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Bob Birrell and Virginia Rapson

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HIGHER EDUCATION'S PLACE IN MEETING WORKFORCE DEMANDS

Centre for Population and Urban Research
Monash University

Dusseldorp Skills Forum

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Dusseldorp Skills Forum
1 Glebe Street,
Glebe NSW 2037
Telephone: +61 2 9571 8347
Fax: +61 2 9571 9703
Email: info@dsf.org.au
Web: www.dsf.org.au

Centre for Population and Urban Research
School for Political and Social Inquiry
Monash University
VIC 3800
Web: www.arts.monash.edu.au/cpur/index.html

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Executive Summary

This report explores the relationship between the changing nature of Australia's occupational system and the training of young people, with particular reference to the higher education sector. It concludes that a serious mismatch has developed. Training levels have fallen well behind needs, as indicated by the rapid expansion in the ranks of persons holding managerial, professional and associated professional positions and the persistent skill shortages within these occupational fields.

Debate on this issue has been muddied by the assertions of some Coalition Government leaders that past training priorities in Australia have involved excessive emphasis on higher education at the expense of trade training. Such assertions are not supported by the empirical evidence assembled for this report.

Training at the higher education and trade level should not be seen as in opposition. There are two reasons for this claim. The first is that there is no lack of young people potentially available for training. It is well known (and confirmed in this paper) that the rate of labour force growth in Australia is likely to decline sharply from the present level over the next two decades. It is commonly believed that this decline will be a product of an impending reduction in the size of the youth cohort. A projection prepared for this report shows that this perception, too, is mistaken. The number of 15-19 year olds will increase over the projection period (to 2051), even if the present sub-replacement fertility level continues. The reason for the projected decline in the rate of labour force growth in Australia is the impending retirement of the large crop of baby boomers now aged in their late 40s and 50s.

The second reason why increases in training at both the higher education and trade levels are compatible is that a large proportion of young men and women in Australia (aged in their late teens and early 20s) are not engaged in any form of post-school training. Much less than half of 20 year olds are engaged in full-time education (see Figures 4 and 5). In other words there is a huge reserve of young people in work, unemployed or not in the labour force who are potentially available for post-school training.

There has been a welcome recent increase in the number of young people taking on traditional apprenticeships (Table 5). However, the number of commencements at the undergraduate level on the part of domestic students in Australia in 2005 was much the same as it was when the Coalition came to government in 1996. Almost all the growth in training in Australian universities since that time has been amongst full-fee overseas students.

There have been only minor changes in this situation even in the circumstances of the last few years of the resources boom, when employment of managers, professionals and associate professionals has grown rapidly. The latest data on higher education commencements are for the full year 2005. The Australian Government has recently highlighted the increase in domestic commencements of some 10,000 between 2004 and 2005 and claimed that 'this demonstrates the Australian Government's commitment to increasing participation in post-school education for all Australians.'[1] In fact, the number of commencing undergraduates in 2005 was virtually the same as the number commencing in 2001.

The main reason for this enrolment outcome is that the Commonwealth Government has maintained an effective cap on the number of places for domestic students since it came to office. Recent Government announcements of increases in the number of fully funded places, particularly in the health and engineering fields, though welcome, will not substantially alter the situation. This is because universities have been required to reduce the number of marginally funded places (or 'over-enrolments') on their books. The reduction in these places roughly matches the extra number of fully funded places.

Another factor, becoming more evident in 2006, is that some prospective students, particularly those considering attending regional universities, are not taking up the places they are offered. This situation appears to reflect a combination of improvements in job opportunities and the difficult financial circumstances many prospective students face in providing for their living expenses while in full-time study. Since the Coalition came to power it has diminished access to the youth allowance available for full-time students and, as well, has increased the level of HECS debt that students incur when they complete their studies.

Australia faces a crisis in the availability of university-trained personnel. Analysis of the changing occupational structure of the labour force undertaken for this report shows that the number of persons employed at the managerial, professional and associate professional level is growing far more rapidly than the overall level of employment (Table 2). The analysis also showed that the proportion of persons in these occupational groups with degrees is also increasing (Table 4).

There are already severe shortages in some vocational fields, including health, engineering and accounting, which the Coalition Government is seeking to fill via an expansion of the immigration program. It is highly likely that in the absence of a major increase in domestic higher education training that these shortages will become endemic. By 2005-06, some 38 per cent of all employed persons in Australia held positions in these three broad occupational groups. Yet, as of 2001, only about 18 per cent of males and 25 per cent of females aged 25-29 hold degrees.[2]

There should be an increase in the availability of higher education places in locations and disciplines suited to prospective student preferences and employer needs, as well as a more supportive stance on the provision of student financial assistance. There are far too many young Australians who face an economic future ill equipped to provide the skills needed in a labour market where most of the growth is in jobs requiring technical, analytical and managerial skills. From the point of view of employers, an increase in domestic training amongst the expanding ranks of young people is especially urgent, since employers are about to lose the services of the baby boomers.

There is plenty of scope to increase the proportion of young people studying in both the higher education and vocational training sectors. At least as far as the overall numbers of potential students are concerned, there is no incompatibility between expanding opportunities for training in both the university and trade arenas.

Clearing the Myths Away:
Higher Education's Place in Meeting Workforce Demands

The economic boom which Australia has experienced in the past decade has been accompanied by a remarkable growth in the workforce, particularly in positions employing managers, professionals and associate professionals. As shown below, nearly two thirds of all the growth in the employed workforce over the decade 1996 to 2006 went to persons employed in these three sets of occupations. Persons filling these positions are increasingly required to possess degree-level qualifications. Yet, since 1996 there has been little increase in the number of domestic Australian students commencing undergraduate training at Australian universities. One consequence has been the emergence of serious shortages of graduates in a number of vocationally specific areas, including in the health professions, engineering and accounting.

This paper explores the dimensions of the gap between supply and demand for persons with university training. It indicates that the size of this gap is already large and may worsen. It concludes that there are strong economic efficiency and equity grounds for a substantial increase in higher education training opportunities for domestic students at Australian universities.

