Future skill requirements and implications for TAFE Institutes.

Predicting the future is a mug's game. There are too many unknowns and many ways of achieving a particular outcome. However, it is useful to put some sort of structure on the notion of skill requirements and to think about the likely effects of trends that we are confident will occur. The paper discusses a 'market segmentation' approach to student demand and then considers a number of trends that will impact on that demand.

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Future skill requirements and the implications for TAFE Institutes

Predicting future skill requirements is a mug's game. Apart from innate uncertainty this is for two main reasons. The first is that a given outcome, say the number of qualified persons working in a particular occupation, depends on the supply of and the demand for such people. The supply will depend on a whole range of factors—

- the potential pool, driven by demographics and migration
- the cost of undertaking the necessary training
- the number of training positions available
- the attractiveness of the occupation, covering things such as working conditions, remuneration, and future prospects.

Similarly, demand will depend on another range of factors, such as technology and the cost of hiring such a person.

The second reason why prediction is so difficult is because of the unknown nature of underlying parameters: institutional sittings and economic activity. For example, the number of apprentices and trainees has been dramatically affected by the Commonwealth's new apprenticeship program. However, the number is also highly dependent on the level of economic activity and a downturn in the economy would directly impact on the numbers.

The point is that there is no 'correct' outcome. While there can be skill shortages in the short term, in the long term the concept makes little sense, because the labour market will adjust. For example, there is undoubtedly a shortage of registered nurses. In the longer term, this will resolve itself either through an expansion of supply or by rearranging the way health care is delivered.

The above discussion is not intended to imply that TAFEs should not think about future skill requirements. But it is intended to suggest that a rigid manpower planning approach will not be very useful and that the ability of TAFEs to adjust is of paramount importance.

In terms of thinking about the future this paper takes two approaches. First, it looks at the current VET student body and how this has been changing. Second, it looks at a number of wider economic and social trends that will impact on skill requirements. The paper ends with some overall comments.

1. The VET student body

The thing that immediately strikes one about VET is the size of the student body. In 2002 there were around 1.76 million students according to NCVER statistics. This represents around 13% of the working age population. The figure is even more remarkable when the limited scope of the NCVER collection is realised —it only covers Registered Training Organsiations in receipt of public funds.

However, this huge figure covers a very wide range of students—from those undertaking a full-time course over the whole year, to those undertaking a single module. To make

sense of it NCVER (following work undertaken by the WA Department of Education among others) is adopting a 'segmentation' approach.

This approach is based on the motivation for study, and mainly reflects where an individual is in the educational/work life cycle.

Table 1 presents 2001students, based on the *Student Outcome Survey.*

Table 1. Per cent of students by motivation for undertaking training, 2002

Segment	Graduates	Module completers
Labour market entrants	11	8
Apprentices and trainees	22	11
Career changers	20	17
Skill improvers	23	28
Bridgers	7	4
Self-developers	15	29
Self-employed	3	4
Total	100	100

Source: Student outcomes survey 2002[1]

Some indication of the differences between the segments can be seen from Table 2 that contains data on age, sex and post-school qualifications.

Table 2: Students by demographic characteristics, 2002

	Graduates			Module completers		
	Median age	Female (per cent)	Post-school quals (per cent)	Median age	Female (per cent)	Post-school quals (per cent)
Labour market entrants	20	55	34	19	50	25
Apprentices and trainees	21	33	42	22	28	47
Career changers	37	65	69	37	57	64
Skill improvers	36	55	73	38	48	71
Bridgers	22	63	47	20	57	37
Self-developers	30	65	52	38	57	49
Self-employed	35	45	72	40	53	64
Total	28	54	57	34	50	56

Source: Student outcomes survey 2002

Tables 1 and 2 focussed on persons who had completed, at least for the time being, their TAFE studies. However, a better picture of the overall extent of participation in VET is given by the provider collection that captures all students. Unfortunately, we cannot describe these data in terms of the segments that are base on motivation for study. However, a quick perusal of table 2 suggests that an age breakdown will capture many of the same features.

[1] Data on the VET sector are bedevilled by limitations in scope and coverage. Tables 1 and 2 refer to persons who have completed studies at TAFE institutions. Table 3 and 4 refer to students in the AVETMIS provider collection covering TAFES (both government funded load and fee paying students and the government funded load of private providers.

