg 3

¹⁰⁷ NCVER, 2002, Outcomes and Completions of New Apprenticeships: Research At A Glance, pg 8

¹⁰⁸ Ibid, pg 9

¹⁰⁹ Karmel, Tom and Koon, Ong, 2007, Will we run out of young men? Implications of the ageing of the population for the trades in Australia, pg 9

¹¹⁰ Cully, M and Curtain, R, 2001, Reasons for New Apprentices' Non-Completions, pgs 21 - 24

In Western Australia, an analysis carried out for the WA Skills Formation Taskforce found that 71% of apprentices complete their training.¹¹¹

In Queensland, a 2007 report for the Department of Employment and Training and Construction Training Queensland found an overall cancellation rate amongst construction apprentices of 44.3%.¹¹² The report also proportionately breaks down cancellations by year of apprenticeship as follows:

- Year 1 – accounting for 47.3% of cancellations
- Year 2 – accounting for 30.5% of cancellations
- Year 3 – accounting for 16.1% of cancellations
- Year 4 – accounting for 6.1% of cancellations

These results show that 77.8% of cancellations occur in the first 2 years of the apprenticeship.¹¹³

Conclusion – Rates of Attrition from Apprenticeships

A comparison between international and Australian research and literature on rates of attrition amongst apprentices suggests similar experiences. Studies conducted in a number of countries, including Australia, all suggest non-completion rates amongst apprentices around the 40% to 50% mark, indicating that Australia's experience with non-completions is not unique but shared across the globe. When compared with some research undertaken into non-completion in the Australian university sector (which Martin, Maclachlan and Karmel¹¹⁴ estimate at around 28% to 29% for 1992 and 1993 commencing undergraduate degree cohorts and Shah and Burke¹¹⁵ estimate at 37% and 31% for undergraduate participants commencing at age 18 and 19 respectively), apprenticeship courses appear to fare somewhat worse in terms of completion rates.

Although the research is mixed, several key themes recur throughout Australian and international literature:

- non-completion rates are generally higher for socio-economic disadvantaged groups like Indigenous persons, people with English as a second language and part-timers;
- non-completion rates slow as the time from commencement lengthens;
- non-completion rates have been on the increase in Australia;
- gender is a determining factor of completion rates although the literature is mixed in terms of the impact of individual gender on training outcomes;
- age is also a factor that influences the likelihood of non-completion but, again, the findings are mixed with some studies attributing higher non-completion rates to apprentices aged 19 years and below and while others attribute higher rates to older apprentices.

¹¹¹ WA Skills Formation Taskforce, 2006, *Careers for life: a dynamic and responsive apprenticeship and traineeship system*, pg 9

¹¹² Deborah Wilson Consulting Services, 2007, *Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply*, pg5

¹¹³ *Ibid*, pg 9

¹¹⁴ Martin, Y.M., Maclachlan, M. & Karmel, T. (2001). *Undergraduate completion rates: An update*

¹¹⁵ Shah, C. & Burke, G. (1996). *Student flows in Australian higher education*, pg 47

While the literature presents some consistent findings, there is evidence that the multiplicity of methodologies used to calculate completion rates is creating some confusion. Different methodologies return different results in terms of rates of attrition from apprenticeships and attribute varying levels of importance to personal characteristics in determining the likelihood of attrition. It is likely that Australia, at least, could benefit from a single, accepted, authoritative methodology for determining completion rates amongst apprentices.

Reasons for Apprentice Attrition

The reasons for apprenticeship non-completion have received considerable research attention in Australia over the past decade, presumably in response to concerns about long-term insufficient levels of supply to the trades in the context of a strong, consistently growing economy. This has occurred within the context of a broader focus on non-completions across all vocational education and training courses.

General

Victor Callan's 2005 publication *Why Do Students Leave?* quotes the results of a survey of 508 non-completing VET students in Queensland which cited the following reasons:

1. the inflexibility of the course in terms of its time of delivery (15.7%);
2. the content of the course did not match my needs (18.5);%
3. the poor quality of the teaching staff (20.9%);
4. teachers did not have relevant industry experience (4.3%);
5. my family situation (for example having a young family) (16.8%);
6. I got a job (9.0%);
7. could not fit the course into the demands of my job (20.0%);
8. the workload of the course (11.6%);
9. my financial situation (9.9%).¹¹⁶

More broadly, the NCVET 2002 analysis of the annual Student Outcomes Survey found that the main reasons given by module completers who did not continue their TAFE training were: 'the training was not what I expected'; 'the training did not meet my plans'; or it was 'not flexible enough'.¹¹⁷ Callan also found that teachers at TAFE held a view that many VET students who had left school before completing Year 10 were unprepared for further studies – "Among the personal factors at work, some teachers and administrators believed that, currently, the selection process was allowing entry to some students 'who were doomed to fail'. Students had a Year 10 education or less, and they were not prepared for the demands in TAFE of having to be self-motivated and self-directed learners in order to succeed. They felt that such students enrolled with little understanding about how difficult some courses will be. Teachers felt that further support needed to be given to such students, especially during their initial weeks in the institution to help them to make the transition to being a more independent learner."¹¹⁸