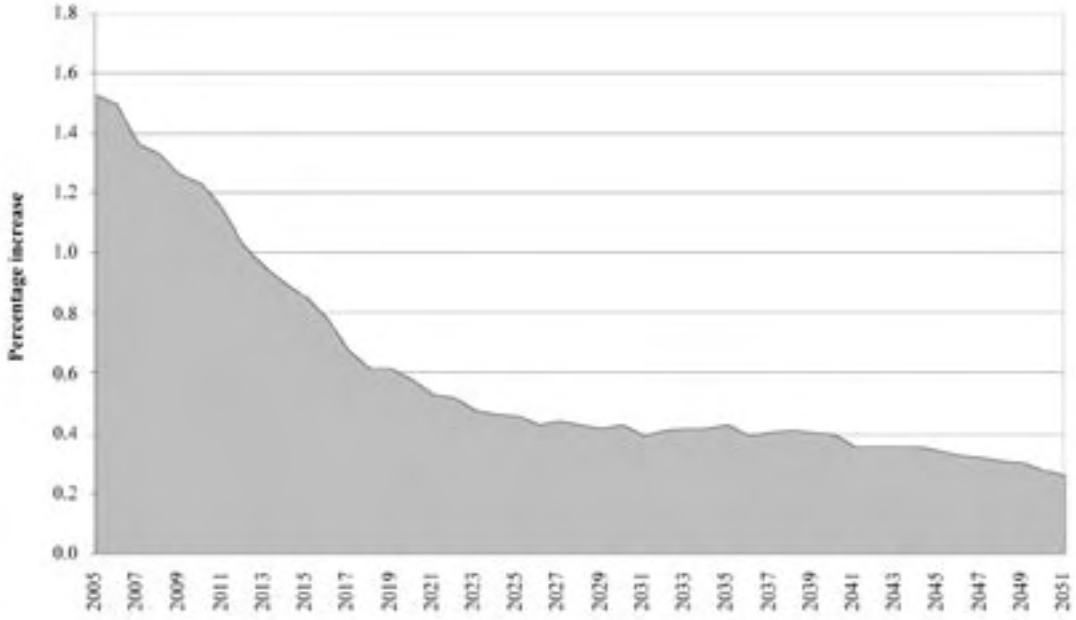
The analysis begins with a brief review of the way in which influential sectors of the business and government interpret the skills shortage issue. This understanding appears to be underpinned by incorrect information about the number of young people in Australia who are likely to enter the Australian labour market over the next couple of decades. It is widely (and incorrectly) thought that their numbers will diminish because of our 'ageing' society. This perspective appears to be deflecting attention from the potential that these young people could offer, if they were given training opportunities, in meeting the growing needs for graduate level skills in Australia.

VIEWS ABOUT THE IMPACT OF POPULATION AGEING

Employers appear to be especially alarmed about current skill shortages because these shortages are appearing at a time when it is feared that population ageing will exacerbate the problem. Most employers are now aware that the rate of labour force growth in Australia is about to decline. The outlook is shown in Figure 1, which is drawn from projections prepared by the Productivity Commission. These projections embody the Commission's judgements about future labour force participation rates. The projections incorporate estimates for the retirement of baby boomers and the growth in the number of young people entering the labour market until 2051 (see Figure 2). The decline in the rate of growth in the workforce is rapid and relentless. The annual percentage growth in the labour force is projected to fall from the current high levels of around 1.6 per cent per annum to less than half this level in 2051. The implication for employers is that the balance of power in the labour market is about to swing towards labour, with consequent threats to business profits. For both employers and governments, there is a further implied consequence: the overall pace of aggregate economic growth in Australia will slow, since this pace is a product of per capita productivity growth (which includes the effect of gains from technological innovation) and workforce growth.

When it comes to perceptions of the causes of the impending decline in labour force growth, the publicity about Australia's ageing society has helped create a sense that Australia is running out of young people. This perception helps explain why otherwise well-informed people have embraced the idea that it is time to reorient Australia's training priorities: if young people are becoming scarcer, then maybe they should be directed into the current high priority skill areas, particularly the traditional trades. Both the Prime Minister[3] and the former Minister of Education, Brendan Nelson, have entreated parents to encourage their children to take on trade training *instead of* university training. Some of the less informed commentary on the issue is even more extreme – and invariably dire in its implications for employers. For example, in a review of the employment situation a professional recruiter is quoted prominently as saying that, '[in 2002] 185,000 people entered the Australian workforce – by 2020 that number will be just 12,000'.[5] This is simply wrong.

FIGURE 1:
Projected annual increase in labour force to 2051, medium Net Overseas Migration (115,000 per annum)



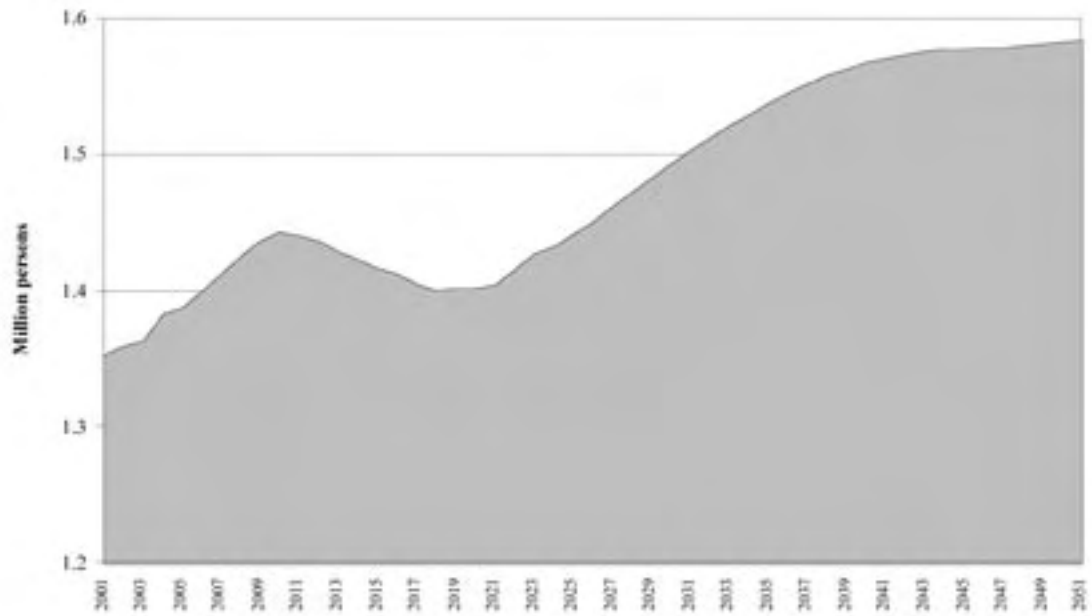
Source: Productivity Commission, *Economic Implications of an Ageing Australia*, 2005, accompanying unpublished tables

A further question for the Australian Government is why, if it believes there is too much emphasis on university training, has it expanded the skilled immigration intake? The great majority of the skilled persons being visaed are professionals. In 2004-05 some 27,000 professionals with permanent residence visas or work entitlements arrived in Australia from overseas.[5] A further 13,269 former overseas students obtained permanent residence visas in 2004-05 under the various skilled visa categories set up to attract these former students.[6] Almost all of these former overseas students had obtained university degrees at Australian universities, mainly in IT, accounting and engineering. When the Howard Government came to office in 1996, the comparable annual influx was half the level recorded in 2004-05.

The reality is that Australia is not running out of young people. Figure 2 provides a projection of the number of persons aged 15-19 over the period to 2051. Their numbers increase for the rest of this decade, then drop slightly over the decade 2010 to 2020 (reflecting the relatively low birth levels in the mid-1990s). After this they increase again, mirroring the current mild increase in the annual total of births in Australia (247,400 in 2002-03, 252,100 in 2003-04 and 257,900 in 2004-05). The increase in the number of persons aged 15-19 after 2020 is largely a consequence of the current increase in the number of births, which derives from the large cohort of young adults who are presently in their early thirties – the peak years of child bearing for women these days. This projection assumes that the Total Fertility Rate will stabilise at 1.8.