We present the data in two ways. First we count the number of persons (analogous to the data we presented from the student outcome survey). Second we count the number of contact hours, to give a better indication of the distribution of effort. Table 3 presents the data classified by AQF level, while Table 4 presents the data by broad field of study.

Table 3: Vocational students and annual hours by qualification and age group for Australia 2001

	Age 24 or under	Age 25 or over	Age 24 or under	Age 25 or over
	Students		Hours	
AQF diploma or higher	5.3	6.6	11.2	9.0
AQF certificate III & IV or equivalent	14.6	18.3	20.1	18.9
AQF certificate I & II	13.4	11.6	17.9	10.0
Other	7.7	22.5	5.7	7.1
Total	41.0	59.0	55.0	45.0

Note. As the student may be enrolled in more than one course, the qualification level is based on the major qualification for each student
Source: AVETMIS data collection

The lack of concordance between the distribution of students and hours is noticeable. Students 24 years and under make up 41 percent of the student body but account for 55 per cent of hours. Similarly the diploma and higher courses account for around 12 per cent of students but over 20 per cent of hours. The other major disparity is for students doing non AQF courses. While they make up over 30 per cent of students they account for less than 13 per cent of hours.

Table 4: Vocational students and annual hours by field of study and age group for Australia 2001

	Age 24 or under	Age 25 or over	Age 24 or under	Age 25 or over
	Students		Annual hours	
Land and marine resources, animal husbandry	1.8	3.9	2.2	2.5
Architecture, building	3.0	2.2	4.6	1.6
Arts, humanities and social sciences	2.6	4.2	4.3	3.9
Business, administration, economics	8.5	11.3	10.5	8.8
Education	0.4	2.6	0.3	1.6
Engineering, surveying	6.2	5.6	8.7	4.8
Health, community services	2.9	6.1	3.5	5.4
Law, legal studies	0.2	0.4	0.3	0.3
Science	2.9	5.0	5.7	3.9
Veterinary science, animal care	0.2	0.1	0.2	0.1
Services, hospitality, transportation	7.4	6.0	7.9	4.2
Other	4.8	11.6	6.7	7.9
Total	41.0	59.0	55.0	45.0

Note. As the student may be enrolled in more than one course, the field of study is based on the major qualification for each student
Source: AVETMIS data collection

From the point of view of field of study the distribution of hours and students are reasonably similar. The largest disparity is for young people doing science, where there is presumably a relatively large number of full-time students.

The major point of the preceding analysis is to point out that the VET student body is very heterogenous and that any contemplation of the impact of future changes in skill requirements needs to take into account this heterogeneity. Forces that impact on young labour market entrants are likely to be different from the forces impacting on older workers updating or changing their skills. Similarly, changes to the mix of students will have differential effects on changes to the distribution of teaching effort.

2. Forces affecting future demand

It is beyond this paper to set up an elaborate framework to analyse future skill demands. However, it is worth looking at a range of factors that impact on the future skill requirements. Factors we look at are:

- sectoral change
- job turnover
- changing levels of education and training
- labour supply issues

Sectoral change

Conventionally, structural change in the workforce is seen as an important determinant of changes in skill requirements. As we note later it is not necessarily a dominant factor.

Cully (2003) discusses, using Census data and the Australian Standard Classification of Occupations (ASCO)[2], how the labour market has changed in recent years. Table 5 shows broad changes in occupational composition between the 1986 and 2001 census.

Table 5: Change in the occupational composition of employment 1986-2001

	Share of employment 2001 Census (%)	Share of employment 1986 Census (%)	Change in share of employment (after rounding)	Change in employment ('000s)
Managers	9.5	8.9	0.5	202.2
Professionals	18.7	15.5	3.2	534.1
Associate professionals	12.0	11.1	1.0	274.0
Tradespersons	12.5	16.2	-3.7	-13.3
Advanced services	4.2	5.2	-1.0	7.7
Intermediate service	16.7	13.8	2.9	480.4
Intermediate production	8.1	10.0	-1.9	26.1
Elementary service	9.5	8.9	0.6	208.1
Labourers	8.8	10.5	-1.6	52.3
Total	100.0	100.0	0.0	1,772.1