¹¹⁶ Callan, Victor (NCVER), 2005, *Why Do Students Leave?*, pg 20

¹¹⁷ *Ibid*, pg 8

¹¹⁸ *Ibid*, pg 16

In the United States, researchers have found similar reasons for students failing or choosing not to complete a VET course. Hudson, Kienzl and Diehl found the three most common reasons given by non-completers to be job or financial demands, family reasons or moving to another State or city.¹¹⁹ At a more detailed level, their study, based on a longitudinal student survey, found students in the United States gave similar reasons for non-completion to those in Australia:

- dissatisfaction or academic problems (2%);
- done taking desired classes (3%);
- family demands (6%);
- job or financial demands (14%);
- moved to another city or state (6%);
- other/unknown reasons (e.g., taking time off, pursuing other interests, or not reported).¹²⁰

A 2007 study in the United Kingdom , again, gives similar reasons for VET students not completing their course of training, as follows:

- being unhappy with the course choice or with the quality of the teaching/training were the most common (32%);
- followed by circumstantial reasons (28%);
- and time/workload issues (20%);
- the most common single reason was discovering that the course was not what they wanted to do after all or changing their mind about it half way through (cited by 14%);
- and poor quality teaching and the course not being at the right level (each cited by 11%).¹²¹

In a study of Victorian and Western Australian VET students in 2002, Grant found that:

- short courses have higher completion rates and long courses have lower completion rates;
- courses with more choice (i.e. more electives) have lower completion rates;
- those whose main reason for enrolling is to acquire skills are less likely to complete a course compared to those who enrol to get a job;
- overall, those who had not completed the course were far less likely to have achieved their reason for enrolling in the first place;
- organisational difficulties were often cited by students as important reasons for non-completion;
- those who change jobs are less likely to complete the course in which they enrolled.¹²²

Apprentices

As with VET students generally, apprentices offer a variety of reasons for not completing their training. The WA Skills Formation Taskforce found in 2006 that “There are many factors which impact on the attrition of

¹¹⁹ Hudson, L, Kienzl, G, and Diehl, J, 2007, Students entering and leaving postsecondary occupational education: 1995-2001: Statistical analysis report, pg viii

¹²⁰ Ibid, pg 47

¹²¹ Simm, Claire; Page, Rosie and Miller, Linda, 2007, Reasons for early leaving from further education and work-based learning courses

¹²² Grant, Peter (NCVER), 2002, Staying on Course

apprentices and trainees, such as: low wages; lack of support or mentoring/coaching; dissatisfaction in the workplace; and training not meeting expectations or perceptions.”¹²³ Cully and Curtain similarly found that apprentices failed to complete their contract of training because they no longer wanted to work in that job, they disliked their employer or his/her management style, were dismissed or made redundant or left to take up a different apprenticeship.¹²⁴ Cully and Curtain also found that the view which drew the greatest level of agreement was that the respondent was being treated as cheap labour and that a significant proportion disliked other aspects of the work , such as the level of pressure and the prevalence of bullying.¹²⁵

All these reasons are identified repeatedly in recent literature about why apprentices do not complete their contract of training (see, for example, NCVET¹²⁶, Building and Construction Industry Working Group¹²⁷, NCVET¹²⁸, Deborah Wilson Consulting Services¹²⁹).

The work undertaken by Deborah Wilson Consulting Services is of particular interest because it explores apprentice non-completion from the perspective of employers as well as apprentices, and in considerable detail. Apprentices identified a range of reasons for the cancellation of their apprenticeship:

- conflict with the employer including mutual agreement that the apprenticeship was not working out (mentioned by 20.0% of apprentices);
- dissatisfaction with pay levels and pay disputes (18.1%);
- a lack of work or a downturn in the industry (10.6%);
- not enough training being done (9.4%);
- the apprentice decided they were not interested in the apprenticeship (8.3%);
- the company stopped operating or the employer retired (7.9%);
- the apprentice received a better job offer (6.8%);
- the apprentice could not do the job or was not suited to the job (4.9%);
- the apprentice moved to another location (3.4%);
- the apprentice had to travel too far to work (3.4%);
- the apprentice wanted to work in a different profession (3.0%);
- health concerns (3.0%).