The impending drop in the rate of labour-force growth shown in Figure 1 is a consequence of the forthcoming retirement of the baby boomers. Australia is on the threshold of a severe loss of experienced workers now aged in their fifties. It is this retirement factor which is the explanation for the projected drop in Australia's rate of labour force growth and not any reduction of the number of young entrants into the labour force.

FIGURE 2:
Projected number of persons aged 15-19 to 2051, Net Overseas Migration (115,000 per annum) and Total Fertility Rate 1.8



Source: Productivity Commission, *Economic Implications of an Ageing Australia*, 2005, accompanying unpublished tables

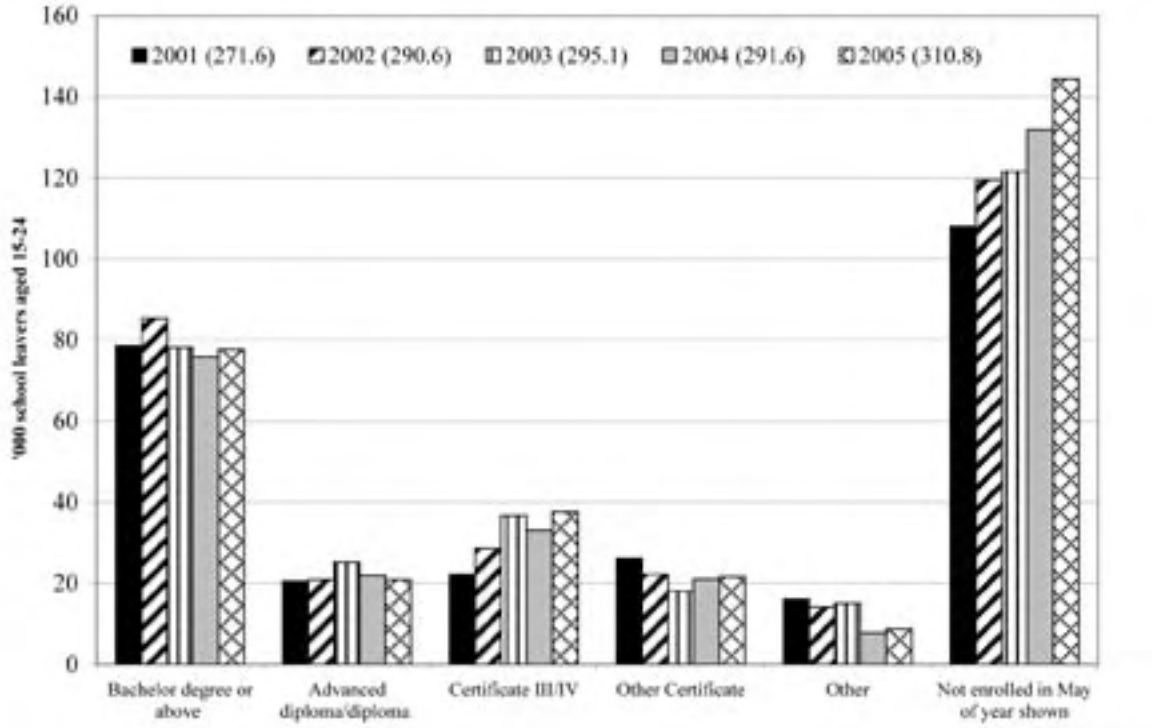
If Australia is to experience continued growth in productivity per worker, the skill level of its workforce must be maintained or improved. This can be done by enhancing the skills of those already in the workforce, by increasing the intake of skilled migrants and/or by improving the skill level of new entrants to the labour market. There is a place for both the first and second options. Nonetheless, the most compelling case is for the third. This is because new entrants offer by far the greatest potential source of additional skilled workers for Australia. An improvement in their skill levels will also generate a set of positive social consequences. These include a reduction in the social isolation of men whose career and partnering outlook is blighted by limited education and thus poor job prospects. A corresponding reduction in the share of unpartnered women who are lone parents might also be expected.[7]

THE CURRENT LEVEL OF TRAINING OF YOUNG AUSTRALIANS

The potential for additional training amongst young people is evident from the information summarised in Figure 3, which shows the situation of Australian school leavers for the years 2001 to 2005. The data are based on a survey supplementing the Labour Force Survey as of May each year. In 2004, nearly 311,000 young people left school (most would have been in their late teens). This figure is a good indicator of the current annual number of young people available to enter the workforce or to take on post-school training in Australia. The data show that around 166,500 of these school leavers in 2004 were engaged in some form of post-school study in May 2005 (some six months after the end of the school year). Of these, nearly 80,000 were doing a university degree and another 38,000 had commenced training at the Certificate III or IV level.

For those leaving school in 2004, Figure 3 shows that 144,400 (or 46 per cent) were not enrolled in any post-school education (whether part-time or full-time). This number has increased sharply relative to those leaving school in 2000.

FIGURE 3:
School leavers aged 15– 24 years (a), educational situation in May the year after leaving school, Australia, May 2001 to May 2005 ('000s)



Source: Australian Bureau of Statistics, Education and Work, Cat. No. 6227.0, annual publications, May 2001 to 2005

These figures do not support the idea that educational planners need to discourage parents from sending their children to university in order to boost the numbers taking on trade training. There are very large, and growing, numbers of school leavers who are not doing any post-school training immediately upon leaving school. There is plenty of scope to increase the proportion of young people studying in both the higher education and vocational training sectors. At least as far as the overall numbers of potential students are concerned, there is no incompatibility between expanding opportunities for training in both the university and trade arenas.

One response to this argument may be that the immediate post-school situation is not a good indicator of longer term training outcomes for young people. Table 1 indicates the situation for young people aged 19 to 20 by their employment status and participation in education as of 2001. It should give a better idea of school leavers' intentions regarding post-school training, since a couple of years have elapsed from the time they left school. In the case of the 20 year olds, the table shows that half were not engaged in any post-school training (whether on a full-time or part-time basis). Of these, nearly half were employed full-time and the other half had weaker links with the labour market in that they were employed part-time, unemployed or not in the workforce. The situation was similar for the 19 year olds. Thus, at a time when Australian employers are crying out for skilled workers, around half of the young people aged 19-20 (in 2001) were not undertaking any form of post-school education.

Another response may be that if young people not engaged in post-school education are in full-time employment, this is a satisfactory situation, since they are likely to be gaining a reasonable income and work experience. But if this engagement in the full-time workforce is at the expense of gaining post-school skills, it may have serious long-term implications for their career prospects.

From the point of view of the stock of potential skilled Australians, this component of Australia's youth constitutes a very large reserve. As Table 1 shows, in 2001 this group of full-time workers made up 21 per cent of all 19 year olds and 25 per cent of 20 year olds. Apart from an unknown proportion of these full-time workers who may have completed a TAFE or other short duration course between school and attending work full-time, the great majority would not have completed any post-school training.

The other component of those not attending an educational institute (consisting of those employed part time, the unemployed and those not in the labour force) is a bigger worry. They are gaining neither skills for the future nor full-time work experience. As of 2001, they made up slightly more than one quarter of all 19 to 20 year olds.