Source: Cully (2003, p. 19)

To provide a further picture, Cully also grouped these occupations into skill levels. These skills form part of the ASCO classification system, and are based on a qualifications framework. The classification is limited in that it does not have an underpinning concept of what skills are, nevertheless it is a useful tool for understanding changes in the labour

[2] ABS (1996) defines ASCO as a "skill- based classification of occupations which covers all jobs in the Australian workforce". There are five levels within ASCO set out as Major Groups of occupations (level 1), sub-major groups within each of the major groups (level 2), Minor groups (level 3), Unit groups (level 4), and Occupations (level 5).

market. Table 6 explains the skill level classification in more detail, and table 7 provides employment data from the 1986 and 2001 census according to these skill levels.

Table 6: ASCO major groups, skill level and typical education and experience

Major group	Skill level	Education and experience
Managers Professionals	I	Bachelor degree or higher, or at leat five years relevant experience
Associate professionals	II	Diploma/advanced diploma, or at least 3 years relevant experience
Tradespersons Advanced clerical and sales	III	AQF* Certificate III or IV, or at least 3 years relevant experience
Intermediate service Intermediate production	IV	AQF Certificate II, or at least 1 year relevant experience
Elementary service Labourers	V	Compulsory schooling or AQF Certificate I

* Australian Qualifications Framework
Source: Cully (2003, p. 13)

Table 7: Change in the skill composition of employment, 1986 to 2001 (%)

Skill level	1986 share of employment	2001 share of employment	Change in employment share
I	24.4	28.2	3.8
II	11.1	12.0	1.0
III	21.4	16.7	-4.8
IV	23.7	24.8	1.1
V	19.4	18.3	-1.0

Source: Cully (2003 p. 20)

The main features that can be gleaned from these tables are that:

- ✧ There has been an increase in the share of employment for higher level skill jobs, ie managers, professionals and associate professionals. There has also been an increase in share of employment for intermediate and elementary services.
- ✧ There has been a decrease in the share of employment for the trades and advanced services, and for elementary service jobs and labourers.
- ✧ The largest decrease in share of employment has been for the "middle" skill level jobs, ie the trades. The trades are the only occupational grouping that had a decrease in numbers employed across the 1986to 2001 census periods.

These trends need to be qualified however in that they provide a macro-level picture. Within the major groupings there has been varying shifts in employment for specific occupations. For example, Cully (2003) discusses how some of these shifts are consistent with structural changes within sectors such as nursing, changes to the human resource function, and the role of machines in manufacturing. New technology or increased professionalism has also had an effect on certain occupations.

Within the major occupational groupings there are also shifts in numbers employed. Table 8 provides data on changes in labour force occupational subgroups between 1996 and 2002, with the occupational sub-groups ranked in terms of growth in numbers employed.

Table 8: Occupational sub-groups in the labour force ordered by change from 1996 to 2002