Other reasons why apprentices cancelled their apprenticeships included:

- injury;
- not liking the hours;
- being treated as cheap labour;

¹²³ WA Skills Formation Taskforce, 2006, Careers for life: a dynamic and responsive apprenticeship and traineeship system, pg 9

¹²⁴ Cully, Mark and Curtain, Richard (NCVER), 2001, Reasons for New Apprentices' Non-Completions, pg 22

¹²⁵ Ibid, pgs 22 - 23

¹²⁶ NCVET, 2002, Outcomes and Completions of New Apprenticeships: Research At A Glance, pg 6

¹²⁷ Building and Construction Industry Working Group (Australia); Australia. Dept of Education, Training and Youth Affairs (DETYA); National Industry Skills Forum (Australia), 2001, Building brighter futures: present and future skill needs in the building & construction industry, pg 97

¹²⁸ NCVET, 2001, Australian apprenticeships: at a glance, pg 123

¹²⁹ Deborah Wilson Consulting Services, 2007, Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply, pg 1

- a fear of heights;
- not having the correct tools;
- problems at the worksite;
- and an unfriendly or abusive work environment.¹³⁰

Employers, on the other hand, cited the following reasons for apprenticeship cancellations:

- The apprentice was not interested in the apprenticeship or did not want to continue with the apprenticeship (mentioned 33.5% of employers);
- The apprentice has personal problems (17.3%);
- Apprentice dissatisfaction with pay levels (16.2%);
- The apprentice could not do the job or was not suited to the job (14.2%);
- The apprentice was unreliable or did not turn up for work on time (9.6%);
- The apprentice moved to a new location (7.6%);
- The apprentice wanted to work in a different profession (7.1%);
- The apprentice received a better job offer (7.1%);
- The apprentice had a lazy attitude (4.1%);
- A lack of work or a downturn in the industry (3.6%);
- Cancellation by mutual agreement - the apprenticeship was not working or there was personal conflict (3.0%);
- The apprentice had health concerns (3.0%).

Other reasons for cancelling the apprenticeship included:

- the apprentice not attending training;
- the apprentice not wanting to learn;
- theft;
- injury;
- lack of transport;
- failing training or unable to cope with training;
- turning up drunk or hung-over;
- the employer could not afford to employ the apprentice;
- taking too much time off; and
- apprentices having unrealistic expectations of the industry.¹³¹

TNS Social Research, on behalf of DEWR, also interviewed employers and training institutions as well as industry associations and qualified workers in the Motor Mechanics industry. Reasons stated for apprentices leaving their apprenticeship included the commonly cited wage issue, a poor image of the

¹³⁰ Deborah Wilson Consulting Services, 2007, Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply, pg 69

¹³¹ Deborah Wilson Consulting Services, 2007, Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply, pg 71

trade which was not successful in attracting new entrants, increasing demand for technical skills and training structures which were thought of as too lengthy in duration.¹³²

Australian Industry Group's (AIG) report *A Guide to Managing the First 100 Days of an Apprenticeship*, states that 11 % (all under the age of 21) of the 70 apprentices who had started their apprenticeship between October 2006 and February 2007 had cancelled the apprenticeship within the first 100 days. The report found that the main reasons for the cancellations were:

- a mismatch of expectations;
- misconduct (excessive absenteeism without any notice and abuse of facilities); and
- medical reasons (results of the pre-employment medical which showed the candidate to be medically unsuitable were not received before the apprenticeship was offered).

Almost 30 per cent of those in this group who had cancelled had had doubts about the apprenticeship before it began. Issues commonly considered to be a problem in the future of the apprenticeship were finance and travel.¹³³

The issue of wages for apprentices was explored in-depth recently in a study commissioned by Group Training Australia.¹³⁴ This report found that, out of a sample of six major trade occupational groups, award wages for first year apprentices in all groups were below the Henderson Poverty Line. Allowances, such as those provided in the construction industry, can shift these wage rates upwards by up to 50% but these are not a universal feature of apprenticeships in Australia. Award rates for second year apprentices are not much better although they do sit just above the Henderson Poverty Line. It is not until third and fourth year that apprentices start earning a wage that puts them well clear of the Poverty Line. However, the Group Training Australia report makes the point that, in general, apprentices are forced to live on a comparatively low wage, have little budgeting flexibility and often have to rely on third party handouts to survive.

A Canadian study published in 2004 focused on a different aspect of the issue, exploring some of the personal pre-requisites that apprentices needed to increase their chances of completion (interestingly, these tend to go to the heart of some of the issues raised by apprentices in Australian studies, most notably that published by Dumbrell and Smith).¹³⁵ The Canadian study highlighted:

- the finding that essential skills were a significant barrier to individuals' ability to access and complete apprenticeship training.
- low levels of literacy and mathematics were of particular concern.
- the changing world of work, including the increase in new technologies
- the increase in job complexity and
- the shift in demand for workers with higher skills in communication, literacy and problem solving, has placed a tremendous level of importance on Essential Skills, although consultations to date have reinforced the notion that while Essential Skills are important, it is unclear as to the degree

¹³² TNS Social Research (DEWR), 2006, Skills in Demand, p.33

¹³³ Australian Industry Group, 2007, A Guide to Managing the First 100 Days of an Apprenticeship

¹³⁴ Group Training Australia, 2007, Living Standards of Apprentices

¹³⁵ Dumbrell, Tom and Smith, Erica (NCVER), 2007, Pre-apprenticeships in Three Key Trades

and extent to which they are significant barriers or predictors of success/ failure in the context of apprenticeship.¹³⁶

Conclusion – Reasons for Apprentice Attrition

There has been a significant amount of research conducted over the past 12 to 15 years on reasons for attrition from apprenticeships. This has occurred within the context of a strong economy characterised by persistent trade skill shortages and a broader concern with increasing student post-secondary completion rates.

