

A well-skilled future

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Program 6:
Maximising the future value and effectiveness of vocational education and training



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The views and opinions expressed in this document are those of the author/project team and do not necessarily reflect the views of the Australian Government, state and territory governments or NCVER

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About the research



A well-skilled future by Sue Richardson and Richard Teese

In 2004 the National Centre for Vocational Education Research (NCVER) contracted the National Institute of Labour Studies, Flinders University, and the Centre for Post-compulsory Education and Lifelong Learning, University of Melbourne, to undertake a body of work focusing on the relationship between the country's future skill needs and the vocational education and training (VET) system.

A well-skilled future by the co-directors of the consortium synthesises the findings of the twelve projects undertaken. This body of work will be a stimulus to debate about the role of the vocational education and training system in Australia's skills development.

Key messages

- Supply and demand for skills are very difficult concepts to pin down and measure, principally because many people learn their vocational skills informally, on the job. While greater local interaction between industry and VET will improve understanding of the market, at the national and state levels policy-makers must learn to live with uncertainty. They should focus on: areas where markets do not work well; skills that take a long time to train; or shortages that cause major bottlenecks.
- Higher-level skills are increasingly required by industry, so VET must re-focus on middle-level and advanced training. This should not be at the expense of people needing basic training, because VET plays a vital and unique role in providing opportunities to the many people who are following unconventional life paths, many of whom are relatively disadvantaged.
- In those areas where more and more jobs are casual and less training is occurring in the workplace, the importance of formal VET is likely to grow.
- The ageing of the workforce will increase the stock of vocational skills, especially white-collar skills, as the workforce becomes more experienced and more qualified.
- A well-skilled future means removing barriers to VET participation caused by lack of employment incentives to training, problems of incomplete schooling, and weaknesses in how some providers work.
- The VET system can respond to the fluidity of the training landscape through both community partnerships and market-based models of provision. These multiply industry links, create more employment incentives to training, and have a greater focus on individual need through good inclusiveness strategies.
- A well-skilled future cannot be constructed by the VET sector alone. Improved quality of schooling will create the platform for VET to do its distinctive and value-adding work in skills training, while stronger employer commitment to training will make greater use of the workplace as a site for skills development.

Tom Karmel
Managing Director, NCVER

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Executive summary

This report is the final report—the synthesis report—from the research program, *A well-skilled future: Tailoring VET to the emerging labour market*. This research program examines the evolving labour market and changing work organisation and management in the context of the vocational education and training (VET) sector and its role in the development of the appropriate levels, types and quantities of skills required to satisfy the future demands of Australian industry. The research reports have been produced by researchers from the National Institute of Labour Studies, Flinders University, and the Centre for Post-compulsory Education and Lifelong Learning of the University of Melbourne.

This overview draws together the key points identified across the research. It integrates the conclusions from each of the five research themes to produce a coherent picture of the VET sector's role in responding to changes in the skills required by employers and the skill development needs of the workforce.

What it looks like

The fundamental source of a country's economic prosperity is the productive capacity of the national workforce. Vocational skills are a vital part of that productive capacity.

A well-skilled future is one where enterprises are encouraged to use sophisticated, high-productivity strategies, confident they can find the necessary high-quality workforce to match. It is also one where the latent productive talents of the potential workforce are realised. It is one where enterprises and the formal education system each plays their part in the development of worker skills. While there will never be a perfect fit between the pattern of demand for and supply of skills, there will be neither a large unmet demand for skills nor a large underused supply of skills. A well-skilled future provides multiple opportunities for workers to enhance and alter their skill sets.

The role of VET

The labour market is dynamic. People are constantly changing their jobs, learning new skills from their work or formal courses, moving to new locations and in and out of the labour force, changing the hours they work. At the same time, enterprises are being born, are growing and dying, altering the size of their workforce, recruiting strategic new skills and training some of their existing staff with the required incremental skills. By these means, shortages and surpluses usually sort themselves out over time.

The vocational education and training (VET) sector does not need to attempt to identify every future skill vacancy and then train someone to fill it. It is not possible to predict with accuracy the future demand for or supply of vocational skills. It is difficult to forecast well and costly to forecast badly. It is easier to project supply than demand for skills. However, the VET system can and should take into account the higher-level skills that are in growing demand, so that the way in which skills are supplied is based on both student preference and skill need.

While there has been a large shift towards higher education, the demand for vocational skills is likely to remain strong, but will evolve in two ways. One is towards higher-level qualifications—associate diplomas and diplomas. The other is towards more interactive and cognitive skills (as distinct from motor skills). There is currently a strong employer demand for skilled trades training, but this is occurring in a context in which, over the longer term, higher-level qualifications and cognitive and interactive skills are receiving increasing emphasis and represent an increasing proportion of total employment.

Constraints and challenges

The development of vocational skills is being challenged as a consequence of the substitution of contingent forms of employment for permanent and full-time jobs. Casual employment in particular is associated with less skills development on the job than is permanent employment. Offsetting this, younger cohorts are more qualified, and the proportion of each cohort with VET qualifications is projected to continue to rise. At the same time, the workforce is ageing quite rapidly. By 2014, there will be as many people aged 50–65 years as there are people aged 25–49 years.

