

**Meeting Trade Skills Shortages
through
Innovation and Flexibility
in the
NSW VET System**

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1. BACKGROUND TO CURRENT TRADE SKILLS SHORTAGE

Shortages of tradespeople have been reported for several years across almost all trade occupations, including Metals, Automotive, Electrical, Construction, Hairdressing, Food and Horticulture. Skills shortages are of concern because they constrain output and investment, lead to wage cost inflation and lower the rate of product and process innovation across the economy. It is important to note that shortages of skills in trade and technician occupations are a problem across most developed economies and that large-scale immigration, on which Australia relied in the post-war years to meet skills needs, is unlikely to prove feasible.

The current trade skills shortages are the result, firstly, of a sustained high level of output for most of the last decade across a broad range of industries that employ a high proportion of tradespeople. These industries are mining and minerals processing, utilities, communications, construction, manufacturing and tourism. Sustained high output has increased the demand for tradespeople.

Secondly, current shortages are due to a persistent decline in the apprenticeship training rate. The training rate is the ratio of apprentices-in-training to employed tradespeople. This ratio measures the rate at which losses from the existing stock of tradespeople - caused, for example by death, retirement, disability and leaving the trade occupations - are being replaced through the domestic training system. Over the last decade the training rate declined by 16 percent compared to the rate in the 1980s-early 1990s. This is the equivalent of losing one year's new apprenticeship starts every 6 years.

The reduced training rate has been caused by changes in the economy occurring over the last two decades. Some of these changes are described below.

- Demographic changes have reduced the proportion of young people in the workforce available for apprenticeships. In the late 1970s 15-19 year-olds represented around 12 percent of the total Australian population aged 15 years or older. Currently 15-19 year-olds account for around only 7 percent of the population aged 15 years or older. This is a fall of over 40 percent.
- Rising school retention rates and an increasing share of young people in tertiary education have compounded the effect of these demographic changes by reducing the pool of suitable applicants. The growth of the service sector has created job opportunities for young people that are competing with traditional apprenticeships. The net result of these changes is that employers report unfilled apprenticeship vacancies due to a shortage of suitable applicants.
- The privatisation and corporatisation of public utilities has changed the objectives of these enterprises from a 'public service' attitude, which included large-scale investment in apprenticeship training, to a more commercial approach, which has reduced their investment in apprenticeship training.

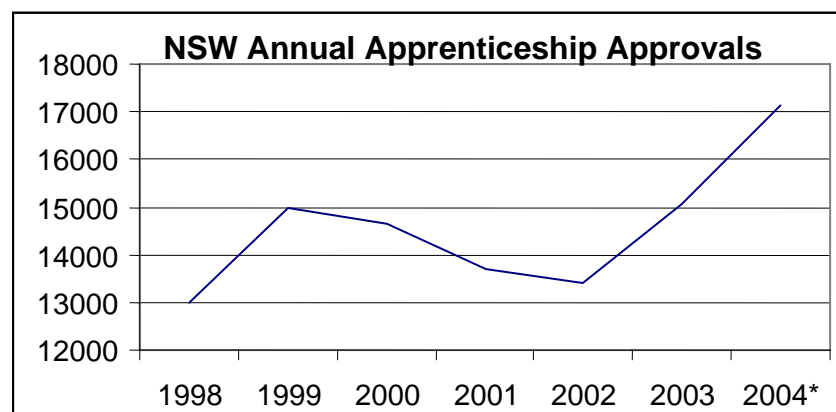
- The Business Council of Australia has recently warned about the problems of 'short-termism' caused by greatly intensified competition and a shortening of the time permitted for investments to return a profit. Such short-termism has contributed to an unwillingness to invest in longer-term training, such as apprenticeships, which may take 3-4 years before becoming cash flow- positive.
- Increased competition has also accelerated the strategy of outsourcing production and maintenance activities. This has resulted in a large increase in the number of smaller specialist firms. Smaller specialised firms have a much lower propensity to invest in training than larger firms. Outsourcing has also led to increased reliance on labour hire. With some important exceptions, labour hire firms rely on finding contractors from the existing stock of tradespeople and do not train up their own labour resources.

Whilst the reduced apprentice training rate has been evident across New South Wales and Australia since the early 1990s, it is important to note there has been a recent substantial rise in NSW apprentice starts. NSW apprenticeship approvals increased by 28 percent between 2002 and 2004. Most of this increase occurred in the last twelve months of that period. Current NSW approvals are at their highest level since the late 1980s and have substantially lifted the NSW apprentice training rate. A key issue for firms and public policy-makers is to ensure this recent lift in the training rate is sustained.