Findings of studies within Australia and internationally are remarkably similar. Many of the reasons identified could be seen as ‘typical’ reasons why people leave jobs, such as conflict with their employer, dissatisfaction with wage levels and a lack of work due to economic downturn. However, some are apprenticeship-specific, such as insufficient training and the apprentice’s realisation that they did not enjoy or were no longer committed to the apprenticeship they had commenced.

Most reasons given by apprentices and employers for early exit from apprenticeships are difficult for individuals to foresee, control or prevent, such as conflict with employer, economic downturn, employer closure, acceptance of a ‘better’ job offer and medical reasons. However, some factors are more controllable, such as perceived poor wage levels (by the apprentice), disinterest in the apprenticeship and career path, a lack of work effort or interest by the apprentice and concerns about bullying in the workplace. Harris and Simon explore this issue further, breaking down factors influencing non-completion into two broad types:

1. Person-oriented factors. These include motivation to undertake a contract of training, gender, age, highest level of previous education, past life experiences and persistence. These factors, in and of themselves, do not cause attrition. However, these factors need to be considered in any discussion on interventions designed to support those apprentices who might be designated “at risk” of attrition or who need special assistance to retain;
2. Context-oriented factors. These include interpersonal relationship with employer, type of employer, type and quality of social networks at work, mandatory nature of training, nature of work available after completion of a training contract, structure of the apprenticeship/traineeship (totally on-the-job, a combination of on and off-job training), occupational area in which the training contract is being undertaken, type of work undertaken during the contract, quality of the training and employment conditions. These factors make up aspects of the “life world” of the apprentice and, together with the person-oriented factors, appear to impact on retention.¹³⁷

Strategies for Reducing Apprentice Attrition

As noted previously, many of the reasons for apprenticeship cancellations are beyond the control of individuals and may be hard to influence. However, a number of studies have investigated the

¹³⁶ Canadian Apprenticeship Forum, 2004, Accessing and completing apprenticeship training in Canada: perceptions of barriers: a consultation report

¹³⁷ Harris, Roger and Simon, Michele, 2005, Exploring the notion of retention in apprenticeship, pg 355

demographic variables that tend to determine completion or non-completion while others suggest ways to improve completion rates while acknowledging that there are limits on how successful such efforts can be.

Unfortunately, recent studies have been somewhat contradictory in terms of their exploration of influential demographic factors, identifying sometimes males and sometimes females (see, for example, Ball¹³⁸ and NCVER¹³⁹) and various different age groups as most likely to complete/not complete an apprenticeship (see, for example, Gallacher et al¹⁴⁰ and NCVER¹⁴¹). However, there appears to be general agreement that indigenous people are less likely to complete an apprenticeship and that non-completion rates are highest early in an apprenticeship and decrease over the term of the apprenticeship, suggesting that many apprentices make their mind up about the suitability of their apprenticeship early on.

Callan's survey of 508 non-completing Queensland VET students found that the following factors would be most likely to encourage course completion:

1. flexibility of the course in terms of its time of delivery (19.4%);
2. the content of the course (19.4%);
3. the quality of the teaching staff (23.1%);
4. my personal situation (for example having a young family) (15.0%);
5. my work situation (for example my hours of work) (21.5%);
6. the workload of the course (10.6%);
7. my general financial situation (10.4%);
8. a reduced level of fees for the course (12.7%).¹⁴²

Dumbrell and Smith found that apprentices who completed their apprenticeship were most likely to have:

1. concerns about using apprenticeship to build career;
2. arranged apprenticeship before leaving school;
3. actively sought an apprenticeship through approaching employers;
4. left school in Year 10 rather than earlier or later;
5. showed more initial interest in the trade;
6. enjoyed their trade training more.¹⁴³

Dumbrell and Smith also cite a number of studies that capture student recommendations for increasing retention and completion, such as better matching of apprentices to employers, better monitoring of apprentices' workplace experiences, career counselling, clearer articulation of expectations of an apprenticeship, the need for apprentices to have 'learning to learn' skills and the linking of apprenticeship and pre-apprenticeship curriculum.¹⁴⁴ Dumbrell and Smith also found a prevailing view amongst employers, peak bodies, government and RTOs that pre-apprenticeships address a number of these issues