Older workers have large amounts of skills obtained from experience, but lower levels of formal education than younger workers. They are likely to find it harder to use the formal VET system to update their skills, or to shift to the skills needed for a new occupation.

There will be growing demands on the VET sector to assist in increasing the skills of people who are currently marginal to the workforce. The workforce is becoming more female, as prime-age (25–49 years) men withdraw and women enter employment. More complex life patterns are meaning that the VET student body is increasingly comprised of men without full-time jobs, sole mothers, and older workers. These changes increase the demands on the formal VET system to be sensitive to the varied motivations, backgrounds and capacities of its students. It must also be sensitive to the different roles that it plays for its varied student body. These include platform-building for youth, skills enrichment for established workers, and re-orientation for older workers. It must provide opportunities for the persistently large group who fail to complete high school and who face severe earnings penalties as a result.

Participation levels are an important measure of the success of the system. Some regions have high levels of participation, while others have low levels. A variety of factors are at work here—the availability of apprenticeships, the range of courses on offer, and the accessibility of campus-based training. But there are other, more complex factors as well. These include perceptions and values about jobs and employment-based training, and income needs. The mix of these factors affects the willingness of people to train, as well as their opportunities to do so.

There are two approaches to identifying and responding to need. The first is based on a strong collaborative community model, in which regions establish: strong community partnerships involving providers, government, employers and schools; robust mechanisms for measuring and responding to local industry needs; flexibility in delivery, including in the workplace and online delivery; and inclusiveness strategies to target key groups. The second is more a market-driven model where multiple and varied VET providers (public and private) actively compete for students. The competition works to drive up enrolments, with pressure on providers to be innovative in their responsiveness to local needs.

Towards a well-skilled future

At the system-wide level, VET should focus on distinguishing skills that are in growing demand from those in declining demand, and on identifying skills where replacement vacancies will be large. In the face of the substantial and irreducible uncertainty about the future details of demand, the VET system should:

- ✧ devote most of its forecasting effort to those skills with extended learning and teaching preparation time, and where shortages impose serious bottlenecks on production
- ✧ for the remaining skills, establish an outstanding capacity to monitor emerging shortages and surpluses, together with a capacity to respond quickly to them.

The successful regions show that the VET system already possesses the knowledge of how to do the second of these very well. The greatest gains will come from extending the strategies of the best regions to the entire system. A densely populated VET landscape with wide provider choice, collaborative local networks, positive community attitudes and responsiveness to the motivations of potential students are essential components of what is required.

The future VET system will need more resources. It will need simultaneously to expand its size, teach at higher levels, teach a more diverse and older student body, and extend its geographic reach. The greatest expansion in demand for VET courses will be for higher-level qualifications. It will require a skilful management of the culture and resources of VET to ensure improvement in its services to the educationally disadvantaged, while placing a growing emphasis on its top-end qualifications.

The VET system will face pressure to offset the reductions in employer-based training resulting from casual employment, although it will be difficult to replicate the geographical spread and range of skills that employer-based learning provides. It should seek creative ways to work with and through employers as agents of training. In this way, there is an opportunity for the VET sector to take a lead in providing workers with skills that are in short supply.

A well-skilled future

What is a well-skilled future?

Skills are expensive to deliver and expensive to acquire. Not only do they require the time and money of students, they also demand effort, persistence, a willingness to be taught, and exposure to unfamiliar tasks and ideas. Because acquiring skills is difficult and expensive, it is important to have an idea of how much is enough. A well-skilled future is one that has the ‘right’ amount of skills. What might this be?

Most of the prosperous nations of today owe their prosperity in large part to the productivity of their workforces. This productivity has two fundamental sources. One is the amount and quality of equipment that people have to work with. The other is the level and suitability of the skills that workers possess. These skills add directly to productivity. But they also make it profitable for firms to invest in advanced and complex technologies and equipment. Such capital does not add to productivity on its own. It must be used by workers who are capable of operating it to good effect, and of maintaining and developing it. Frequently, this requires high levels of skill among the workforce. One aspect, then, of a well-skilled future is that firms are confident of investing in advanced equipment, technology and management systems, knowing that they will be able to find the high-quality workforce that will get the most out of such an investment.

The second important aspect of a well-skilled future focuses on the potential productive capacities of the people of working age. Every person has the potential to offer more to the economy than just their raw labour power. They realise this potential by learning work skills—through the formal education system, and informally on the job. Because people vary a great deal in their interests and in their potential capabilities, the skills development system must be diverse and comprehensive in order for the latent productive talents of the workforce to be realised. In a well-skilled future, each person would have real choices about how much effort to put into their own skills enhancement and in the types of skills they acquired. A range of skill development opportunities would be open to people in country areas as well as in the cities; to older people as well as the young; to those with bad schooling experiences, as well as those who flourished at school; to migrants as well as the native born; to sole mothers and married mothers; to those with impairments as well as the fully fit. People would have multiple opportunities to enhance and alter their skill sets. They would have effective opportunities to recover from past educational decisions and actions that they come to regret.

An important way in which skills increase national prosperity is by increasing people’s participation in paid work. More skilled people receive higher wages and have more job choices. These higher wages and greater choices increase the incentive to take paid work, hence increasing the participation rate. In this way, skills enhancement for the low-skilled improves both national productivity and individual financial independence and sufficiency. In a well-skilled future, everyone who seriously wants to develop extra skills in order to be able to find a job is able to do so.