2. RECENT GROWTH IN APPRENTICESHIPS IN NEW SOUTH WALES

It is evident from Figure 1 (and Table 1) that there has been a marked increase in the NSW apprentice intake over 2003 and 2004. Between 2002 and 2004 apprentice approvals increased by 28 percent.

Figure 1



*Year to November

Table 1: NSW Apprenticeship Annual Approvals

	1998	1999	2000	2001	2002	2003	2004*
Approvals	12,979	14,999	14,659	13,700	13,426	15,042	17,128
Annual % Change		15.6	-2.3	-6.5	-2.0	12.0	13.9

*Year to November

Importantly, the increase in approvals is broadly-based, with all major apprentice occupations recording substantial rises. Between 2002 and 2004:

- Construction industry approvals increased by 45% (Bricklaying 33%; Carpentry 40%; Plastering 83% and Plumbing 70%)
- Utilities and Electro-Technology increased by 59% (Electrical Mechanics 59%)
- Manufacturing and Engineering increased by 14%, with Fabrication trades increasing by 42%
- Hairdressing increased by 20%
- Greenkeeping/Nursery/Horticulture increased by 25%
- Furnishing (Cabinet-Making/Glazing/Upholstery/Wood-Machining) increased by 93%, and
- Food (Chefs/Bakers/Pastry Cooks) increased by 11%.

Causes of Increased Apprenticeship Approvals

This large increase in apprentice intake is due to a number of factors. Firstly, there is recognition by employers that training is the only viable solution to the skills supply problem. Secondly, there have been sustained high levels of economic growth, record levels of profitability and record levels of investment in buildings and equipment. This has created high demand for skilled labour and given employers the confidence to invest in apprentices. Finally, enhanced flexibility and a range of innovative policies in the NSW VET system have made employment of apprentices more attractive.

However, as noted above, to address the nation's critical trade skill shortages it is crucial to ensure that this recent lift in apprentice approvals and rise in the training rate is sustained.

3. EXAMPLES OF INNOVATION AND FLEXIBILITY IN NSW APPRENTICESHIP TRAINING

This section provides examples of enhanced flexibility in the apprenticeship training system that has been achieved over recent years. These innovative policies have contributed to employers' willingness to invest in apprenticeships. Importantly, these policies are also balanced by the necessity to maintain quality standards in the vocational education and skills formation system. The NSW Government has resisted demands from some quarters for a 'quick fix' solution to skills shortages which would substitute the broad range of practical skills and theoretical knowledge embodied in the

traditional apprenticeships for a skills fragmentation approach based on meeting short-term skills gaps.

It has been convincingly shown that qualified trade and technician skills make important contributions to higher productivity and innovation in product design and production processes within firms and across the economy. Broad-based and high-level trade skills are essential in creating a vocational workforce that has the flexibility to cope with rapid change in technology and work organisation within firms and across industries.

The following are just a few of the multiple examples across the state of innovative and flexible approaches to apprentice training in NSW. These examples cover initiatives in pre-vocational training; acceleration of learning and reduction of the term of training through Recognition of Prior Learning; customisation of training to industry needs; facilitating progression from traineeships into apprenticeships; assisting mature-age workers in apprenticeships and continued support for Group Training.

3.1 Expansion in Pre-Vocational Training

Exposing prospective apprentices to a life in the trades through structured pre-vocational training has been demonstrated to provide important benefits. People who complete pre-apprenticeship programmes before undertaking apprenticeships have a much higher apprenticeship completion rate than other apprentices. Expenditure on pre-vocational training, therefore, is an investment that not only increases the supply of suitable applicants for apprenticeships but also increases apprenticeship completion rates.

In response to skills shortages, the NSW Government has significantly increased expenditure on pre-apprenticeship training. Since October 2003 the NSW Government has allocated \$8 million to pre-vocational training, creating 3,250 new pre-apprentice/trainee places.

A wide range of training courses have been purchased in trade occupations experiencing skill shortages, including Automotive, Manufacturing and Engineering, Electro-Technology, Commercial Cookery, Construction and Plumbing. Pre-vocational traineeships are also offered in Aged Care, Children's Services, Commercial Cookery, Kitchen Operations and Hairdressing.

The success of this investment is demonstrated through a number of industry case studies:

- Young men in south-western and western Sydney were given opportunities for pre-vocational training in Automotive and Manufacturing. This project brought together businesses such as Volvo and Austools with a training provider, the Western Sydney Region Organisation of Councils (WSROC). Most of the participants who completed the course have gone on to education and work

opportunities, including seven who have now taken up apprenticeships in these fields.