Occupation	1996 ('000)	2002 ('000)	Change 96-02 ('000)	Change 96-02 (%)
22 Business and Information Professionals	367.4	545.3	177.9	48.4
32 Business and Administration Associate Professionals	229.1	362.4	133.3	58.2
63 Intermediate Service Workers	429.4	545.8	116.4	27.1
82 Elementary Sales Workers	660.0	754.9	94.9	14.4
12 Specialist Managers	255.9	334.9	79.0	30.9
25 Social, Arts and Miscellaneous Professionals	235.5	311.4	75.9	32.2
61 Intermediate Clerical Workers	825.0	890.8	65.8	8.0
33 Managing Supervisors (Sales and Service)	370.9	431.6	60.7	16.4
24 Education Professionals	362.0	422.4	60.4	16.7
23 Health Professionals	279.0	314.1	35.1	12.6
99 Other Labourers and Related Workers	406.4	438.0	31.6	7.8
91 Cleaners	203.7	235.1	31.4	15.4
21 Science, Building and Engineering Professionals	145.8	176.6	30.8	21.1
73 Road and Rail Transport Drivers	267.4	290.1	22.7	8.5
49 Other Tradespersons and Related Workers	192.8	211.3	18.5	9.6
83 Elementary Service Workers	96.9	115.4	18.5	19.1
39 Other Associate Professionals	82.1	100.2	18.1	22.1
59 Other Advanced Clerical and Service Workers	172.5	189.8	17.3	10.0
62 Intermediate Sales and Related Workers	140.0	153.6	13.6	9.7
34 Health and Welfare Associate Professionals	55.2	67.8	12.6	22.8
46 Skilled Agricultural and Horticultural Workers	69.7	82.1	12.4	17.7
43 Electrical and Electronics Tradespersons	177.6	189.3	11.7	6.6
44 Construction Tradespersons	272.1	276.3	4.2	1.6
71 Intermediate Plant Operators	186.5	190.7	4.2	2.2
11 Generalist Managers	130.0	132.1	2.1	1.6
42 Automotive Tradespersons	137.5	138.7	1.2	0.9
92 Factory Labourers	224.4	223.4	-1.0	-0.4
41 Mechanical and Fabrication Engineering Tradespersons	203.8	197.1	-6.7	-3.3
79 Other Intermediate Production and Transport Workers	228.3	219.6	-8.7	-3.8
45 Food Tradespersons	87.6	76.9	-10.7	-12.2
31 Science, Engineering and Related Associate Professionals	129.8	115.9	-13.9	-10.7
13 Farmers and Farm Managers	238.5	220.6	-17.9	-7.5
72 Intermediate Machine Operators	111.1	89.2	-21.9	-19.7
51 Secretaries and Personal Assistants	230.6	198.4	-32.2	-14.0
81 Elementary Clerks	105.3	68.2	-37.1	-35.2
Total	8,309.8	9,310.1	1,000.3	12.0

Source: Unpublished data from the ABS labour force survey

Job Turnover

While employment growth is important, a factor of greater importance is job turnover as individuals move to new jobs and occupations. A model of jobs growth, net job replacement and net job openings has been developed by the Centre for the Economics of Education and Training (Shah, C, Long, M, Burke, G & Fischer, J, 2002).

Over the five years to 2000-2001 growth in the employment base averaged 1.8% per annum and net replacement was estimated to average 2.1% per annum (ANTA, 2002).

Table 9: Job openings for new entrants by major occupation group (per cent)

	Average annual rate for five years to 2000-2001		
Occupation group	Net replacement	Growth	Job openings
Managers and Administrators	2.2	1.1	3.3
Professionals	1.5	3.3	4.8
Associate Professionals	1.7	3.4	5.1
Tradespersons	2.0	0.9	2.9
Advanced Service and clerical	1.9	0.9	2.8
Intermediate Service and clerical	1.9	2.6	4.5
Intermediate Production	1.9	0.3	2.2
Elementary Service and clerical	3.4	0.9	4.3
Labourers	2.7	0.7	3.4
All occupations	2.1	1.8	3.9

Source: ANTA (2002, p36)

Table 10: Average annual job openings for new entrants to major occupation groups, Australia, five years to 2000-2001 ('000)

Occupation group	With VET qualifications	With higher education qualifications	Other new entrants	Total
Managers and Administrators	5.2	6.0	10.1	21.4
Professionals	13.4	51.1	11.2	75.6
Associate Professionals	14.5	9.4	25.1	49.1
Tradespersons	20.1	1.0	13.2	34.3
Advanced Service and clerical	2.0	1.3	7.6	10.9
Intermediate Service and clerical	14.3	7.0	46.0	67.3
Intermediate Production	3.7	0.5	12.9	17.1
Elementary Service and clerical	4.7	1.8	31.7	38.3
Labourers	4.6	1.0	23.5	29.2
All occupations	85.9	70.7	184.9	341.5

Source: Based on estimates from CEET in ANTA, 2002

This analysis indicates that there will be substantial opportunities for TAFE graduates among professionals, associate professionals, tradespersons and intermediate service and clerical workers. It is worth noting that TAFE graduates compete with higher education graduates in all of these, except tradespersons.

