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# Assessing education and training requirements against uncertain labour force trends



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## Abstract

Data analysis of skill requirements and supply are undertaken to provide guidance to policy makers. This analysis includes information on future employment by occupation and qualification, on labour force participation and on shortages. These can provide a coherent overview of what is likely to occur if current trends or policy settings persist. However, future uncertainty and data limitations suggest this information is most useful in providing a broad context within which industry, employer and individual needs can be considered.

## Introduction

The objectives of government policy for vocational education and training include enhancing productivity, increasing workforce participation and addressing skills shortages. Alongside these is concern for personal development and for social inclusion, assisting the less advantaged to access education and training and to participate more fully in employment and in society.

What should be the size and shape of the education and training system to achieve these objectives? There is good evidence to suggest that it should be larger than at present but its exact composition by field of study or level of education and training is much less clear cut. There is uncertainty as to the composition of education and training needs and this uncertainty increases the further we wish to look into the future.

## Skills and productivity

There is persuasive evidence that economies with better educated and trained workforces have higher rates of output and economic growth. This is shown in economy-wide studies e.g.

Dowrick 2002<sup>1</sup>. It is also indicated by the association of earnings with level of qualification. Earnings, which are an indicator of productivity, generally increase with the level of qualification. It was in this context that CEET prepared a paper for the Council of Australian Governments (COAG) in 2006 (Shah & Burke, 2006). This provided projections of the requirements for persons with qualifications in Australia in 2016 and the likely supply<sup>2</sup>. The main elements of these estimates were:

- projected employment by occupation
- the proportion of workers in each occupation holding qualifications at various levels
- the net number of workers leaving employment (for reasons such as retirement)
- the number of persons achieving qualifications with the education and training system at its current size, and the net migration of qualified persons at their current size.

The main scenario assumed skill deepening that the proportion of workers with qualifications would continue to rise within occupation as in recent years. This is in line with the human capital agenda of COAG

<sup>1</sup> 'A one-off increase in attainment will produce a one-off rise (albeit spread over time) in the level of GDP *per capita*. There is mounting evidence, however, that there are also substantial dynamic or *growth* effects, which are linked to a country's ability to implement new technologies. This evidence suggests that Australia would do well to increase its educational levels to match the OECD leaders – the USA and Scandinavia'. (Dowrick, 2002).

<sup>2</sup> It is accepted that qualifications are only indicators of skill levels and persons can acquire skills in various ways without obtaining full qualifications. Qualifications are important for worker mobility and data on qualifications held are reported in many surveys.

which aimed at lifting productivity. The estimates of workers leaving employment was based on CEET's estimates of net replacement (based on analysis of the changes in employment by occupation by age). The base estimate of the supply of persons with qualifications assumed that the output of the education and training system and migration rates were maintained.

There were three main findings from this work which have been taken up in the reform process in the last two years including in the policies in *Skilling Australia for the Future*:

- the VET system would need to expand to meet the projected requirements
- a considerable amount of the training would need to be provided for existing workers
- much of the training would need to be at the Diploma and Advanced Diploma level

It was projected that the training system would need to expand. About 240,000 more persons would have to complete qualifications above the number likely to qualify under existing levels of provision.

As Diploma and Advanced Diploma courses are longer on average than lower level programs, this means that the expansion of training effort required is much greater than the expansion in the number of places.

This report did not include details for particular occupations (though the estimation of requirements in 2016 did involve this). The purpose was to provide a big picture of some major aspects of the training system that would need to change in the coming years.

More detailed projections can be made, including estimates for particular occupations and state. This can be useful in giving an understanding, on

the basis of current information, of the future pattern of employment. However, the more disaggregated the estimates, the more likely that the actual employment levels will differ substantially from the projection. If we wish to couple these projections of employment with estimates of the potential supply of skilled labour, the problems are exacerbated. One major reason is that persons with particular training often do not enter the occupations to which the training is most obviously related. And there are in almost every occupation, except those where strict licensing enforces particular qualifications, persons with a wide range of qualifications and considerable numbers without formal qualifications.

Hence, while analysis of employment and training data can provide broad estimates of the size and shape of changes in the education and training system to support improvements in productivity, we should not expect it to provide detailed pathways.

## Labour force participation

There is convincing evidence that the level of workforce participation is related to the possession of a qualification. In particular older persons are much more likely to be in the labour force if they hold qualifications

The estimates in the paper by CEET (2006) for COAG accepted the then current projections of the proportion of each age group participating in employment. Work carried out in NSW by IPART (2006) gave explicit attention to the issue of lifting the proportion of the population in the labour force. Many older workers and various less advantaged groups are not participating because they lack the skills currently in demand following recent economic developments. Provision of appropriate training to these workers may help them to gain employment,

with obvious benefits in both personal income and participation in society and with benefits to the economy in terms of an increased skilled labour force.

## Particular occupational needs and shortages

Australia's skill shortage receives much media attention but it is usually in a way that it is not easy to discern exactly what is being considered (Shah & Burke, 2008). It is worth noting the definitions used by the Department of Education, Employment and Workplace Relations (DEEWR, 2007).

### Shortage

Skill shortages exist when employers are unable to fill or have considerable difficulty filling vacancies for an occupation, or significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and in reasonably accessible locations.

### Recruitment difficulty

Recruitment difficulties occur when some employers have difficulty filling vacancies for an occupation. There may be an adequate supply of skilled workers but some employers are unable to attract and recruit sufficient, suitable workers for reasons which include the following: specific experience or specialist skill requirements of the vacancy; differences in hours of work required by the employer and those sought by applicants; or particular location or transport issues.

Particularly in the case of recruitment difficulties, it is the nature and location of the job rather than a lack of people with appropriate qualifications that is the cause of the vacancies remaining unfilled. The solution to these recruitment difficulties may lie as much in changing job conditions and

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remuneration as in providing additional training.