¹³⁸ Ball, Katrina, 2004, Factors Influencing Completion of Apprenticeships and Traineeships, pgs 10 -11

¹³⁹ NCVER, 2002, Outcomes and Completions of New Apprenticeships: Research At A Glance, pg 8

¹⁴⁰ Gallacher, Jim; Whittaker, Susan; Crossan, Beth and Mills, Vince, 2004, Modern Apprenticeships: Improving Completion Rates, pgs ii to iii

¹⁴¹ NCVER, 2002, Outcomes and Completions of New Apprenticeships: Research At A Glance, pg 8

¹⁴² Callan, Victor (NCVER), 2005, Why Do Students Leave?, pg 21

¹⁴³ Dumbrell, Tom and Smith, Erica (NCVER), 2007, Pre-apprenticeships in Three Key Trades, pg 15

¹⁴⁴ Ibid, pg 16

and that they provide “students with a better understanding of the destination industry and what an apprenticeship in that industry entailed, provided a filtering mechanism to divert unsuitable candidates, and provided learning-to-learn skills in an environment different from school.”¹⁴⁵

Harris et al conducted interviews with 437 apprentices and trainees, teachers, trainers and staff managers in order to identify those factors that contribute to improved retention rates. Some key ‘personal’ reasons which increased the chances of course completion include an interest in the occupation, medium to long-term career goals that include the occupation for which they are training, a high level of personal maturity, family and peer support and having considered how best to manage their work/life balance. Workplace factors cited by interviewees include the opportunity for the development of a wide range of skills and knowledge by the apprentice/trainee, realistic and reasonable hours of work, supportive management, satisfying relationships at work and acceptable physical working conditions.¹⁴⁶

Deborah Wilson Consulting Services’ *Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply* explores the issue of reducing apprenticeship non-completions extensively. The recommended strategies cover areas such as ‘working better together’ (aiming for a better employer/apprentice relationship and experience), a ‘commitment to the apprenticeship and financial support’ (ensuring adequate financial support and intervention to resolve conflict), ‘easing the financial burden’ (using financial incentives to drive increased employer and apprentice attention to outcomes), ‘industry support for apprentices’ (mobilising industries as a whole to set in place employment and retention strategies) and ‘training arrangements to support retention’ (changing training approaches to ensure apprentices stay interested and qualify quickly).¹⁴⁷

The Harris et al study explores a wide range of issues associated with increasing apprentice and trainee completion chances and rates, whilst also reinforcing existing views expressed in the work of Callan¹⁴⁸, Dumbrell and Smith¹⁴⁹, Ball¹⁵⁰ and NCVER¹⁵¹ to name a few.

The AIG report, *A guide to managing the first 100 days of an apprenticeship*, examines the importance of managing apprentices in the early part of their apprenticeship to counteract the high termination rates in the first three months of an apprenticeship. The report tracked 70 apprentices who started their apprenticeships between October 2006 and February 2007 and reflected industry roundtable discussions which found that areas to improve retention rates could include:

- on the job training and coaching;
- effective supervision at tradesman level;
- marketing apprenticeships through school;
- interviewing and selection processes;
- clarity on work to be performed in the first 100 days; and

¹⁴⁵ Dumbrell, Tom and Smith, Erica (NCVER), 2007, Pre-apprenticeships in Three Key Trades, pgs 32 - 33

¹⁴⁶ Harris, R., Simons, M., Bridge, K., Bone, J., Symons, H., Clayton, B., Pope, B., Cummins, G., and Blom, K., 2001, Factors That Contribute to Retention and Completion Rates for Apprentices and Trainees

¹⁴⁷ Deborah Wilson Consulting Services, 2007, Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply, pgs 79 - 82

¹⁴⁸ Callan, Victor (NCVER), 2005, Why Do Students Leave?

¹⁴⁹ Dumbrell, Tom and Smith, Erica (NCVER), 2007, Pre-apprenticeships in Three Key Trades

¹⁵⁰ Ball, Katrina, 2004, Factors Influencing Completion of Apprenticeships and Traineeships

¹⁵¹ NCVER, 2002, Outcomes and Completions of New Apprenticeships: Research At A Glance

- expectation on what hours of study may be needed¹⁵².

Several publications (Galalcher et al¹⁵³, the WA Skills Formation Taskforce¹⁵⁴ and Deborah Wilson Consulting Services¹⁵⁵) also argue the importance of the sort of role played by the Australian Apprenticeship Centres and State-based support networks for apprentices in increasing retention rates by providing a form of institutional monitoring and intervention. In Western Australia, the WA Skills Formation Taskforce has spawned a wide range of reform-related reviews and work is underway to substantially change the Apprenticeship and Traineeship Support Network (ATSN) to improve its ability to manage apprenticeships and traineeships in the interests of increasing completion rates.