Another way of looking at this issue is to compare the number of people in training for a particular occupation at a point in time with the number working in the occupation. Our provider collection does not allow us to identify the students doing entry level training in general. However, we do know those who are in a traineeship or apprentice ship. Table 11 presents these data expressed as a percentage of the percentage of the labour force by occupation at the major ASCO level. At this level it is clear that trainees and apprentices

form a relatively high proportion of tradespersons and reasonably high proportions of intermediate service and clerical workers and intermediate production workers. However, if we breakdown the occupations further we see that that the training rate is very high for some occupations (Table 12).

Table 11: Apprentices and trainees as a percentage of the labour force by occupational category 1996-2002

Occupation	1996	1997	1998	1999	2000	2001	2002
1 Managers and Administrators	0.0	0.4	0.4	0.3	0.2	0.1	0.4
2 Professionals	0.0	0.0	0.1	0.1	0.1	0.1	0.1
3 Associate Professionals	0.3	0.5	0.8	0.7	0.8	1.1	1.5
4 Tradespersons	10.9	11.0	10.7	11.0	11.3	11.4	11.4
5 Advanced Service and clerical	0.0	0.1	0.1	0.1	0.3	1.5	2.7
6 Intermediate Service and clerical	1.1	1.6	2.1	3.7	4.1	5.2	6.2
7 Intermediate Production	0.2	0.3	0.4	1.1	2.9	4.5	5.7
8 Elementary Service and clerical	0.6	0.8	1.2	3.1	2.1	1.8	1.7
9 Labourers	0.6	1.0	1.7	2.5	2.6	3.2	3.5
Total	1.9	2.1	2.3	2.9	3.1	3.4	3.8

Source: Derived from: unpublished data from the ABS labour force survey, and NCVER apprenticeship collection December 2002, collection 34

Table 12: Apprentices and trainees as a percentage of the labour force by 2-digit ASCO level 1996-2002

Occupation	1996	1997	1998	1999	2000	2001	2002
41 Mechanical and Fabrication Engineering Tradespersons	10.4	10.3	10.2	10.0	8.5	8.2	7.9
42 Automotive Tradespersons	16.7	17.3	17.9	17.7	19.0	16.7	16.8
43 Electrical and Electronics Tradespersons	9.1	9.2	9.0	9.0	9.5	10.3	9.0
44 Construction Tradespersons	9.6	10.2	8.9	9.3	10.4	10.2	11.1
45 Food Tradespersons	18.2	19.3	20.0	20.4	20.2	20.8	25.5
46 Skilled Agricultural and Horticultural Workers	4.8	4.6	4.9	4.9	8.2	8.1	8.0
49 Other Tradespersons and Related Workers	9.8	8.9	8.6	9.6	9.4	10.4	9.9
62 Intermediate Sales and Related Workers	3.3	5.5	5.5	9.9	14.5	20.9	26.8
63 Intermediate Service Workers	0.5	1.4	2.5	3.9	4.8	5.4	6.4
73 Road and Rail Transport Drivers	0.1	0.0	0.2	0.9	3.9	5.0	5.3
79 Other Intermediate Production and Transport Workers	0.3	0.6	0.9	1.9	3.9	6.4	9.3
92 Factory Labourers	1.3	2.0	3.3	3.7	4.7	6.5	6.1

Source: Calculated from NCVER apprenticeship collection, ABS labour force survey

As can be seen from the table the rates are particularly high among sales workers and food tradespersons. This indicates that even if there is little growth in retail and