TABLE 1:
Educational attendance and labour force status, persons aged 19-20, Australia, 2001, per cent

EDUCATIONAL AND EMPLOYMENT STATUS		AGE	
		19 YEARS	20 YEARS
Total attending (full or part-time)		49	45
Not attending	Employed full-time	21	25
	Other employed	12	12
	Unemployed	7	7
	Not in labour force	7	7
	TOTAL	46	50
Not stated attendance		5	4
TOTAL		100	100

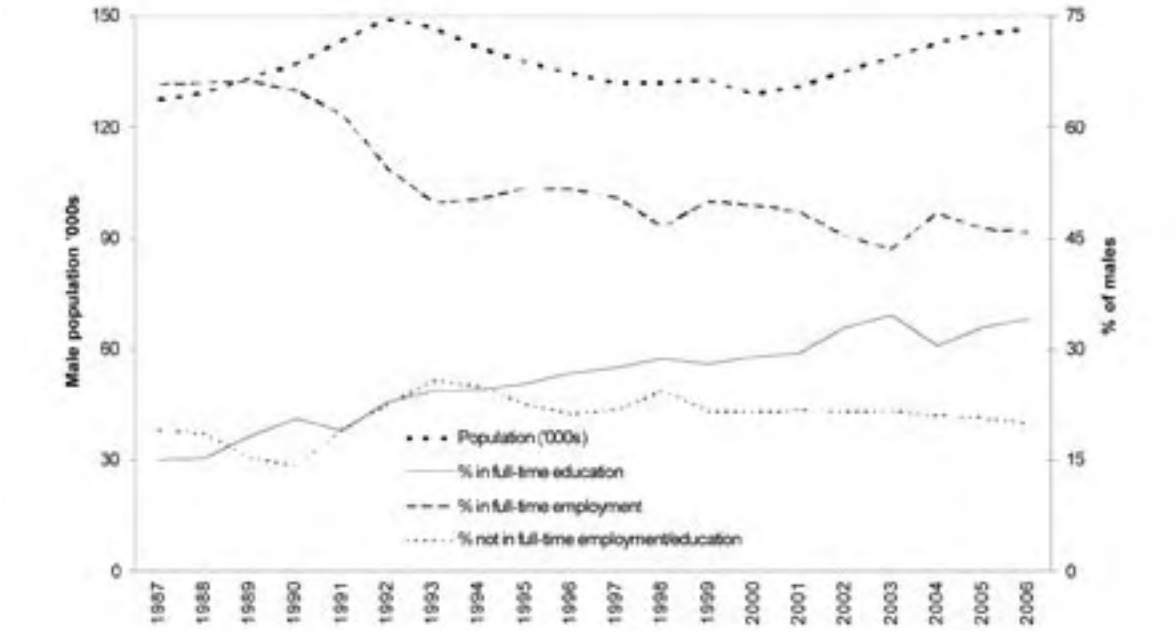
Source: ABS, Census 2001, customised table

Until the results of the 2006 Census become available, it will not be possible to replicate the figures provided above. However, it is possible to provide a trend analysis on some of these indicators from the Australian Bureau of Statistics (ABS) *Labour Force Survey*. The *Labour Force Survey* provides estimates of the labour force status of young people by whether they are attending full-time education or not. Unfortunately the Survey does not indicate whether persons not attending education full-time are undertaking part-time education.

Figures 4 and 5 detail the situation of 20 year old males and females between 1987 and 2006. Very few persons would have completed a substantial three-year post-school qualification by age 20. Figure 4 shows that the proportion of 20 year-old men who are neither attending full-time education nor in full-time employment (that is they are either working part-time, are unemployed or are not in the labour force) has remained at about 21 per cent of the entire group of male 20 year olds since 1996. In the case of 20 year-old women, the comparable share in this category was around 33 per cent in 1995 and 1996. Since that time their share has dropped a little, to around 30 per cent.

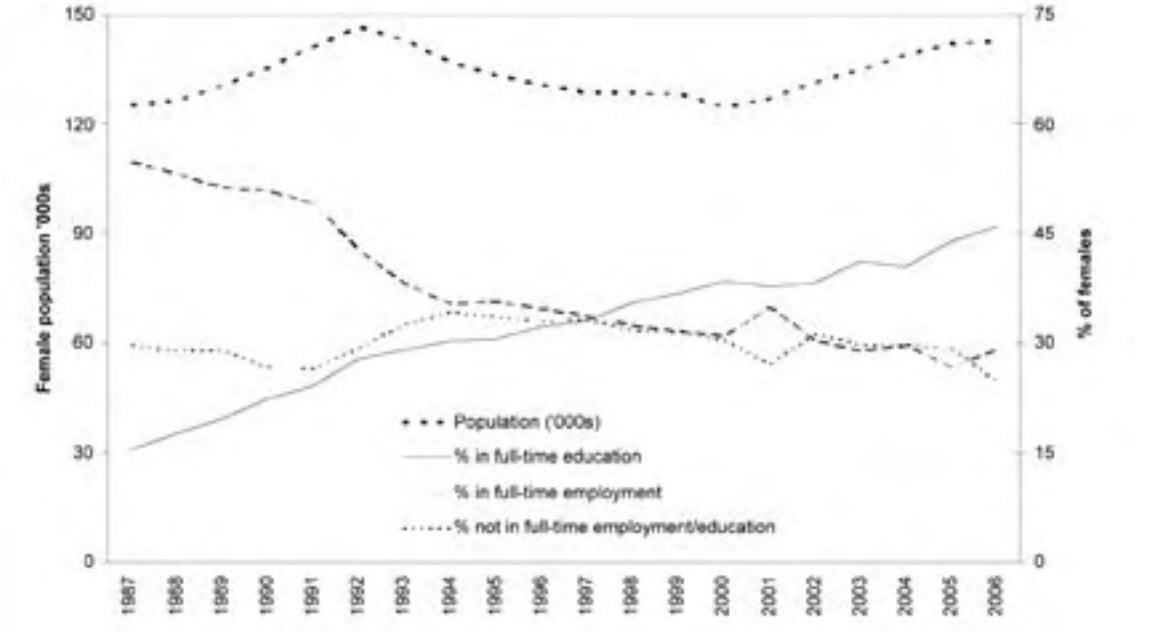
The figures also show that there has been an increase in the proportions of 20 year-old males and females who are in full-time education to about 34 per cent of males and 46 per cent of females by 2005 and 2006. The Survey does not indicate where this growth is occurring; though, for reasons discussed below, it is unlikely to be in the university sector. This expansion in the share undertaking full-time education appears to be at the expense of those employed full-time. While a welcome outcome as regards to skills training, this still leaves a very large proportion of 20 year-olds who are neither working full-time nor undertaking post-school education on a full-time basis. A few could be attending institutions on a part-time basis.

