



# A WELL-SKILLED FUTURE

## Tailoring VET to the emerging labour market

### Forecasting future demands: What we can and cannot know by Sue Richardson & Yan Tan

This research examines how economists construct their projections of future skills demand. It also evaluates the success of the principal models used for such purposes, and discusses how the VET sector should respond to the unavoidable uncertainty over future skills demands.

#### Introduction

The vocational education and training (VET) sector aims to provide courses to meet the future skill demands of employers. If we can anticipate changes in the quantities and types of vocational skills required by employers, then the development of unnecessary skills in workers can be avoided, as can the extensive preparatory work in teaching institutions.

Ideally, employers should be able to easily find the skills they need at the time and place they need them. However, no model, no matter how carefully constructed, has the capacity to entirely remove the uncertainty involved in dealing with the future.

#### Demand for vocational skills

The demand for vocational skills is not observed directly, but is usually inferred from the number of people who are employed in occupations considered to require those skills. In practice, many people in higher-level occupations do not have the level of formal education usually expected for such work. For example, *associate professionals* are expected to have a diploma or advanced diploma but, in practice, only one-third of people employed in this category are qualified at this level or higher. Similarly, of those who work as *tradespersons and related workers*, one-third has no post-school qualification.

In general, the levels of formal education of the Australian workforce are not high by Organisation for Economic Co-operation and Development (OECD) standards, but

#### Program 1: The nature of future labour market demand

The research consortium, *A well-skilled future: Tailoring vocational education and training to the emerging labour market*, comprises researchers from the National Institute of Labour Studies and the Centre for Post-compulsory Education and Lifelong Learning. Managed by the National Centre for Vocational Education Research (NCVER), it aims to investigate future work skill needs and work organisation arrangements, and their implications for VET.

they are rising. Most of the growth in demand for skills has been for those at higher levels (university degrees or diplomas). Since 1986, total employment grew by about 40%, while employment of tradespeople grew by only about 8%. *Associate professionals* and *professionals* have been the occupations with the fastest rates of growth.

#### Uncertainties in demand forecasts

It is very difficult to forecast how the demand for labour will evolve beyond a few years into the future. Economies are complex and dynamic and are affected by many non-predictable forces, including: new technology; the macroeconomic state of the domestic economy and the economies of trading partners; the amount of capital investment and its distribution between industries; changes in governmental policy; and the interaction of these factors.

The changes in demand for skills reflect technological innovation, the strategies that industries adopt to increase productivity, and the requirements of eventual consumers. Even the best forecasting models do only a moderately good job of projecting total output and employment. Their accuracy falls rapidly as the projection horizon extends, as the types of skills become more disaggregated, and with projections made by region.

Despite the difficulties, many OECD countries, including Australia, have computer models of their economies, which are used to project employment by quite disaggregated levels of skill. These models are complex, large and dynamic. The one most widely used in Australia is the MONASH model, which ranks as one of the best of its kind in the world.



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It is difficult to evaluate the accuracy and reliability of the forecasts of such models, because such evaluations can only occur some time after the forecasts were made. After evaluation, it is generally concluded that the models are of some value, but mainly as indicators of aggregate trends and interdependencies.

When they are used to forecast the growth in occupations in any detail, they are often out by 10–20% within a few years. Our own comparisons of projections with outcomes for the MONASH model confirm that, over a nine-year period, its projections diverged substantially from the actual outcomes for a number of occupations. Indeed, even at the major occupational group level, the direction of change was in some cases incorrect—projecting growth when there was decline and vice versa.

### What is to be done?

In the light of the virtual impossibility of reliable projections of the demand for skills, how should the VET sector decide what to teach?

The labour market is dynamic; people are constantly changing their jobs, learning new skills from their work, moving to new locations, moving in and out of the labour force and changing the number of hours per week they work. At the same time, firms are being born, growing, dying, declining, altering the size and skill set of their workforce, recruiting strategic new skills, and training some of their existing staff with the additional skills, as required. As employers and workers search for an appropriate match of skills, shortages and surpluses usually sort themselves out.

In terms of the VET sector's role in the provision of skills, it is misguided to believe there is a direct relationship between an expansion in output, the associated increase in skills needed to produce that extra output, and a requirement for the VET system to provide those extra skills. Indeed, there is only a loose match between the qualifications people have and the jobs they do. Many people have qualifications not used in their current job, while others work in jobs without any formal qualifications.

It is important to appreciate that the VET sector does not need to attempt to identify every future skill vacancy and then train someone to fill it. Rather than attempting to match its training to projected skills needs in any precise way, the VET system should focus on distinguishing those

skills in growing demand from those in declining demand, and on skills where replacement vacancies (for example, from retirement) are likely to be large.

There is no need to expend serious effort forecasting the demand for skills that are quickly and easily learned. The demand for these skills can be met at the time, if they really eventuate. Rather than forecast, with the attendant errors in over- or under-estimating the true outcomes, it is preferable to have in place effective systems for quickly identifying emerging trends and for responding to them.

At the same time, there is value in the VET sector being able to align the broad structure of its offerings to the future needs of the economy. The best strategy to achieve this is likely to require a combination of the following steps.

- Use the best available model of the economy to project the expected growth or decline of occupations and volume of replacement vacancies, at a fairly broad level.
- Check these projections against other sources of information, such as those contained in the Department of Employment and Workplace Relations job prospects.
- Confine these projections to around five years and update them regularly with the latest information.
- Where more detail is required, retain an Australia-wide focus and disaggregate by skill level or type.
- Where a regional labour market is important, use local information from employers' associations, graduate destination surveys, recruitment agencies and similar sources to refine the broad projections.
- Undertake separate, bottom-up, high-quality studies of expected skills demands for those major skills that take a long time to learn and prepare for teaching—it is for these that the ability to make accurate projections is of most importance.

This overview is based on the research report, *Forecasting future skill demands: What we can and cannot know*. Visit <http://www.ncver.edu.au/publications/1721.html> for more information.