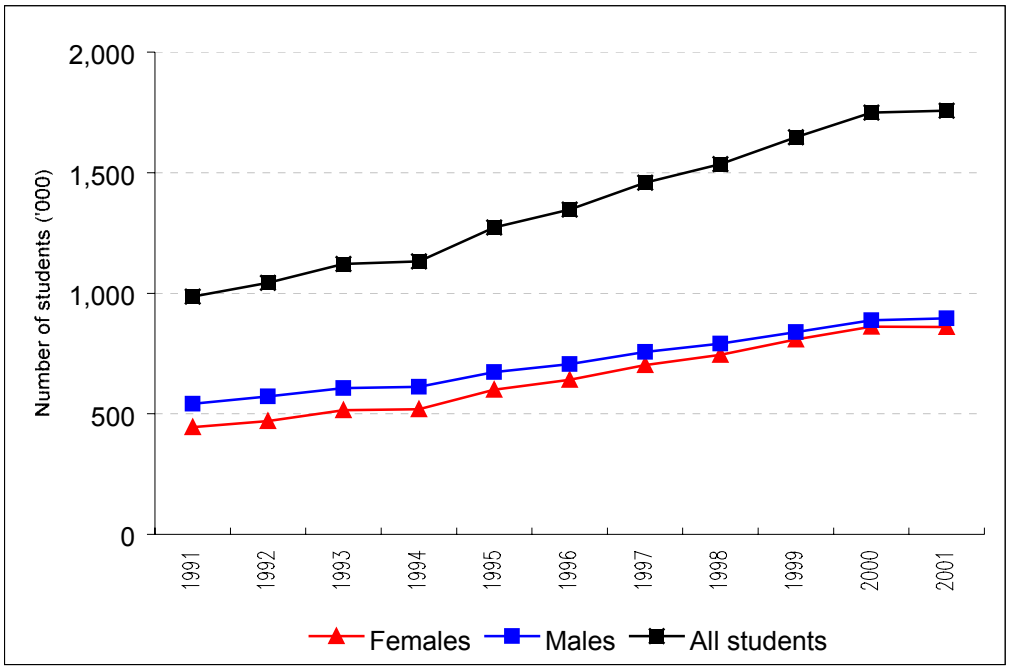
hospitality occupations there is likely to be a high demand for training. There is another side to the story however. Presumably, the reason for such high rates of training is the inability of the occupation to retain trained workers. Consequently, changes to working conditions or wage levels may impact on the demand for training.

It is also worth noting that the institutional framework is very important. The introduction of the new apprenticeship program had very significantly increased the rate of training (or at least formal training) in a number of occupations. From the table above we can see that this has been quite dramatic in a number of occupations: skilled agricultural and horticultural workers, intermediate sales and related workers, intermediate service workers, road and rail transport drivers, other intermediate production and transport workers, and factory labourers

Changing levels of education and training

In the previous sections we focussed on where employment growth has been occurring and the amount of training needed to cope with the job mobility. These are all important sources of demand for TAFE. However, it should not be forgotten that much training is undertaken to improve skill levels over and above entry level training. Some simple statistics make this point fairly clear. Table 7 indicated that job openings were running at around four per cent per year, with a little over half of these being replacements jobs. However, the overall training rate is far higher than four per cent. For the vocational and training sector alone (defined in the rather restrictive scope of the official collections) the proportion of persons aged 15-64 years undertaking training was 13.1 per cent. Moreover, this number has risen dramatically in recent years. As can be seen from figure 1 the number of students increased from around one million to 1.76 million between 1991 and 2001. This is equivalent to an annual growth rate of 5.8 per cent, far exceeding job growth and the job replacement rate.

Figure 1: Number of students in VET ('000) 1991 to 2001



Source: AVETMIS collection

Of course, it is difficult to predict whether this will continue into the future. Not all trends continue (for example school retention stopped increasing in the 1990s) and The range of factors impinging on the training rate is large. Government policies, such as VET in schools and the new apprenticeship incentives , have been important, as has the level of government funding. The economic cycle also plays a part.

One factor that will play a role for TAFEs is increased education levels. The employment rate for individuals with post-school qualifications in 2000 was 81%. For those without post-school qualifications the employment rate was 64%. Where the unemployment rate for those with post-secondary qualifications was 4.4%, the unemployment rate for those without post-secondary qualifications was almost double at 8.6%. These employment differentials, along side the wage premium associated with higher levels of education will continue to drive the demand for education and training. However, the impact of increasing levels of post-school qualifications on the demand for VET are unclear. Persons with university qualifications on average tend to have somewhat more favourable labour market outcomes. On the other hand, the VET sector interacts with the universities in a number of ways: as a bridge or pathway into higher education; and as a provider of technical training on top of the more generic education provided in a degree. Thus VET and university education to some extent are complements rather than substitutes. Another point worth emphasising is that increased levels of post-secondary qualifications will in themselves lead to increased demand for training through increased professional development and life-long learning.[3] It is likely that the balance of VET provision will move further away from entry level training.

[3] The *Education and Training Experience survey (Australian Bureau of Statistics 2001)* shows that employees with the highest level of education also have the highest level of continuing training.