FIGURE 4:
Males aged 20 years by labour force and full-time educational attendance (Average 12 months to the time period ending March each year)



Source: Australian Bureau of Statistics, Labour Force, Australia, Cat. No. 6291.0.55.001, Detailed - Electronic Delivery, Table 03c. Labour force status by educational attendance, age and sex

FIGURE 5:
Females aged 20 years by labour force and full-time educational attendance (Average 12 months to time period ending March each year)



Source: Australian Bureau of Statistics, Labour Force, Australia, Cat. No. 6291.0.55.001, Detailed - Electronic Delivery, Table 03c. Labour force status by educational attendance, age and sex

Why don't more young people take on post-school training? In the case of higher education, it is largely because the number of subsidised places in Australian universities has not increased since the Coalition came to office in 1996. There had been an increase in the numbers and higher education participation levels over the late 1980s to the early 1990s. However, this increase came to an end in the last years of the Keating Labor Government. Figure 6 details the number

of students commencing undergraduate courses in Australian universities in all fields of study over the period 1992 to 2005. Under the Howard Government the numbers of commencements reported by higher education institutions have only increased marginally over the period 1996 to 2005 (even though, as shown earlier in Figures 4 and 5, the underlying population in the school-leaver age group has expanded since 2000).

Figure 6 provides the relevant data. It shows the number of commencements for all domestic undergraduates and for those commencing courses in engineering and related technologies. There have been changes to the methodology universities use to report commencement data which make it difficult to provide comparable data over the decade.[8] The most important change occurred in 2001. Official commencement figures since 2001 marginally inflate the number of commencements relative to earlier years, with the margin indicated by the gap between the two points on the Figure for 2001.

The focus is on commencing undergraduate domestic students because their numbers constrain the total training effort. To the extent that a higher proportion of undergraduates do double degrees or go on to higher degrees, this will increase the number of completions (when undergraduate and postgraduate completions are added together). It will also add an element of skill deepening, but it will not increase the number of graduates entering the workforce.

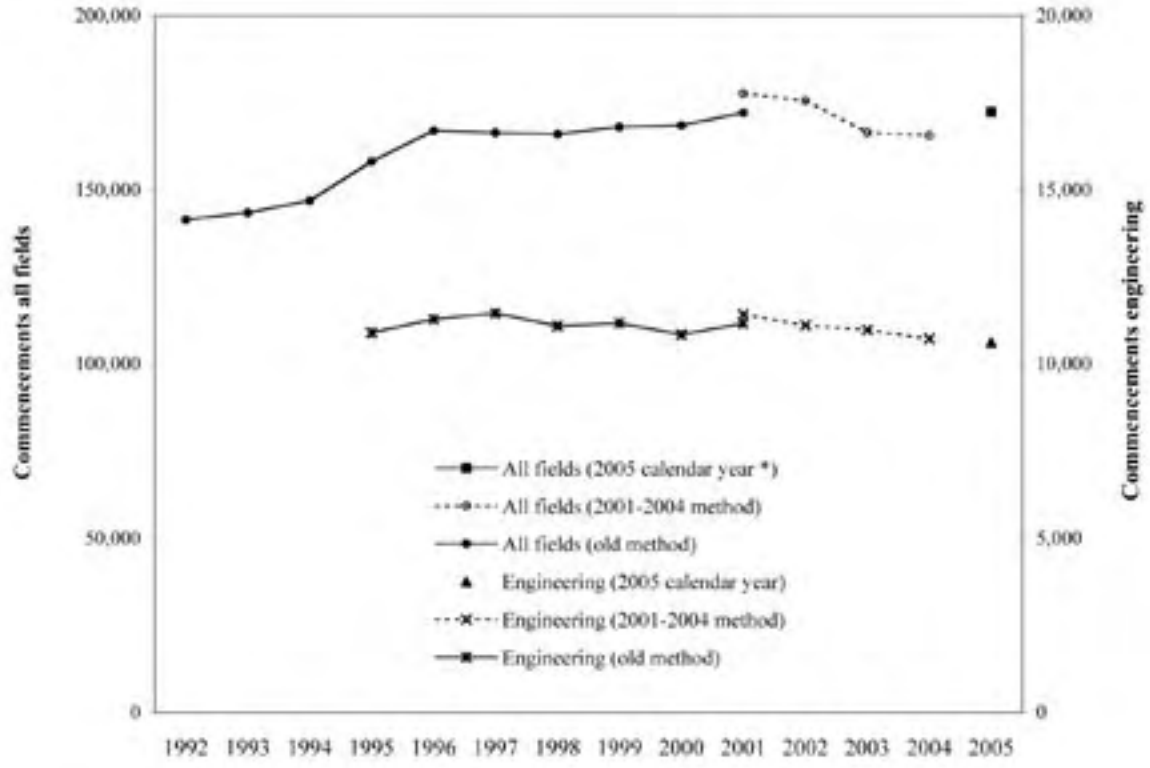
The actual number of domestic undergraduates starting courses may be affected by a variety of factors other than the number of funded places. Some universities may not be able to fill their quota of such places, though this has been uncommon until very recently, and some universities may be prepared to take on additional students outside their allocation of fully funded places. The latter practice was common in the late 1990s and early years of this century. By 2002, there were 371,500 fully funded undergraduate places at Australian universities but 410,522 enrolments. This means that there were 39,000 undergraduates enrolled for whom universities only received marginal funding (around $2,706 per student according to DEST) from the Government at this time.[9] This 'over-enrolment' number helps explain why Figure 6 shows a slight peak in undergraduate commencement numbers around 2001 and 2002. It also explains why undergraduate completion numbers increased in 2003 and 2004 relative to the preceding years.

The Australian Government has recently announced its decision to expand the number of university places. As part of the *Our Universities: Backing Australia's Future* statement, the Government indicated that an additional 9,100 starting places would be funded, beginning in 2005. In 2006 there was a further announcement that an additional 4,420 places would be funded, starting in 2007 (some of which had been flagged earlier in the *Backing Our Universities* statement). However, at the same time, universities have been required to eliminate the marginally funded places noted above. The effect is that there has been little or no net increase in the numbers of places available for domestic undergraduates.

Universities benefit from these recent policy initiatives in that they are exchanging marginal places for fully funded places. The Government has required universities to justify their claims for a share of these places by reference to evidence of skill shortages in the proposed fields of study. When the allocation of these places was announced in July 2006, they were mainly in the health area, particularly for medical, nursing and clinical psychology training. There were also an additional 365 places for engineering.[10]

It appears, however, that the Government has not adequately addressed the larger issue, which is the level of participation of young people in the higher education system. As is argued below, this is well below what it should be given employment trends for persons with managerial, professional and associate professional occupations.

FIGURE 6:
Domestic undergraduate commencements in Australian universities, all fields 1992 to 2005, and engineering and related technologies 1992 to 2005



* The data for all fields 2005 exclude 3,359 places in new higher education providers previously excluded from the data collection. Only one of these places was in the engineering field.