Vocational skills are vital for prosperity. Significantly, they are also vital for equity. Prosperity that is derived from the development of skills—especially vocational skills—is widely shared among the population. The benefits go to all those who increase their skills, regardless of whether they start from a low or a high skill base. Overall, wages are distributed across the population more evenly than are the returns to capital (profits). And the wage gains from having vocational skills are

focused more on the lower wage groups than are the gains from university education. Vocational skills promote productivity in an egalitarian way. The vocational education and training (VET) system provides opportunities for many who do not prosper elsewhere in the educational system, or who are not gaining significant skills from their jobs. We note that in 2005, six months after leaving education, 30% of teenage school leavers and 23% of those aged 20–24 were not engaged full-time in some combination of study and/or work (Dusseldorp Skills Forum 2006, p.ix). This lack of engagement will slow down the development of work skills in these key learning ages. A well-skilled future that shares the gains in prosperity widely among the workforce and population thus must give vocational education a solid and central place. Today, about one-third of the workforce has a vocational qualification as their highest qualification, 18% has a university qualification, while half has no post-school qualification. But these ratios are changing for the young cohort. Approximately equal numbers (a quarter) of school leavers in 2005 went on to each of university and vocational education in the following year (Dusseldorp Skills Forum 2006, p.viii).

The skills of the population only contribute to productivity and equity if they approximately match, in quantity, type and levels, what employers need. Shortages of skills make it harder for firms to produce the quality and quantity of product that they have buyers for. Like shortages of any other essential input, this reduces total production. Surpluses of skills present a different problem. They are not noticed by employers, except possibly in the form of a large pool of high-quality applicants for jobs, and low quit rates. But they are economically inefficient and personally harmful. Where individuals and the taxpayer (and possibly employers) have expended time and money in the development of a skill, such as auto mechanic, the investment is wasted if people so trained cannot get jobs that use that skill. While there will never be an exact match between the skills that people have and the skills that employers want, a well-skilled future would avoid the emergence of either a large unmet demand for skills, or a large excess supply of skills.

How do we reach such a well-skilled future?

For the planners who are responsible for assisting in the development of such a future, it would be ideal to be able to:

- ✧ accurately project the size and shape of the future demand for skills over a planning horizon of 5–10 years
- ✧ accurately project the size and shape of the future supply of skills
- ✧ design a vocational education system that will ensure that demand and supply continually match.

We argue in subsequent sections that it is not possible to remove uncertainty about the future in this way, and neither is it necessary. But it is possible to understand more fully the changing environment for vocational skills and the effectiveness of the VET system in responding to those changes. This we do in subsequent sections.

Matching supply with demand

The precise meaning of both the demand for and the supply of a skill is surprisingly difficult to pin down. There are three main reasons for this.

The first reason is that, with a few exceptions, we have no direct measure of how many people possess a given skill. We often do not even have a clear definition of what constitutes a particular skill. Qualifications are not the same thing as skills, although the two are related. Formal education that leads to a qualification is one way of obtaining a skill. But as we noted above, half of the Australian workforce does not possess a post-school qualification. This does not mean that half of the workforce has no skills. Rather, it illustrates the important fact that many valuable work skills are learned informally in the workplace, rather than formally in educational institutions. This has always been the case. Indeed, the expectation that a majority of people will obtain post-school qualifications is a very recent phenomenon.

The link between skills and qualifications is also attenuated by the fact that many people who do have qualifications do not use them in their current job. Table 1 illustrates the loose match between qualifications and jobs.

Table 1 Distribution of qualifications within occupations, Australia, 2003

Occupation	University	VET	No post-school qualification
Managerial and administrative	36	30	32
Professional	71	19	9
Associate professional	24	38	35
Trades and related	3	73	22
Advanced clerical & service	13	36	48
Intermediate clerical etc	12	36	49
Intermediate production etc	5	29	64
Elementary clerical etc	9	28	60
Labourers and related	4	25	68

Source: Derived from ABS Survey of Education and Employment, unit record file, 2003.

Table 1 shows that many people work in skilled occupations without a relevant qualification, or any qualification at all. For example, one-third of people working in highly skilled managerial, administrative and associate-professional occupations have no post-school qualification at all, and approximately a further one-third have vocational qualifications. Even in the case of the professions and trades, close to one-third of workers do not have a relevant qualification.

The other important insight from Table 1 is that many people with qualifications are employed in jobs that do not require their qualification. For example, about 13% of advanced and intermediate clerical and service workers, and 9% of elementary clerical and service workers hold university degrees: they are clearly overqualified for these jobs. The reasons for this underuse of qualifications are complex and go beyond the scope of this paper. For a discussion of the underuse of VET qualifications, see Richardson et al. (2006).