Conclusion – Strategies for Reducing Apprentice Attrition

The issue of how best to reduce attrition from apprenticeships has received considerable research attention over the past 12 to 15 years (and particularly since the year 2000). Much of the published literature in this area is similar in its findings, both in terms of the factors underpinning attrition and the strategies best suited to managing it. However, the research agenda in this area appears somewhat scattered with considerable duplication of effort and a lack of awareness amongst researchers, authors and those commissioning research, in some instances, of existing research and literature on the issue of attrition from apprenticeships. This is distinct from the area of attrition from the trades where research has generally built upon rather than repeated efforts undertaken in the past.

Nonetheless, the research and literature about reducing attrition from apprenticeships is useful. There is considerable evidence to suggest that the employer/apprentice relationship is key to the success and completion of apprenticeships and that efforts should be directed to better matching employers and apprentices. The research also highlights the importance of providing sufficient early intervention services during the apprenticeship to resolve conflicts or issues that threaten to escalate into a decision by either party to terminate the contract of training. Institutional students and apprentices alike also appear to benefit from a strong learning culture with many apprentices quoted as saying that a positive learning experience and ongoing skills acquisition keeps them motivated to persist with their training.

Further, evidence suggests that individuals who developed a strong commitment to entering an apprentice and embarking on a trade career before they actually did so were more likely to complete their course. This observation supports the long-held notion that completing a pre-apprenticeship guarantees improved apprenticeship outcome. This is often considered to be the case as it weeds out unsuitable candidates and provides pre-apprentices with a much more informed basis upon which to decide whether or not to pursue an apprenticeship.

There is clearly a significant body of research on which to base future policy development aimed at improving apprentice completion rates. It should be noted, however, that labour mobility will always characterise all forms of employment, be it full-time, part-time or mixed with off-the-job training. The research to date acknowledges this and tends to focus on those areas of apprenticeships where

¹⁵² Australian Industry Group, 2007, A Guide to Managing the First 100 Days of an Apprenticeship

¹⁵³ Gallacher, Jim; Whittaker, Susan; Crossan, Beth and Mills, Vince, 2004, Modern Apprenticeships: Improving Completion Rates

¹⁵⁴ WA Skills Formation Taskforce, 2006, Careers for life: a dynamic and responsive apprenticeship and traineeship system

¹⁵⁵ Deborah Wilson Consulting Services, 2007, Report for the Department of Employment and Training and Construction Training Queensland, Matching Demand and Supply

cancellations occur not because an individual gains a better job opportunity elsewhere but where the cancellation results from a negative experience on either the part of the apprentice or employer or, indeed, both.

General Conclusions

The process of searching and then reviewing literature revealed a surprising dearth of recent, original research into attrition from the trades. Since 1993¹⁵⁶, the ABS has not conducted any surveys specifically focussed on measuring attrition from the trades and identifying causal factors (although the two yearly Labour Mobility supplement to the Labour Force Survey does collect data about occupational mobility). As a consequence, a considerable number of recent, published and unpublished pieces of literature dealing with the issue of attrition from the trades have collectively relied on this now out of date data set.

The review has indicated potential for further research to our understanding of the extent of attrition from the trades, the reasons for tradespeople leaving their home trade, what might entice them back, and what would have convinced them to remain in their home trade in the first place.

In contrast to the issue of attrition from apprenticeships and training more generally, attrition from the trades appears to have received comparatively little attention in the past decade to decade and a half. It appears that the national research agenda 'lost interest' in the area of attrition from the trades from the early 1990s onwards, instead investing a lot of effort in exploring attrition from training and, most noticeably, attrition from apprenticeships. There has been some original and valuable research in the attrition from the trades area sponsored by the National Centre for Vocational Education Research (NCVER) and the Department of Education, Employment and Workplace Relations (DEEWR) (and its many previous incarnations and constituent organisations) but this has been sparse. These are, however, generally exceptions in an area where research efforts have repetitively relied on the same, ageing data sets.

There appears to be a considerable gap in terms of Australia's current knowledge about attrition from the trades: in particular, current rates of attrition from the trades and exploring causal factors in depth, and research on what employers are doing to address attrition, particularly in relation to employer-controlled variables in the workplace such as wage levels and working conditions. It is interesting that wages feature as one of the most prevalent reasons for tradespeople leaving their trade yet the labour market seems not to be responding to this influential variable by increasing wages to a point that drives attrition rates downwards. Investigation in this area may reveal market imperfections that are contributing to rates of attrition.

As mentioned previously, research into the area of attrition from apprenticeships has been much more common in recent years compared to research into attrition from the trades. However, there is evidence of considerable overlap and duplication of effort in this area, complicated by the use of a multiplicity of different methodologies for calculating non-completion rates. This latter issue is raised in a number of publications. Australia could benefit from a single, recognised methodology for calculating non-completion rates (NCVER currently has a standard methodology that may be appropriate for promotion amongst researchers in this field).