Source: Derived from various Department of Education, Science and Training aggregated datasets and publications

There is one further matter needing attention before the changing labour force structure is explored. Recent reports indicated that the number of people applying for an undergraduate place has fallen in 2005 and 2006 relative to earlier years.[11] The president of the Australian Vice Chancellors Committee (AVCC), Gerard Sutton is quoted as saying that, 'in a sense, the government has eliminated the unmet demand'.[12] Indeed, some universities have been unable to fill their quota of funded places in 2006. As a consequence the number of applicants who did not receive an offer of a university place has diminished (though it is still substantial). According to the Minister for Education, Science and Training, Julie Bishop, 'this year more than 90 per cent of eligible year 12 students received a university offer, the best result in more than two decades'.[13]

It might seem that young people completing school are voting with their feet in not taking up available university places. If so, this behaviour could be read as a vindication of the Government's position (summarised earlier) that too much attention has been paid to the higher education sector and not enough to the trades.

This reading of the situation is misplaced. The universities unable to fill their allotment of funded places in 2006 appear to be mainly regional universities. Access to regional universities has been relatively easy in the recent past, with the ENTER[14] scores required for applicants to receive an offer being far lower than is the case for metropolitan universities. For example, in Victoria, of year 12 secondary graduates in 2003, only 11 per cent of those who received an offer from a university in Melbourne had an ENTER below 70. By contrast, 51 per cent of those who received an offer from a regional university in Victoria had an ENTER below 70.[15]

It may well be that in the current economic situation, where the overall number of full-time jobs is growing rapidly, that some potential students whose academic record is modest have decided

to take the money. Many others are likely to have been discouraged from attending university by the HECS[16] debt that they will accumulate while doing their degree, as well as the likelihood that they will not be eligible for the means-tested government financial assistance (Youth Allowance) paid to higher education students. Since the Coalition came to power in 1996 the rules governing access to the Youth Allowance have tightened, such that the great majority of school leavers contemplating going to university full-time have to depend on their parents to cover their living expenses.[17] In these circumstances the existence of a buoyant job market may swing the balance in favour of work rather than study.

From the point of view of the students who take the work, rather than the study, option, the implications are worrying. This is because the long-term job prospects of those without post-school training do not look promising. Income levels of adults with university credentials are far higher than those of adults with year 12 or lower level education.[18] Nor is this a good outcome from the point of view of Australian employers. As argued below, most of the job growth in the foreseeable future is likely to be at the managerial, professional and associate professional level. With the impending retirement of the baby boomers, the problems of filling skilled vacancies will become acute if there is no increase in the numbers of young people undertaking university-level training.

Some sceptics may respond by arguing that there is only a limited stock of young people capable of successfully completing degree-level courses. One reason for doubting this argument is that in metropolitan areas there are substantial communities of young people who, due to their home location, have limited access to a university place. This is the case for many outer suburban residents, where only a minority of those completing year 12 go on to university. For example, in the rapidly growing outer South-Eastern suburban growth corridor of Melbourne, only 29 per cent of government school students who finished year 12 in 2003 received a university offer, down from 46 per cent in 2000.[19] Another, even more salient, rebuttal of the sceptics argument is that, as pointed out earlier, the size of the underlying population in the relevant age group will increase, and hence the potential stock of young people capable of completing a higher education course will also increase.

Given the trends in the Australian job market, higher education should not be conceived as the province of the cognitive elite. Access needs to be widened. The Government should be turning its attention to ensuring that university places are located where they are accessible to young people and in fields of study that are in demand. There is also a need to encourage adults who bypassed opportunities to undertake tertiary studies as school leavers to take up this option later in their working lives. If these objectives are to be fulfilled, it will require increased sensitivity on the part of universities to structure their course offerings to the vocational aspirations of prospective students and to the needs of employers. (This is not an argument for the eradication of non-vocational studies – rather, as stated, for more sensitivity to the current labour market demand). The Government's recent (July 2006) decision to locate additional fully funded places in fields such as medicine and nursing in locations where shortages are evident and to require universities to justify their claims for new places in terms of market need is a move in the right direction. So is the Government's statement of October 2006 that it will fund an additional 500 engineering places from 2008. This statement also acknowledged the high proportion of young adults who lack post-school training. The additional funds allocated to subsidise vocational skill training for these young adults is a timely recognition of this situation.[20]

But much more needs to be done, including sharply increasing the number of fully funded domestic places and a reversal of the recent trend to make access to student financial aid tougher. More generous access to financial assistance for living expenses would send a powerful welcoming message to young people contemplating whether to take on the challenge of higher education. The current restrictive approach sends all the wrong messages at a time when the Australian Government should be encouraging such participation.

THE DEMAND FOR GRADUATE LEVEL SKILLS

There is a more general compelling case for the expansion of higher education opportunities for young Australian residents: Australia's occupational structure is becoming increasingly dominated by the higher skilled end of the occupational spectrum. Between 1996-97 and 2005-06, employment in Australia increased by 20 per cent (see Table 2). But in the case of managers (not including farm managers – whose numbers are diminishing rapidly), the growth in employment over this period was 56 per cent; for professionals, it was 37 per cent; and for associate professionals, 39 per cent. By 2005-06, 38 per cent of employed persons in Australia were holding managerial (excluding farm managers), professional or associate professional jobs.

This pattern seems likely to continue. Analysis of the occupational makeup of Australian industries reveals a sustained trend towards a higher ratio of managerial, professional and associate professional workers relative to lower level clerical and blue collar workers. Even in the manufacturing area, where, as shown in Table 3, there has been an overall drop in employment between 1996-97 and 2005-06, the numbers of persons employed at the managerial, professional and associate professional level grew by 47, 14 and 13 per cent respectively. At the same time, the numbers of clerical and blue collar workers fell. In the case of production and transport workers, their numbers fell by 27 per cent.

TABLE 2:
Persons employed for selected managerial, all professionals, associate professional occupations, and total employed, number of persons and change, Australia, 1996-97 to 2005-06^

	THOUSAND PERSONS										CHANGE 1996-97 TO 2005-06	
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	'000s	%
Generalist Managers	122	115	119	131	131	144	141	154	179	190	58	44
Specialist Managers	260	268	281	263	300	336	337	347	403	440	140	47
Managers – nfd	0	0	0	0	0	1	1	7	33	16	16	-
Managers (excl Farm Mgrs)	382	384	401	394	431	480	478	509	615	646	215	56
Science, Building & Eng'g Prof.	159	177	179	170	177	177	183	183	202	219	60	38
Business & Information-Prof.	366	397	442	471	501	513	534	546	534	565	199	54
Health Professionals	281	280	287	305	315	313	324	328	347	358	78	28
Education Professionals	364	370	374	370	379	390	408	428	422	440	76	21
Social, Arts & Misc. Prof.	246	263	268	276	288	304	307	320	323	348	102	41
Professionals – nfd	0	0	0	0	1	1	1	4	8	6	6	-
Professionals	1,416	1,487	1,549	1,592	1,660	1,699	1,757	1,809	1,835	1,936	520	37
Associate Professionals	889	884	915	1,004	1,038	1,082	1,140	1,166	1,234	1,236	348	39
TOTAL EMPLOYED	8,355	8,476	8,641	8,835	9,016	9,144	9,378	9,528	9,800	10,009	1,654	20

^ Numbers of persons are average of quarterly data for each year. Only three quarters were available for 2005-06
nfd = not further described

Source: ABS Labour Force Survey, Table ST E08_Aug96

There can be little doubt that the pattern just described will continue. Technological changes tend to make less skilled positions redundant. Meanwhile the complexities of contemporary technology and the globalised competitive environment require more managerial and technical input within organisations.