It is also clear from the table that even many skilled jobs do not actually *require* the person doing the job to have a relevant qualification. People employed as bookkeepers, human resource managers, warehouse supervisors, landscape gardeners, IT operators, call centre operators and managers of all sorts are not required to have a qualification and in many cases do not. There are only a handful of occupations, such as electrician and pilot, where it is a *legal* requirement that a person be qualified. In some occupations, such as university or TAFE lecturer, economist, accountant, auto-electrician, chef, hairdresser, financial officer, it is the industry norm that workers have suitable qualifications. But if the employer chooses to ignore the norm, there is no legal impediment to doing so. In some cases, qualified staff are seen as a measure of the quality of the service. Government funding is also sometimes conditional on firms having specified minimum ratios of qualified staff (for example, child care and aged care). But enterprises that do not seek government funds are free to ignore these ratios. Is the demand for child care workers being satisfied, if there are no persistent vacancies (which indicates that there is no real shortage), but many people are being employed who do not have relevant qualifications?

The second reason that demand for a skill is hard to pin down is that workers are very varied in their degree of skilfulness. Even if a person has the relevant qualification, some will be superbly proficient and some will be very ordinary. We cannot observe the demand for quality.

Finally, the skills that employers demand often go beyond technical competence to embrace attributes such as commitment, a willingness to be flexible in tasks performed or hours worked, a capacity for initiative, good presentation and interpersonal skills. Often the need for these personal qualities reflects the way the business is managed, rather than the universal requirements of the job tasks. As with quality, it is hard to observe the demand for these personal attributes,

and it is an open question as to whether it is an appropriate task for the vocational education system to try to teach them.

In practice, demand for a particular skill is (imperfectly) measured as the number of people who are employed in occupations that are judged to require that skill. In a situation of perceived shortage of skills, the number of persistent vacancies should be added to the number actually employed in order to quantify the demand.

The problems of identifying and measuring supply parallel those for identifying and measuring demand. The supply of skilled people is not the same as the supply of people with relevant qualifications. People without qualifications can do skilled work because they have learned their skills on the job. Employers will often overlook the absence of a qualification if a person has relevant experience. But there is no neat measure of experience that can be used to assist in measuring the total supply of a skill. As with demand, the supply of a skill has a quality as well as a quantity dimension. If a person has a relevant qualification, or relevant experience, but is otherwise not very good at the job, are they part of the supply? If they have good technical skills, but not the personal attributes that employers want, are they part of the supply?

With only a few exceptions, it is not appropriate to measure the supply of a skill by counting the number of people in the workforce who have a relevant qualification. A closer approximation is to count the number of people who are working in jobs that require that skill. Supply then becomes almost indistinguishable from demand. We must look to other indicators—most usefully, the duration of vacancies—to conclude whether there is a shortage or surplus of a particular skill. But while the duration of vacancies and like measures can tell us about the *current* relation between the demand for and supply of a skill, they are no help in looking forward, to see whether there will be shortages or surpluses in future.

The essential point to conclude from this discussion is that measures of the supply of and demand for skills are imprecise, and in many (but not all) cases qualifications are not a close proxy for either. It follows that the formal VET system is only part (albeit an important part) of the mechanisms for balancing supply and demand. Skills learned on the job are another part. So too are the various ways that firms adapt to abundance or shortage of a particular skill. A major form of adaptation is by varying the quality of the person they are prepared to employ. When there is an abundance of workers, firms will be able to choose from a queue of appointable applicants and will select the highest quality person that they can identify. Many others of the applicants would have been able to do the job, but perhaps less well. When there is a shortage of workers with relevant skills, firms will accept workers who have fewer of the set of attributes that they are looking for, or have them to a lesser degree. Firms will also adjust the relative pay and conditions of the job, in response to an abundance or shortage of the skills they want. But this is only part of the adjustment mechanism.

Even if it were possible to pin down precisely the quantity of a skill that is/will be supplied and demanded, it is mostly not necessary to do so. The labour market, and the economy in which it is embedded, 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 that they work. At the same time, the demand for skills is dynamic, as firms are born, grow, decline and die, alter the size and skill set of their workforce, recruit strategic new skills, and train their existing employees with new skills as required. As workers and firms search for a good match, shortages and surpluses often sort themselves out. The VET sector does not need to try to identify every new skilled vacancy that will occur and then train someone to fill it.

While the labour market works, it does not work perfectly. The challenge for VET policy is to identify how best it can assist the adaptive processes of the market, so that adjustments to emerging skills surpluses and shortages are as smooth and fast as possible.

The future demand for skills

Aggregate models

Many countries, including Australia, draw on sophisticated empirical models of their economies to project future trends. These are used, among other things, to project the growth in employment in each occupation, at quite detailed levels. The key features of these models are that they:

- ✧ describe the entire economy
- ✧ use a combination of economic theory and known (or estimated) empirical relationships to project the future size and shape of the economy
- ✧ are internally consistent, in that the changes that are projected must add up
- ✧ adopt a general equilibrium framework that traces through the impact of a change in one aspect of the economy on all the other parts.

Several such models have been constructed for Australia—by the Commonwealth Treasury, several university groups and some consultants. The one that is most widely used for forecasting occupational demand is the MONASH model, produced by the Centre for Policy Studies at Monash University.