Another aspect of overall increasing skill levels is the increase in VET for students still at school. Associated with a desire to increase retention rates and broaden pathways, governments have more recently been developing the role of vocational education within a school context. In 1998 there was almost a third of the years 11 and 12 students in VET-in-Schools programs. By 2001 numbers this had increased to just over 40% (table 13). Interestingly, a proportion undertaking such vocational education have been interested in obtaining vocational qualifications that will assist them in part-time employment while they continue with full-time university education. Finally, under the mutual obligation aspect of the government's welfare reform policy, teenagers who otherwise would have been unemployed have been encouraged to enrol in the VET sector. While these various trends have impacted on the demand for VET, a challenge for providers is dealing with a proportion of students in either a School or VET setting who might be described as reluctant learners

Table 13: VET- in-schools participation of students in year 11 and 12, 1998-2001

	1998	1999	2000	2001
Total full-time students in years 11 and 12	390 911	402 429	404 212	411 535
Number of students undertaking VET in schools	117 000	136 710	153 616	169 809
Percentage of students undertaking VET in schools	30%	34%	38%	41%

Source: ABS Schools 4221.0, 1998, 1999, 2000, 2001, Ministerial Council of Education, Employment, Training and Youth Affairs (MCEETYA) Taskforce on Vocational Education and Training in Schools, VET in schools taskforce, July 2001

Supply issues

Finally, it is worth noting that skill requirements will also be affected by a number of what could be broadly described as supply issues. Factors that can be pointed to are: increased part-time work and casualisation, increasing female participation in the workforce, the ageing of the population and migration.

Part-time work and casualisation. During the last two decades or so there have been major changes in the Australian labour market. Just over three-quarters (76%) of those in permanent jobs were in full-time work in 1971. In 1998 this had reduced considerably to 56% (van den Heuval and Wooden, 2000). Casual employment has also increased substantially. Watts (2001) reports that casual employment as percentage of the workforce in paid employed increased from 13% in 1982 to 26.4% in 1999.

Over the last ten years the proportion of males employed full-time increased by 4%, while the number employed on a part-time basis increased by 30%. For women the proportion of full-time workers increased by 12%, the proportion of part-time workers increased by 15%. Part-time is especially sought after by secondary school and university students and those in further education who want to work part-time during their studies, women with children, and older men who can't find full-time work. However, the preference of employers for part-timeworkers is also contributing to the take-up of part-time work, particularly in the retail and other industries where activity varies across the day and week.

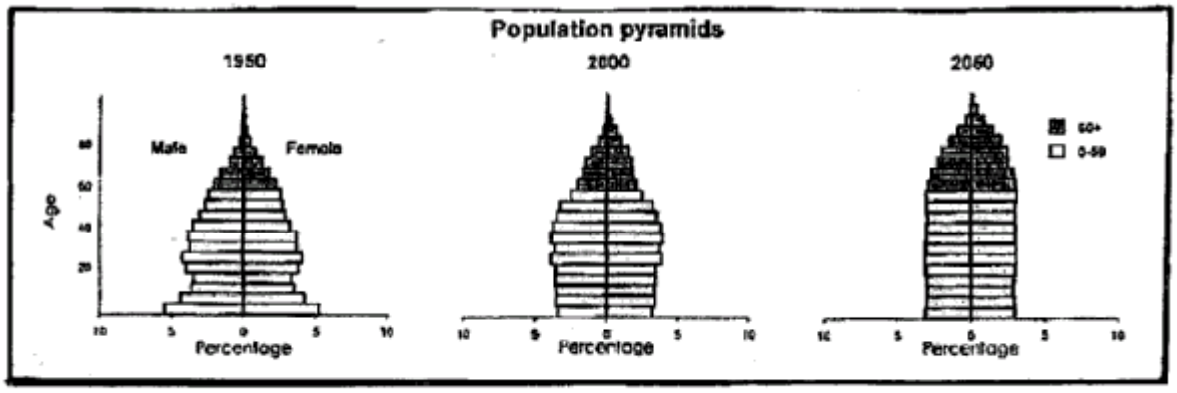
These trends offer many challenges for VET. First, the increase in part-time work means simply that more people have to be trained. Second, employers have been reluctant to provide training for casual and part-time employees, and there is likely to be a lower

return on the investment in training for part-time and casual workers because of the shorter time they will work in a particular job. Yet to operate efficiently part-time and casual workers need the same level of training as their full-time counterparts. Training structures will need to be developed that meet both the needs of individuals and the needs of employers in this regard.