- 75% of participants in pre-vocational courses in Painting and Decorating have been signed up as apprentices with the Master Painters Group Training Company, and
- 14 participants in a TAFE NSW Sydney Institute pre-vocational course in plumbing have been placed as apprentices with the Master Plumbers and Gas Fitters Group Training Company.

By providing these opportunities to study at TAFE, or with other training providers, young people gain the skills and confidence to take up full apprenticeships. This is practical assistance delivered by the NSW Government to industry and employers to overcome skill shortages constraining their ability to grow and prosper.

3.2 Increased Flexibility Through Adult Apprenticeship Pathways

The formal recognition of skills acquired informally by adults on- and off-the-job is an important part of improving the efficiency of the VET system. Recognition of prior learning (RPL) reduces the term of an apprenticeship and minimises waste of education resources by preventing apprentices undergoing unnecessary training.

In 2004, measures were introduced to allow for accelerated progression of adults through Engineering (Mechanical) and Engineering (Fabrication) apprenticeships. This system allows for a halving of the duration of an apprenticeship from 4 to 2 years.

Two years' credit towards the nominal term of the apprenticeship is granted where the applicant demonstrates, firstly, three years' or more practical experience in a related field of work immediately prior to making the application, and, secondly, competence to a minimum level of 32 weighted points, calculated in accordance with the Metal and Engineering Training Package (MEM98). The applicant's competence is assessed by a registered Metal, Engineering and Related Services (MERS) accredited assessor or a registered training organisation which has the relevant qualification within its scope of registration.

As a result of these and other initiatives there has been a substantial rise in the proportion of adult apprentices. In 1998 15 percent of all commencing apprentices were aged 21 or over. In 2003 21 percent of all commencing apprentices were aged 21 or over. This is an increase of 40 percent over the five year period.

3.3 Customised Training to Meet Industry Needs

Refrigeration and air-conditioning firms in New South Wales have identified a skill shortage for draftspeople designing air-conditioning systems for high-rise buildings. In addition, the existing National Training Package (Certificate III in Drafting Trades) did not fully meet the needs of these NSW firms. Collaboration between the Air-Conditioning and Mechanical Contractors

Association (ACMA) of New South Wales and Bankstown TAFE has resolved both problems.

Industry and TAFE launched a promotional campaign to attract people into these apprenticeships. TAFE assessed the prospective apprentices and offered them Recognition of their Prior Learning (RPL), plus 'skills gap' training to fill any deficiencies in their competencies.

To further shorten the term of training, employers agreed to 'block release' of these Drafting apprentices during the autumn vacation when courses on Computer-Aided Drafting were undertaken. Courses that would otherwise have been extended over one or two semesters were compressed into short-term, intensive training.

The National Drafting Package has also been amended after extensive consultation between ACMA and senior Drafting teachers from Bankstown TAFE, to better meet industry needs.

ACMA is now committed to encouraging its member firms to recruit apprentices and fill the training course for each of the next three years to provide a sustainable skilled labour supply.

3.4 Innovative Career Progression

The NSW vocational training system is designed to encourage skill upgrading and career advancement. One means of achieving this is by having a seamless system for the recognition and articulation of a person's prior qualifications. An example of the success of this system is provided in the progression of people who have completed traineeships and subsequently enrolled in apprenticeships (Table 2). The rapid growth of traineeships has provided many young people and older workers with the opportunity to acquire their first vocational qualification. Many of these people are then encouraged to undertake further study and work.

In New South Wales over the period 1997 to 2004 some 3,100 people who had successfully completed traineeships subsequently undertook an apprenticeship. These people make an important contribution to total apprenticeship intake, accounting, for example, for 1 in every 20 apprentices in Mechanical and Fabrication Engineering over the period. The table overleaf shows the traineeships previously undertaken by people who undertook apprenticeships from 1997-2004.