By both Australian and international standards, the MONASH model is sophisticated and of high quality. But all such models attempt a prodigious task. The economy is very diverse and complex, many relationships are not linear, there are unpredictable shocks from the international economy, from technological change, from individual behaviours, and from government policy. These factors make it almost impossible to project the future with accuracy and detail. Yet such projections are precisely what users of these models want. In the light of this, one would expect to see many careful evaluations of the accuracy of the forecasts of these models. But such evaluations are themselves difficult to do well and there are few of them. To illustrate the difficulties, we quote Haskel and Holt, referring to the evaluation of UK models:

Changing systems of classification for industries and occupations, major revisions of historical databases, belated publication of crucial data sets, as well as major and significant improvements to the modeling framework, all contribute to a very confusing picture if one tries to compare past projections with outcomes. A very considerable effort would be required to ensure that like is compared to like and to disentangle the various possible causes of error (data revisions, model failure, erroneous judgment, etc.). Because of this there have been few systematic attempts to undertake such an analysis. (Haskel & Holt 1999, p.19)

Despite the difficulties, we argue that more efforts should be made to judge the accuracy of model forecasts, and to identify what aspects are most and least accurate. An evaluation of the MONASH model undertaken by Access Economics (2005) came to the following main conclusions about the robustness of its labour market forecasts.

- ✧ The projections of the levels of employment were reasonably reliable at an aggregate (Australia-wide) level.
- ✧ Reliability fell as projections were provided at a more detailed level, disaggregating by region, by occupation and by qualification level.
- ✧ Reliability was too low for projections to be valuable for planning VET capacity at specific skills or regional level.
- ✧ Reliability fell as the length of the forecast period rose.

This suggests that model projections should be used judiciously to inform the planning process. In our judgement, they are best used to assist the VET sector to align the broad structure of its offerings to the anticipated future needs of the economy, including replacement demand. It is unreasonable to expect such models to be able to provide accurate projections of the detailed

occupational demand at a regional level five to ten years into the future. Model-based projections of demand growth are likely to be valuable if their purpose is understood to distinguish skills that are likely to be in growing demand, from skills likely to be in static or falling demand. They will be much less satisfactory if they are expected to provide detailed information on year-by-year fluctuation in demand, for specific skills and, for example, by region.

Capturing recent history

As an alternative to using large, complex, data-intensive models to look forward, we sought to capture the evolving trends through fitting best-fit curves to past data. The trends for net occupational growth were then projected forward as far as 15 years. We concentrated on those occupations that made intensive use of vocational qualifications (excluding the professions and elementary service and production jobs). The caveats that apply to model-based projections apply with equal force to trend-based projections. We therefore did not attempt to disaggregate beyond the two-digit occupational codes, or by region. Projections of increases in net demand become increasingly unreliable as the time horizon extends and the 15-year projections are at best suggestive.

In sum, we concluded that, for the VET-intensive occupations:

- ✧ employment will grow a little faster than total employment
- ✧ the economy will need a net addition of about 500 000 VET-qualified workers by 2020
- ✧ at its peak, there will be 1.2 million exits of workers per annum, and only 0.4 million entrants
- ✧ the greatest growth in net demand will be for:
 - ◆ advanced diploma and diploma qualifications (especially in business and management)
 - ◆ intermediate service workers
 - ◆ skilled horticulture/agriculture workers
 - ◆ construction workers
- ✧ there will be falls in the number of people employed as:
 - ◆ farmers and farm managers
 - ◆ automotive and food tradespersons
 - ◆ secretaries and personal assistants
- ✧ there will be slow growth in demand for:
 - ◆ other categories of tradespeople
 - ◆ advanced clerical and service workers.

These projections give us some feel for how the pattern of occupations is changing, but only an indirect account of the changing demand for skills. We obtain a more direct account of the evolving demand for skills by looking within each (detailed) occupation to see what skills are required to perform the job. We applied a framework derived from the US Department of Labor's Dictionary of Occupational Titles to code each (four-digit ASCO) occupation, according to its requirements for cognitive skills, interactive skills and motor skills, and the level of complexity with which the skills need to be applied. The skill scales are set out in Table 2 below.

The skill scores of each occupation were combined with our projections of growth in a) the VET-intensive occupations and b) the fastest growing industries to provide estimates of projected growth in demand for specific types and levels of skill. These projections reveal that cognitive and interactive skills will become increasingly important, at the expense of motor skills. Further, the level of complexity of the skills will rise. Interviews with key informants reinforced these conclusions. The VET sector will serve its students well if it pays careful attention to identifying the cognitive and interactive skills that will increasingly be valued in most of the vocational occupations. At the same time, it will be called upon to provide increasingly sophisticated training in such high-level cognitive and interactive skills as analysing and negotiation, in the growing number of jobs that will require these skills.

Table 2 Scale of complexity for skill categories

Cognitive skills ('data')	Interactive skills ('people')	Motor skills ('things')
0 Synthesing	0 Mentoring	0 Setting up
1 Coordinating	1 Negotiating	1 Precision working
2 Analysing	2 Instructing	2 Operating – controlling
3 Compiling	3 Supervising	3 Driving – operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking – signalling	6 Feeding
	7 Serving	7 Handling
	8 Taking Instructions – helping	

Note: The lower the scale value, the higher the level of skill.