Female participation. The increase in female participation is also a very noticeable feature of the labour market over the last decade or to. While part of this increase is due to an increase in the importance of industries or occupations where females have tended to work, the dominant factor has been a change in societal views about expected roles of women. Associated with the increase in labour force participation has been an increase in educational levels of women relative to men. Women now enjoy higher school retention rates than men, outnumber men significantly in undergraduate university education and have almost caught up to men in their share of VET places. The stereotypical image of VET as a male dominated technical sector no longer holds. It is also interesting to speculate whether some of the problems boys have been having at school in terms of academic performance and retention may spread to the VET sector.

Demographics. The Australian population and workforce are ageing. Increased life expectancy, better health, decreased fertility rates and changing immigration levels have created an environment where older age groups represent a significant percentage of the population. In 1998 well over a third (43%) of the Australian population was over the age of 45 years. In 2010 the projection percentage share of the population for those over 45 years will be 49%. The trend is evident in Figure 2.

Figure 2: Pyramid profiles of population projections for Australia 1950, 2000, 2050



Source: United Nations (2002)

These changes will have a major impact on the supply of skills for the Australian workforce, and will also require a shift in vocational education and training policy, to suit the needs of older students. The balance between entry level training and training for older workers will clearly change. This will affect not only the mix of courses but will also require an examination of the way teaching is conducted. The learning styles of older persons are different from that of younger persons and providers will need to address this.

Not only will the balance between younger and older persons change but in Australia there is expected to be a decline in the absolute number of ‘entry level’ young persons in

around ten years time. According to Australian Bureau of Statistics population projections the number of 18 year olds will begin to decline in 2012. In some States the decline is now apparent.

While ageing is the dominant demographic trend the importance of immigration should not be overlooked. Immigration has played a key role in fashioning the workforce of Australia and its current focus on skills makes it a major component of the supply of skills. Toner (2001) shows that net migration accounts for a substantial proportion of growth in employment, but that its importance varies by occupation and skill level. As can be seen from Table 14, putting the rather heterogenous managers and administrators group to one side, immigration was particularly important for professionals and trades but less important for associate professionals.

Table 14: Contribution of net permanent and temporary migration to growth in employment, 1995-96 to 1999-2000, Australia

	Growth in total employment ('000)	Net permanent and temporary migration growth ('000)
Managers and administrators	22.2	37.6
Professionals	172.4	57.5
Associate professionals	122.4	10.9
Tradespersons and related workers	62.5	21.8
Advanced clerical, sales & service	-2.8	5.8
Intermediated production and transport	130.1	8.2
Intermediate production and transport	20.3	4.4
Elementary clerical, sales and service	14.1	3.8
Labourers and related workers	36.3	2.1
Total	577.4	152.2

Source: Toner (2001)

As well as adding to skills supply, immigration also has a direct impact on demand for training. In fact, the participation rate of migrants in VET is 50 per cent greater than their labour force participation rate (Toner 2001). Part of this is for English language skills, but migrants, particularly those with qualifications have a high demand for post-school study. The extent of recognition of overseas qualifications is also an element impacting on both the supply of skills and the demand for further training.

3. Conclusion

At the outset we were skeptical about the value of trying to predict future skill requirements. In the paper, first we noted that it is important to recognise the very varied nature of the VET student population. We then briefly discussed a broad range of factors likely to have some impact on skill requirements and the implications for TAFEs. The complex nature of structural change in the labour market, the dynamics of the labour market, government policies and funding, the economic cycle, changing education levels and changes in labour supply make the task of predicting future requirements near impossible. And this is at the macro level, without taking into account the complexities of regional labour markets and a dynamic private training sector. What one can say is that prescriptive skills projections as such will be of little use for TAFE planning, even if correct. While overall trends form a useful backdrop to thinking about the challenges

facing individual TAFEs, what will really count is the flexibility of individual TAFEs and a good understanding of the local environment.

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