A further concept is occasionally referred to as 'skills gaps'. This refers to a situation where there is no unfilled vacancy but the workers employed are at a lower skill level than required or thought desirable.

It is often not clear from newspaper and other reports which concept is under consideration (Shah & Burke, 2008).

DEEWR does not claim to be able to make exact estimates of shortage and it holds back from providing a measure of the quantity of shortage. In contrast, the Employers' Skill Survey in England is used to produce quantitative estimates. It provides estimates of total vacancies, vacancies that are hard to fill and, of those hard to fill, the ones that are due to skill shortages (Learning and Skills Council, 2008). The data are reported in some detail including by region and occupation. The 2007 survey of over 79,000 employers indicated that vacancies equalled about 2.8% of total employment. About 30% of these vacancies were classified as 'hard to fill'. About 70% of the hard to fill vacancies were considered to be skill shortage vacancies: that is, skills shortage vacancies were about 20% of all vacancies.

DEEWR compiles lists of occupations that are considered to have a skills shortage. These are provided for professions, associate professions and trades. The major source of the information on shortages is a survey DEEWR conducts of employers who have recently advertised, supplemented with a range of other data on demand and supply including numbers being trained and migration (DEEWR)<sup>3</sup>. The

information is used for advice to job seekers, in relation to assistance for apprenticeships and traineeships and for skilled migration. Persons seeking to migrate under the skilled migration program receive additional points if they are qualified for occupations on the Migration Occupations in Demand List (MODL). There are over 50 professional occupations (a high proportion of these in health) on the MODL and nearly 50 trade occupations including many trades in the building industry). The trades listed represent over half of all trade occupations.

Where there are identified shortages, as distinct from recruitment difficulties, there would seem to be an a priori case for expanding training while the shortages persist. The shortage data can be put in context, as it is by DEEWR with estimates of the likely expansion of employment by industry and occupation over the coming years and the likely growth in supply from the education and training system and migration.

The shortage information provided by DEEWR alongside information provided by employer groups and unions, can help in making judgements on future directions in training though, as discussed, given the limitations of the data, there is not much indication of the size of the shortages to be addressed. There is also the issue of the extent to which training or improved recruitment and retention is the solution to the shortage.

## **Employers and individuals: demand for training**

Analysis of data on employment and training can provide us with estimates of possible numbers of persons to be trained in various areas. But, as discussed, the data on which to construct such estimates is far from complete. Steps can be taken to

improve the data and analysis but the capacity to forecast by detailed categories of skills will remain very limited.

And it is not only a matter of an appropriate number and mix. There is the question of whether the provision meets the particular needs of employers and individuals. Industry, employers and workers are in the best position to judge the type of skills needed in their workplaces and recognition of this has been behind many of the reforms to training in the last 20 years. This includes basing training on competencies identified by industry (developed into training packages since the late 1990s) and various moves to allow employers and apprentices/trainees to select the training provider who best meets their needs (e.g. User Choice).

More recently there have been various attempts to stimulate the involvement of employers in the development of training appropriate to their needs. The proposed arrangements for the 'existing worker places' being provided under the Productivity Places Program in 2008 suggest that employers will need to undertake training needs analyses prior to accessing the places under the program (Australian Government, 2008). Partnerships are promoted between training providers and employers in all states and territories. A particularly important initiative has been the Skill Ecosystem model which is a form of industry partnership based on an analysis of the whole industry 'ecosystem'. It addresses skill usage and is driven by employers, employees, training organisations and communities working together ([www.skillecosystem.net/](http://www.skillecosystem.net/)).

Such changes are as much about the quality and relevance of training provided as about the quantity, but they can also stimulate demand for training and private finance for it. That

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<sup>3</sup> The advice that DEEWR provides on individual occupations in Job Outlook draws on occupational projections from the Centre of Policy Studies, estimates of turnover and information on rates of pay.

this is an issue can be highlighted by the stagnation in enrolment in the VET system in Diplomas and Advanced Diplomas despite the concordance of views from projections, from industry and in government policy that expansion should occur at this level. The extension of various forms of government–employer incentives to these courses may help promote such enrolments but the active engagement of employers in analysis of their skill needs in partnership with providers may assist here too.

The NCVET Student Outcomes survey (2007) shows that about four-fifths of VET graduates undertake their training for employment-related reasons. As well as students who are already employed, individuals seek to enrol in VET courses prior to entry to employment and to advance their employability, in some cases in new fields of interest and with a new employer. Individual enrolment is affected by aptitudes and interests but also with some understanding of job prospects. Providing for students' aptitudes and their judgement of what is in their own best interests and meeting their choices, even in areas where employment prospects are not immediately very strong, may not necessarily be a mistake. If such provision stimulates enrolment by disadvantaged persons who were otherwise alienated from education and training, then the case is still stronger. It can be noted that the Victorian Discussion Paper on Skills Reform (2008) proposes giving all Victorians access to an initial post-school qualification and the opportunity to continue to gain qualifications above those they already hold – though the statement did include the proviso that there could be a cap on the number of places in courses in the light of employment prospect.

## Conclusion

Commonwealth and state and territory governments are taking steps to expand provision of vocational education and training. This paper has concentrated on the issues of the particular mix of training and the quantity, but has not dealt with issues of finance and regulation of the system.

Data analysis of skill requirements and supply are undertaken to provide guidance to policy makers. These include information on future employment by occupation and qualification, on labour force participation and on shortages. They can also provide a coherent overview of what is likely to occur if current trends or policy settings persist. However, future uncertainty and data limitations suggest this information is most useful in providing a broad context within which industry, employer, employee and individual needs can be considered.

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