¹⁵⁶ ABS, 1994, Career Paths of Persons With Trade Qualifications Australia 1993

On the issue of duplication and overlap, the literature review suggests that although considerable effort has been invested in examining apprenticeship attrition rates, the return in terms of new knowledge and valuable insights has been disproportionately small. A large volume of the examined literature explored the same issues from the same perspective, confirming previous research but adding very little to the overall body of knowledge on the issue of attrition from apprenticeships. Greater co-ordination and awareness amongst researchers would be likely to see research explore new avenues of inquiry rather than repeat the efforts of recent research.

One valuable insight that has emerged in more recent research into attrition from apprenticeships is the extent to which the relationship between employers and apprentices is critical to the success and completion of apprenticeships. A number of studies have highlighted this issue, raised not just by apprentices but employers as well, and suggest that greater completion rates may be achievable if resourcing and support to manage or head off conflict between apprentices and employers is increased or better directed along with better matching of apprentices to employers.

In broader terms, there appears to be a compelling argument to suggest that tailoring supply and demand-side solutions for different trades groups is likely to be the most effective way of addressing skill shortages in the trades. It may be possible to profile individual trade groups in terms of a consistent set of supply and demand variables in order to arrive at effective, customised strategies for addressing skills imbalances in each group. For example, the profile of one trade group, where the replacement rates for those leaving the occupation are in decline, may suggest that increases in training and immigration would be an appropriate solution. For another trade group, where wage levels have failed to move despite persistent skill shortages, greater market transparency may be necessary to encourage employers to adjust wages. Potentially, a significant research effort could be undertaken in this area to identify the individual variables which are most responsible for skill shortages for each trade group and, thus, the most appropriate solutions.

In conclusion, the literature review has not turned up a host of unexpected insights into the issues of attrition from the trades and apprenticeships. In fact, the literature available tends to confirm what those with an interest in this field would already be likely to know. This is in itself useful – it suggests that research efforts in the area have been consistent in their findings. However, research efforts have been sparse since the early 1990s in comparison to work in relation to apprenticeship attrition and given the skewed nature of baseline ABS data that many research reports rely on, renewed, more co-ordinated research may be timely.

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Glossary of Terms

Attrition – a reduction in the number of people in an occupation or apprenticeship due to those leaving the occupation or (incomplete) apprenticeship.

Attrition rates – the proportion of persons starting in an occupation or apprenticeship who discontinue through leaving the occupation or (incomplete) apprenticeship.

Apprenticeship - a legally-binding training arrangement between an employer and an apprentice that combines structured training with paid employment.

AQF – Australian Qualifications Framework.

Cancellation – formal cancellation of the contract of training between an apprentice and an employer.

Cancelled apprenticeship – apprenticeship which has ended without a qualification being awarded due to cancellation of the contract of training between an apprentice and an employer.

Commencement(s) – an apprenticeship which has started.

Completion – an apprenticeship which has ended with the apprentice completing their on and off-the-job training components and has been awarded a qualification.

Completion rates – the proportion of apprentices starting who complete their on and off-the-job training components and have been awarded a qualification.

Exit(s) – an apprenticeship that remains incomplete due to the apprentice ceasing their training.

Home occupation – the occupation to which a particular qualification typically leads eg. home occupation for a Trade Certificate in Motor Mechanics is Motor Mechanic.

Home trade – the trade occupation to which a particular qualification typically leads eg. home trade occupation for a Trade Certificate in Motor Mechanics is Motor Mechanic.

Non-completion - an apprenticeship that remains incomplete due to the apprentice ceasing their training or their contract being cancelled.

Occupational attrition - a reduction in the number of people in an occupation due to those leaving the occupation.

Rate(s) of attrition – the number of persons who have left an occupation as a proportion of the total number in the occupation.

Retention rate(s) – the proportion of persons starting in an occupation or apprenticeship who continue on in the occupation or (incomplete) or apprenticeship.

Qualified tradesperson – a person working in a trade occupation who holds

Separation - – a reduction in the number of people in an occupation due to those leaving the occupation.

Skill shortage(s) – most typically a situation where demand for skilled workers outstrips supply.

Trade(s) – an occupation for which a trade certificate is typically required.

Trade groups – similar or related trade occupations that are conceptually grouped together.

Trade skill shortage – most typically a situation where demand for trade workers outstrips supply.

Trade training – training and work skills that an apprentice or trainee receives while they are working or outside of work.

Traineeship - a structured training and paid employment arrangement that involves a contract between the employer and the trainee. Traineeships vary in length from 12 months to three years.

Training contract - a legally binding contract for training and employment between an employer and an apprentice or trainee (and parent or guardian if the apprentice or trainee is under 18 years of age).