Table 2 : People Who Completed a Traineeship and Subsequently Undertook an Apprenticeship 1997-2004

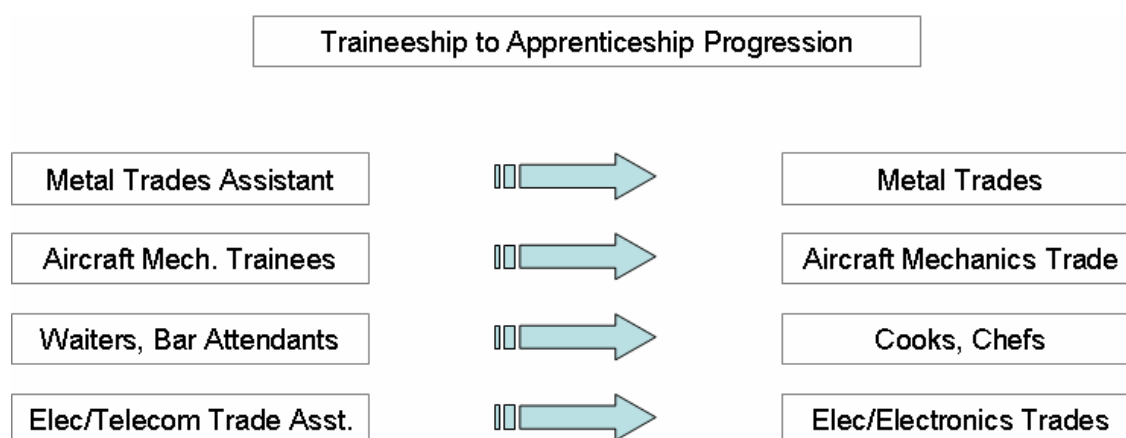
Subsequent Apprenticeship Occupation	Original Traineeship Occupation							Total
	Science, Engineering Ass. Prof.	Other Trades	Intermediate Sales Workers	Intermediate Service Workers	Factory Labourers	Other Labourers	Other Trainee Occs.	
Mechanical & Fabrication Engineering	119	4	30	3	230	23	125	534
Automotive	15	5	52	6	23	101	135	337
Electrical & Electronics	16	2	60	12	18	362	76	546
Construction	14	67	90	25	50	115	126	487
Food Trades	1	3	55	335	93	91	38	616
Skilled Ag/Horticulture	2	0	24	6	2	158	67	259
Other Trades	6	68	58	16	12	2	72	234
Other Occupations	3	2	24	4	9	7	38	87
Total	176	151	393	407	437	859	677	3,100

Source: C. Morgan (2004) *Statistical Trends in Apprenticeships in NSW 1997 – 2003/4*

The most common career paths taken by trainees entering apprenticeships is given in Figure 2. It is clear that there is a close association between the type of traineeship completed and the type of apprenticeship entered.

Full recognition and a reduced term of training are given for the competencies attained in the traineeship towards the subsequent apprenticeship.

Figure 2



Source: C. Morgan (2004) *Statistical Trends in Apprenticeships in NSW 1997 – 2003/4*

Mature-Age Workers

There has been a long-standing shortage of hairdressers. To address this, industry and TAFE have co-operated to encourage the return of people having some experience in the industry and the entry of older workers into the

trade. The key elements of the strategy are for students to undertake intensive off-the-job TAFE training, completing this component of the apprenticeship in 12 months instead of 2 years. This off-the-job training is combined with work experience in the salons of firms participating in the program. Rather than being an employee of a salon, the students are given real work experience through placements in industry. In the second year, on-the-job work experience is provided through the hairdressing salon run by the Nepean campus of TAFE. Students over the age of 21 who complete the course qualify as a hairdresser and may establish their own salon.

This program is especially suited to older workers who are seeking self-employment as hairdressers.

Continued Support for Group Training

Section 2 of this report described changes in the structure of the economy that have created impediments for firms to employ apprentices directly. These changes have led employers to increase their reliance on Group Training Companies.

Group Training Companies recruit and employ apprentices, placing them with 'host' employers in the private and public sector. The host employers pay the wages of the apprentice and provide on-the-job work experience and training. Group Training Companies provide remedial education where necessary and manage off-the-job training and relations between apprentices and their host employers.

Group Training Companies also provide 'pastoral care', which is especially important for young people who are entering the world of adult work for the first time. Using Group Training Companies allows employers to engage apprentices without the administrative burden and overhead costs of direct employment and without the concern that apprentices may be made redundant in the event of a downturn in the firm's output. By rotating apprentices among a number of employers throughout the term of an apprenticeship Group Training Companies provide exposure to a wider range of work environments and skill development opportunities than most individual employers can provide.

The NSW Government supports Group Training arrangements and has encouraged the development of quality systems in Group Training Companies to ensure continued high levels of service to employers and apprentices. This support has resulted in rapid expansion in employer use of Group Training Company services. In the early 1990s around 10 percent of apprentices were employed in Group Training Companies. This has now increased to 18 percent.

Importantly, the efforts of Group Training Companies are concentrated on those industries which have the greatest impediments to employers' direct employment of apprentices, namely, Construction, Electrical and Metals.