TABLE 3:
Persons employed in the manufacturing industry by major occupation, Australia, 1996-97 to 2005-06^, and change 1996-97 to 2005-06

	THOUSAND PERSONS										CHANGE	
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	No.	%
Managers & Administrators	82	86	82	83	90	105	105	105	114	121	39	47
Professionals	94	101	95	98	103	107	107	104	108	107	13	14
Associate Professionals	52	54	51	59	51	56	60	55	66	58	7	13
Tradespersons	298	292	281	292	304	282	286	282	285	278	-20	-7
Adv. Clerical, Service	37	34	33	34	37	32	29	28	24	24	-13	-36
Intermed. Clerical, Sales, Serv.	102	105	105	110	112	107	116	100	95	97	-4	-4
Intermed. Prod'n & Transport	239	218	216	208	208	204	208	194	178	174	-65	-27
Elem. Clerical, Sales, Service	29	27	20	24	19	17	21	18	23	20	-9	-30
Labourers & Related Workers	197	206	197	192	189	173	182	185	192	183	-14	-7
TOTAL	1,129	1,123	1,080	1,099	1,113	1,081	1,114	1,070	1,086	1,063	-67	-6

Source: Calculated from ABS Labour Force Survey, Employed Persons (ST E09_Aug96) by Industry Division, Occupation Major Group, Sex

^ Numbers of persons are average of quarterly data for each year. Only three quarters were available for 2005-06

This greater managerial/professional/associate professional share of the workforce will alone mean that more persons with university training are required. In addition, the share of these positions being filled by persons with degree-level qualifications is growing. Table 4 shows this trend over the years 1996 and 2001 for persons aged 25-44 years. It will not surprise that most professional workers hold degree-level qualifications (66 per cent of professionals aged between the ages of 25 and 44 years in 2001), since these are often a requirement of professional practice. It may surprise that the share of managers aged 25-44 years who have these qualifications is growing rapidly as well. In 1996, 26 per cent of managers and administrators held degree-level qualifications. By 2001, this had risen to 32 per cent. There is also an increasing trend (off a low base) for associate professionals to hold degree-level qualifications.

The other side of the coin is that the share of managers and administrators and associate professionals aged 25-44 who lack post-school qualifications at the degree, diploma or Certificate III or IV level is shrinking rapidly. These findings highlight the concern expressed above about the limited career prospects for young people who have not obtained any post-school qualifications. They are, in effect, being cut off from the most rapidly growing, skill-intensive and well-remunerated positions in the Australian labour market.

It is clear that any official educational policy which, in effect, downgrades the need for training at the higher education level will run counter to the needs of both Australian employers and Australian youth. The appropriate scale of training is discussed further below. In Australia, as of 2001, just 18 per cent of males aged 25-29 and 25 per cent of females were degree-qualified. This figure appears to be well short of the level required when considered in the light of the labour market trends cited above. As can be calculated from Table 2, by 2005-06, 38 per cent of all employed persons are currently employed at the managerial, professional or associate professional level.

TABLE 4:
Employed persons aged 25-44 by broad occupation and qualification level, 1996* and 2001, per cent

	DEGREE OR HIGHER		DIPLOMA/ CERT. IV		CERTIFI-CATE III		OTHER# /NO QUALS		EMPLOYED PERSONS		EMPLOYED PERSONS ('000S)		CHANGE 1996-2001	
	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	1996	2001	000s	%
PERSONS AGED 25-44 YEARS														
Managers & Administrators	26	32	10	11	14	15	49	41	100	100	349	365	15	4
Professionals	60	66	18	14	3	3	20	17	100	100	785	840	54	7
Associate Professionals	14	18	13	17	16	15	58	49	100	100	482	520	38	8
Tradepersons	2	2	4	5	60	63	34	30	100	100	520	520	0	0
Clerical, Sales & Service Wkrs	8	10	7	10	6	9	79	71	100	100	1,064	1,100	36	3
Prod & Tspt Workers; Labourers	3	3	2	3	13	16	82	78	100	100	655	650	-5	-1
TOTAL^	19	23	9	10	16	17	56	50	100	100	3,945	4,063	118	3

* 1996 data are the broad equivalents of the 2001 occupations and qualification levels.

Other includes the lower level qualifications of Certificate I and II.

^ Total includes employed persons who did not state their occupation. Column totals relate to Census years by qualification levels.

Source: ABS, Census 1996 and Census 2001, customised tables held by CPUR

Trade training

In the case of trade training, the State and Federal Governments do not hold the levers as regards the numbers beginning apprenticeships. Rather, the key factor is the willingness of employers to take on apprentices. Until the last few years employers have been reluctant to take on the responsibility. This has changed in some fields as skill shortages have become desperate and as government incentives to employers to take on apprentices have improved: the number of persons starting an apprenticeship has doubled between 1995 and 2005 (see Table 5).

As Table 5 shows, this is partly because of the advent of 'new apprenticeships' outside the traditional metal, electrical and construction fields (such as in the fields of horticulture and food). But the numbers in the 'traditional' construction and electrical fields have also increased sharply, reflecting the employers' concerns noted above.

TABLE 5:
Annual traditional apprenticeship commencements, 1996 to 2004, Australia

OCCUPATION	1996	1997	1998	1999	2000	2001	2002	2003	2004
40 Trades & related - nfd	0	(a)	(a)	(a)	40	90	210	160	190
41 Mechanical & Fabrication	5,450	5,010	5,100	4,550	3,920	4,380	5,150	5,890	7,210
42 Automotive	5,350	5,170	5,780	7,060	6,910	6,300	6,620	7,350	8,990
43 Electrical & Electronics	4,050	4,010	4,490	5,300	4,910	4,710	5,340	6,270	8,480
44 Construction	5,260	6,460	8,830	10,660	9,820	8,180	10,970	13,020	15,870
45 Food	4,340	4,170	4,530	4,950	5,130	5,380	5,380	5,950	6,940
46 Horticulture	850	1,010	1,170	1,600	1,840	1,880	1,790	1,610	1,970
49 Other Trades	4,110	4,230	5,110	5,860	5,710	5,520	5,750	6,370	7,820
TOTAL TRADES	29,410	30,060	35,010	39,980	38,280	36,440	41,210	46,620	57,470

Source, P. Toner, prepared from NCVER, 2005, unpublished

The recent upsurge in apprentice numbers suggests some caution about the notion that a resolution of the 'trade crisis' requires parents to push their children into apprenticeships. They are already moving into apprenticeships in increasing numbers as a consequence of the employers' changing attitudes towards apprenticed labour.