Wastage - – a reduction in the number of people in an occupation or apprenticeship due to those leaving the occupation or (incomplete) apprenticeship.

Withdrawal(s) - apprenticeship which has ended without a qualification being awarded due to cancellation of the contract of training between an apprentice and an employer.

Appendix 1 – Methodology

Conduct of the literature review followed a standard methodology used to methodically identify, acquire, review, rate and document literature relevant to the project.

The literature review is defined by DEEWR as follows:

“A systematic analysis of national and international literature (including from European countries, the United States, the United Kingdom and Canada) regarding the patterns of and factors influencing acquisition of qualifications and subsequent patterns and extent of and reasons for exit from trades of tradespeople. The literature reviewed should address the characteristics required to retain qualified trades people in their trade; skills wastage; the effect of skills shortages in the trades on industry; and effective ways to retain qualified tradespeople in their trade and address skills shortages in the trades.”

The literature review comprised four phases:

1. Collection of unpublished and notable works;
2. Electronic bibliographic database search;
3. Internet search;
4. Literature review report preparation, including synthesis of any key themes emerging from the literature that are pertinent to the overarching objective of the project.

Unpublished and Notable Works

Contact was made with a number of prominent public organisations to identify (and collect) any unpublished and notable works (Australian, European, United States and Canada) related to attrition from the trades and apprenticeships.

Electronic Bibliographic Database Search

A matrix of key terms was used to search national and international bibliographic and literature databases to identify and source published works.

Databases used included:

- VOCED – maintained by NCVER, an international electronic database for technical and vocational education and training.
- EDNA Online – Education Network Australia, a joint initiative of the State and Territory Governments, and the Australian Government. An online resource collection and collaborative network for the education and training community.
- EdResearch Online – a database from more than 200 Australian education journals, managed by Cunningham Library, Australian Council for Educational Research.

- Education-line – a collection of full text conference papers, working papers and electronic literature which supports educational research, policy and practice, managed by the Brotherton Library, University of Leeds.
- Education Resources Information Centre (ERIC) (EBSCO) – sponsored by the U.S Department of Education, Institute of Education Sciences, the world’s largest digital library of education literature.
- European Centre for the Development of Vocational Training (CEDEFOP) – articles on Vocational Education and Training in the European Union.
- European Research Overview (ERO) – information on experts, papers and projects in research on vocational education and training and human resource development in Europe, created in conjunction with CEDEFOP.
- UNEVOC Canada Research Database – Canadian centre for UNESCO’s international network on technical and vocational education.
- E-Library Australasia – a database of magazines, international newspapers, reference books, transcripts and other multimedia resources to support both teachers and learners.
- Emerald – database of journals in management, information services, engineering, applied science and technology.
- ProQuest 5000 International – a collection of databases covering computer science, education and medicine.
- WORKLIT (Informit) –a bibliographic database that indexes and abstracts articles on industrial relations and related topics from 1983-2002, produced by the Department of Workplace Relations and Small Business, owned by RMIT University.

The matrix below describes the search terms used when searching all online databases (each coloured block represents an intersection of two terms to be searched co-jointly). Search returns were generally confined to post-1995 material for the purposes of ensuring relevance to the modern world of training and work. However, any literature authored prior to 1995 which appeared to have continued currency was included in the final search results.



Approximately 250 returns on the search were reduced to approximately 160 publications considered to be of direct relevance to the research project's topic. Of these, a total of 54 were deemed to be sufficiently focussed on the topic of attrition to warrant inclusion in the final literature review.

All literature identified during the search was classified and rated according to four variables in order to segment literature across a value and relevance continuum. Literature was rating according to: 1) Relevance, 2) Evidence-based or not; 3) Extent of focus on the topic, and 4) Currency (1995 onwards publication date or not).

Internet Search

A broader internet search was also conducted using multiple search engines to identify any additional literature or works relevant to the project but tended to reveal literature already collected through the bibliographic database search. The internet search, conducted as a secondary search, turned up literature already collected during the electronic bibliographic database search.

Search Output

Literature identified through the literature search process was about 60% Australian in origin with the remainder concerned with experiences overseas (predominantly the United States, Canada, Great Britain and continental Europe).

A significant proportion of overseas literature lacked relevance to Australian conditions or the trades as much of it was concerned with attrition from professional occupations or examined the relationship between attrition and uniquely international labour market variables eg. pension schemes in the United States or the ethnicity profile of the country in question.

Most Australian literature, however, was focussed on the trades. A proportion was discarded due to its age – there was clearly a stronger emphasis on original research into the issue of attrition from the trades during the 1970s and 1980s but much of this was considered too old to be of great value to the literature review. It would appear that in the mid to late 1980s, strong economic conditions prompted a temporary burst of new research into attrition from the trades. This dwindled in the early 1990s as the Australian economy fell into recession and skill shortages became a non-issue.