It is clear that the structure of industry, and with it the structure of occupations, is changing. There is also an often-heard view that the way in which work is organised within an industry is changing, towards:

- ✧ the use of team-based work systems, requiring cooperation and multi-skilling among team members
- ✧ the decentralisation of authority and decision-making
- ✧ the sharing of knowledge between employees to facilitate efficient work and rapid response to changing market demands
- ✧ greater responsibility for work being taken by the workers themselves
- ✧ the practice of workers moving freely between tasks as required.

Together, these are often described as the characteristics of high-performance workplaces. Their success requires that workers, in addition to possessing task-specific skills, also have teamwork skills and the ability to adapt and learn quickly. If it is true that workplaces really are changing in the manner described, then it places important demands on the VET sector to promote the capacities in their students that would enable them to flourish in such an environment.

Our study found that there is little evidence that high-performance workplaces are indeed becoming widespread. While there have been many experiments, few have persisted beyond an initial implementation phase. What *has* been happening, however, is re-organisation designed to reduce costs. This principally involves reducing the size of the workforce (but not the work to be done), and increasing the numbers of workers on contingent terms of employment (for example, casual and agency). Workers in this new environment probably do need additional skills, and some of these skills match those purportedly required in high-performance workplaces. Casual and contract staff benefit from a capacity to cooperate and to quickly negotiate their place in the organisation. The supervisors who remain after downsizing need a wider range of skills as they are expected to take on some of the managerial functions, such as budgeting, managing occupational health and safety, dealing with complaints and with rostering.

Demand from students

The student body undertaking vocational education courses is becoming older and more female. One reason for this is the increasing variety of pathways through the life course that are now becoming apparent. By life course we mean the timing and sequencing of major life events, such as completing full-time education, leaving home, commencing full-time work, getting married, having children, undertaking further study, and retirement. A clear majority of Australians still move through these stages in the conventional order. But a growing minority are doing it differently. The differences include delayed movement out of the parental home; combining full-time education with part-time work; delayed partnering and parenting; combining motherhood with paid

employment, for both married and single mothers; increasing part-time employment or non-employment of prime-age men; and participation in education and training in adult years (often while in full-time employment). These changes have implications for both the number and characteristics of the post-secondary school student body.

The composition of the tertiary student body displayed some significant elements of change. First, the proportion of *full-time* students in conventional life course statuses hardly changed between 1981 and 2001, though a smaller proportion were in training immediately after leaving school and more were upgrading existing qualifications. Secondly, the age distribution of CAE¹/university students hardly changed, while that of TAFE/college students aged somewhat. However, the proportion of *part-time* students in non-conventional life course statuses increased sharply to just over half by 2001. Moreover, virtually all of this increase in diversity amongst part-time students was in the VET sector. The rising proportion of VET students in non-conventional life course pathways arose from a variety of sources, including increasing proportions taking their first post-school qualification after the age of 29, more single parents, and more prime-aged men without full-time jobs. Much more than universities, the TAFE/college sector is the rising route of choice for these relatively disadvantaged groups, and for those in a whole range of other non-conventional life course statuses.

The consequences for the age and sex distribution of VET students are seen in Table 3.

Table 3 Share of each age and sex group of all VET students in 1996, and of the growth in VET students, 1996–2005

Age	Females		Males	
	Share in 1996	Share of increase	Share in 1996	Share of increase
15–19	28	28	38	35
20–24	21	12	25	19
25–29	11	4	11	5
30–39	20	11	16	6
40–49	13	23	8	15
50+	5	19	4	18
Total	100	100	100	100
Gender shares of all VET students	47	57	53	43

Source: Figures derived by the authors from NCVET data.

Table 3 shows that students going straight from school (aged 15–19) remain a large and constant part of the VET student body. But the proportion aged 20–39 has fallen for both men and women, while the proportion aged over 40 has risen substantially. Over 40% of the increase in the number of female VET students were aged over 40, while the comparable figure for men was 33%. A clear majority of the additional students (57%) were female.

Given the continuation of existing patterns of skill utilisation through the life course, the VET sector has two important opportunities. First, it can continue to provide training to school leavers entering a conventional life trajectory of completing training before commencing a career. Second, it can cater to the special circumstances of its increasingly unconventional part-time student body, thereby enhancing the employment opportunities of these relatively disadvantaged groups and increasing the supply of relevant skills to the Australian labour market from non-conventional employees.

Further analysis examined how people offer their skills on the labour market over their lives, and whether this is changing. We found that patterns of skill utilisation are quite different across different occupations, and amongst women compared to men. Two key points in relation to skills imparted by the VET sector are the following. First, tradesmen (the gendered term is intended)

¹ College of advanced education; later became universities.

generally obtain their training and enter their occupations by their mid-20s. However, rather than remaining in their occupations as, for example, professionals tend to, they begin leaving them almost immediately, and continue to do so at a fairly steady rate throughout the working-age ranges. In contrast, people enter the management, associate professional and intermediate clerical jobs at every age up to the mid-40s. Second, male clerical, sales and service workers appear likely to be gradually promoted to more responsible positions over their careers, thus reducing their involvement at more routine levels of these occupations at older ages. However, many women in these occupations leave their jobs (or, probably, reduce their hours) at prime childbearing ages, and then re-enter them at older ages. These older women are an important source of entrants to the more elementary and intermediate of these occupations. While the data are far from perfect, there is no evidence that any of these patterns of skill utilisation is changing substantially, beyond the generally increasing labour force participation of women that makes them more likely to use their skills at older ages.