A further note of caution concerns employment patterns for tradespersons. For Australia as a whole, between 1996-97 and 2005-06 there was a ten per cent increase in the employment of tradespersons, compared with a 20 per cent increase for total employment. Table 6 indicates that this increase in employment for tradespersons was not spread evenly. There was very little growth in the mechanical, automotive and electrical fields over this period. Most of the growth in trade employment was in the construction area and most of this occurred in the last few years. Much of the demand for these skills could dissipate if the Australian property boom deflates.

TABLE 6:
Persons employed in trade occupations, Australia, 1996-97 to 2005-06^

	THOUSAND PERSONS										CHANGE 1996-97 TO 2005-06	
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	'000s	%
Mechanical & Fabrication Engineering Tradespersons	206	207	201	201	205	197	193	208	207	210	4	2
Automotive Tradespersons	138	140	135	131	128	137	135	140	135	133	-5	-4
Electrical & Electronics Tradespersons	181	179	179	186	172	168	192	185	183	190	9	5
Construction Tradespersons	260	259	271	283	281	284	291	308	325	342	82	32
Food Tradespersons	89	85	87	89	91	88	81	84	81	83	-6	-6
Skilled Agricultural & Horticultural Workers	69	71	73	77	70	77	75	83	82	95	26	38
Other Tradespersons & Related Workers	203	205	200	212	211	204	211	210	218	207	5	2
Tradespersons & Related Workers – nfd	0	0	0	0	0	0	1	2	7	4	4	-
Tradespersons & Related Workers	1,145	1,147	1,146	1,179	1,159	1,156	1,179	1,220	1,237	1,263	118	10

^ Numbers of persons are average of quarterly data for each year. Only three quarters were available for 2005-06

nfd = not further described

Source: ABS Labour Force Survey, Table ST E08_Aug96

Conclusion

The advent of a sensible policy on training in Australia will require the clearing away of a number of myths. One is that there is too much emphasis on university training. Another is that there is an inherent conflict between expanding trade training and the maintenance, or increase, in the level of university training. This idea depends on another myth, that there are not enough young people to sustain increases in both fields.

The reality is that there has been very little increase in the number of domestic students starting university level training since 1996. There has been a substantial overall increase in the training effort of Australian universities since 1996, but it has been for overseas students. As to the concern that there are not enough young Australian residents to support an increase in training levels at university and trade level, the fact is that around half of those aged in their late teens and early twenties are not involved in any form of post-school training. They constitute a huge reserve of persons who potentially could be attracted into educational institutions.

The case for an increase in the proportion of young people involved in higher education is clear cut. It derives from the rapid growth in both the numbers and proportion of the Australian workforce who are employed in managerial, professional and associate professional occupations. The Government has in a de facto sense acknowledged the need via its decisions to escalate the size of the immigration program which has led to a sharp rise in the net number of overseas professionals migrating to Australia. The first priority in filling any such vacancies in the Australian workforce should be resident young people. But these young people will be in no position to compete for the projected expansion in job opportunities unless they can gain the necessary skills, and that requires an increase in the number of fully funded higher education places.

There is no doubt that many skilled persons will be lost to the Australian workforce with the impending retirement of the baby boomers. This means that it is all the more important that Australia's training regime focuses where the greatest potential lies. This is amongst Australia's young people. Fortunately their numbers will increase over the next couple of decades.

The Coalition Government has begun to respond to these concerns, with announcements in July and October 2006 that it will fund additional university places in 2007 and 2008. But the government has a lot of ground to recover. Over the past decade there has only been a marginal increase in fully funded places for domestic students. Also, the Government has reduced access to the student Youth Allowance and increased the HECS debt that students accumulate. During the Coalition's decade in office the potential of the higher education sector to contribute to Australia's emerging workforce demands appears to have been neglected.

A new higher education policy is required which sharply increases the number of funded places. Furthermore, the additional places need to be relevant to the vocational needs of these prospective students. The places should be located in campuses accessible to these potential students, including in the poorly served outer-suburban areas of the major cities. The new policy will have to be accompanied by an opening of access to student financial support so that potential students from families of modest income can afford to take on a university course.

Endnotes

1 The Hon. Julie Bishop, Minister for Education, Science and Training, 'New statistics show increase in number of university students,' Media release, 12 September 2006

2 B Birrell, V Rapson, C Hourigan, Men and Women Apart, Australian Family Association, Melbourne, 2004, pp15-16

3 Sophie Morris, 'Too clever? Dumb question,' *Australian Financial Review*, 8 March, 2005, p. 61

4 Brad Newsome, 'Finding what works for generation Y', *The Age*, June 3, 2006

5 Bob Birrell, Virginia Rapson and T. Fred Smith, *Australia's Net Gains From International Skilled Movement*, Department of Immigration and Multicultural Affairs, 2006, p. 8

6 ibid., p. 27

7 For an exposition of these relationships, see B. Birrell, V. Rapson and C. Hourigan, *Men and Women Apart*, Centre for Population and Urban Research, 2004, p. 16 and 29; and B. Birrell and V. Rapson, *A Not So Perfect Match*, Centre for Population and Urban Research, 1998, p 37.

8 Before 2001 the data were collected at one point of time during each year. The method of counting from 2001 to 2004 included persons who were enrolled in a course at any time of the year (then defined as 1 September to 31 August). The data shown for 2005 (the collection period now changed to 1 January to 31 December each year) is the published DEST figure (175,711) less 3,359 places provided by a range of private higher education providers previously not emumerated in the DEST data.).

Engineering commencements: The data take into account the coding of Combined Courses into two fields of education since 1997. This mainly occurs at the bachelor degree level. A new classification of fields of education was also introduced in 2001. Engineering benefited from the reclassification of around 200 commencing undergraduate students from Nautical Science to Marine Engineering. Engineering commencements derive from aggregate DEST data files held by CPUR. The Nautical Science numbers have been added to the numbers studying engineering and surveying courses.

9 *Our Universities: Backing Australia's Future*. Fact Sheet No. 3, Department of Education, Science and Training, Canberra, 2004. http://www.backingaustraliasfuture.gov.au/fact_sheets/pdf/fs3.pdf

10 Media Release, Hon Julie Bishop, MP. 'Students to benefit from more than 4600 new university places,' 24 July 2006

11 Lisa Macnamara and Brendon O'Keefe, 'Figures confirm falling demand,' *The Australian* 24 May 2006.

12 ibid.

13 Media Release, Hon Julie Bishop, op cit

14 Equivalent National Tertiary Education Rank

15 Daniel Edwards, et al. *Unequal Access to University Places*, Centre for Population and Urban Research, Monash, University, 2005, p. 29

16 Higher Education Contribution Scheme, now known as the Higher Education Loan Programme (HELP)

17 Bob Birrell, Ian Dobson and Fred Smith, 'The new Youth Allowance and access to higher education,' *People and Place*, vol. 7, no 3, 1999

18 Access Economics, *The Economic Benefit of Increased Participation in Education and Training*, Dusseldorp Skills Forum, 2005, p. 8

19 Daniel Edwards, op cit, p. 23

20 Transcript of the Prime Minister, The Hon John Howard MP, Skills For The Future, Ministerial Statement To Parliament, 12 October 2006, http://www.pm.gov.news/speeches