In sum

The future demand for vocational skills is difficult to project with confidence. But current trends suggest that, while there has been a large shift towards higher education, the demand for vocational skills is likely to remain strong, though to change character. It is evolving in two ways. One is towards higher-level qualifications—advanced diplomas and diplomas. The other is towards more widespread and higher-level interactive and cognitive, as distinct from motor, skills. The recent strong employer demand for some of the skilled trades goes against a longer-term trend for slow growth in trades employment. The growth areas, rather, are for skills to serve higher end service industry needs, especially business and administration skills. It is the change in the structure of industry, much more than any change in the ways in which existing tasks are done, that is driving the move towards higher level vocational skills.

The future supply of skills

There are two main forces affecting the supply of vocational skills. One is the extent to which people acquire new vocational skills, either through undertaking formal courses or by learning these skills on the job. The other is the outflow of skills that occurs as a result of retirement. Over the next 15 years, the ageing of the workforce will increase the rate of outflow of skilled workers, but more so in some occupations than in others.

The size of the adult population (aged 15 years and over) will grow by 3.3 million from 2005 (some 16.2 million) to 2020 (some 19.5 million). But the age structure of both the adult population and of the component of traditional working age (15–64) will change. Over the next 15 years, the population of working age will continue to grow (by 1.7 million people), albeit at a declining rate. The most rapid growth will be among the older ages. The proportion of the working age population aged 50–64 will rise from 25% to 30% in the 15 years to 2020, while the proportion aged 30–49 will fall from 44% to 41%. The rising proportion of workers in older age groups means that the absolute number of people exiting from the labour force each year will almost double, taking with them their valuable vocational skills.

Despite this increase in retirements, the stock of vocational skills will rise as more qualified age cohorts move through the workforce. Reinforcing this is the shift to higher-level qualifications among the VET-qualified workforce. This is particularly apparent in the advanced diploma and diploma qualifications that are being obtained by people working in managerial and more senior administrative positions, and in many of the associate professional occupations.

By 2020, the total number of people with VET qualifications projected to be employed in the five VET-intensive occupations will, at around 2.81 million, be almost half a million more than in 2004. Most of the increase will be for qualifications in the fields of associate professional and managerial and administrative work.

For males, almost all new entrants to the workforce are and will continue to be young: 85% are teenagers and 15% are 20–24 when they get their first job. VET has a crucial role in providing learning options for these young men. The age profile for female new entrants is more complex, with teenagers comprising about 60% currently, but falling to 52% in future.

The VET-intensive occupations that will have the most rapidly ageing profile are mostly the associate professional and advanced clerical jobs. Of these, the most rapidly ageing, measured by change in the proportion aged 55 years or over, are health and welfare, science/engineering and other associate professionals, and secretaries and personal assistants. These are the types of jobs where experience is particularly valuable, and physical capacity much less so. There is every chance, then, that the productivity of these workforces will actually increase as a result of the ageing that will occur over the next 15 years, as they become more experienced, even without any additional formal VET training. If we think of the supply of skills as the number of people employed, multiplied by their productivity, as we should, then the effect of ageing for the most rapidly ageing occupations will most likely be to increase the supply.

The same thing is much less likely to be true for the trade occupations. One reason is that they are expected to age less rapidly (a relatively small proportion being in the ‘baby boom’ age group, because many have left the trades by their middle ages). A second reason is that the trades often make more physical demands on workers than do the white-collar professional and managerial jobs. As people pass their mid-50s, these physical demands are likely to be less easily managed, thus preventing an increase, or leading to a decrease, in productivity. The productivity of tradespeople rises quite fast soon after they complete their qualification, but only slowly for the remainder of their time in the occupation. This, in turn, means that changes in the age distribution of tradespeople will have little effect on their average productivity, and hence on this aspect of the supply of trades skills.

Skills learned on the job

The reason that many people can work in jobs for which they have no formal qualification is that they learn the necessary skills informally on the job. People learn to be better, more efficient and more productive workers in the process of doing their jobs. They also learn new skills incrementally, thus keeping abreast of developments in technology. Some of this learning is gained from the advice and informal instruction of fellow workers. Some arises from more formal instruction on the employer’s premises, organised and paid for by the employer but not leading to formal educational qualifications. Some is learned from formal instruction that does lead to a qualification, which may or may not be funded by the employer. The informal ways of learning add considerably more to the stock of worker skills than does formal instruction in accredited courses (Richardson 2004). On-the-job learning is a vital part of the system for the development of vocational skills.

Not all jobs are equally good at providing opportunities for skills development. One aspect that affects such opportunities is the expectation that a person will stay in their job for a reasonable period. It is costly for employers to take on less skilled people and then to assist them to learn the necessary skills. Employers will be reluctant to incur these costs for workers who are likely not to be with them for long, and who will take the extra skills learned with them when they leave. One indicator of how long a job is expected to last is the form of the employment contract. There are many ways in which people are employed. These include permanent full-time or part-time jobs, casual full-time or part-time jobs, agency, labour hire, and labour-only sub-contractors. The first category is the one that signals the greatest intention of longer duration employment. The other categories are often referred to as contingent forms of employment. We show that the expectation that people who are employed on permanent contracts get substantially more skills development on the job is in fact correct.

✧ Most types of training that are acquired on the job are systematically and substantially less for casual employees compared with permanent employees. The one exception is training that is not

supported by the employer. Casual workers are less likely to experience employer-provided training; such training as they do get is more likely to be basic induction and safety training; and the total hours that they spend in training is about two-thirds that of permanent workers.

- ✧ The total hours of employer-sponsored training has fallen over the four years to 2005, by 15% for permanent and 27% for casual workers. In total, casual workers get about half the employer-provided internal training and a mere fraction of the employer support for external courses that permanent workers get.
- ✧ It is very likely that levels of job-related training that are received by labour hire and self-employed workers are also less than those experienced by full-time continuing workers, though evidence on this is scarce.

Overall, it is the expectation that the employee will have continuing employment with the firm, rather than the number of hours worked, that seems to be the powerful force influencing the extent of job-related training. This is what is to be expected. Firms recover the cost of the training they provide to workers only if the workers continue in the job.

Is the low level of training for casual workers just a consequence of the occupations, industries or personal characteristics associated with a casual contract? The limited evidence shows that, even when controlling for a wide range of personal and job characteristics, casual employees were still much less likely to have undertaken employer-supported training.

The importance of this is that there have been major changes in the ways in which people are being employed. These changes are strongly *away from* permanent full-time employment and towards all the alternatives, especially for men. In 1992, 70% of all jobs were full-time and permanent, so it was appropriate to view such a form of employment as the norm, or standard. But since then, only 41% of the 1.9 million extra jobs created were full-time permanent jobs. Growth has been particularly strong in casual employment and a new trend has developed—the full-time casual. All the changes are more pronounced for men than they are for women.

Table 4 shows the key changes, for men and women, in permanent/casual and full-time/part-time employment.

Table 4 Forms of employment as percentage of employment by full-time/part-time and sex, 1992–2005

Sex	Form of employment		1992	2005	Change from 1992–2005	
			('000)	('000)	('000)	% of increase
Male	Full-time	Permanent	2769.9	3159.7	389.8	20
		Casual	201.5	370.2	168.7	9
	Part-time	Permanent	68.7	152.3	83.6	4
		Casual	261.3	445.8	184.5	10
Female	Full-time	Permanent	1475.6	1879.5	403.9	21
		Casual	118.2	215.1	96.9	5
	Part-time	Permanent	424.0	811.5	387.5	20
		Casual	713.2	917.9	204.7	11
Total		6032.6	7952.1	1919.5	100	

Note: Excludes the self-employed.

Source: ABS Labour Market Statistics, cat. no.6105.0, various issues.

Table 4 shows that, since 1992:

- ✧ only 20% of all new jobs were for men employed full-time on a permanent basis
- ✧ women have seen strong growth in permanent jobs, both full- and part-time
- ✧ men have seen a large fall in permanent full-time jobs and a large rise in casual jobs, both full- and part-time.

The employment of men full-time, but on a casual basis, is rising rapidly. In 1992, 6% of men were employed on these terms, but they comprise *20% of all new jobs for men* created since then. Growth in permanent jobs has been concentrated in occupations that mostly require higher education, rather than vocational education. The vocationally important trades occupations and advanced clerical occupations have seen particularly large shifts away from permanent full-time employment, up to 2005.

Men have been more adversely affected by the trend to casual and part-time employment than have women. The gender difference is amplified by the fact that for men, casual employment, even if full-time, offers particularly low levels of job-related training. The category of employment that is growing fastest for men (casual, including full-time casual) is also the one that is least likely to offer opportunities for skills development on the job.

Implications for VET

The shift to casual employment for full-time (especially male) workers that is highlighted in this study is a new and substantial development. It has very significant implications for the ways in which vocational skills are acquired. In particular, the contribution that is made by employers, through the provision of training on the job, is almost certainly diminished by this development. The implications for training are reinforced by the fact that such growth in continuing jobs as there was for men was not in the key learning ages of 20–30, but in the established ages of 45–60. Employment growth for 20 to 30-year-olds, such as it was, was almost entirely in casual employment—especially for men. This is a very significant development. Earnings profiles show that the age group 20–30 is when formal and informal learning on the job is especially strong.

The shift away from full-time continuing employment is likely to put the informal and semi-formal processes for vocational skill development seriously at risk. Learning on the job has always been a fundamental part of the way in which the less educated enhance their skills (and job opportunities and wages). This group is likely to be particularly hard hit by the shift to casual, labour hire and labour-only contracting that is such a part of recent Australian labour market history.

If the trends we have identified persist, then Australia must look to other ways of ensuring the continuing enhancement, refreshment and adaptation of its stock of vocational skills. In particular, it is likely that the task of such skills enhancement will shift increasingly to the formal VET providers. There will need to be more VET courses, geographically accessible to the entire vocational workforce. These courses will need to cater for people at many points in their career, and from a wide variety of backgrounds. The reduced employer support for training means that, if it is not to fall, skills development will increasingly need to be funded by the workers themselves, and the taxpayer.

Patterns of participation in VET

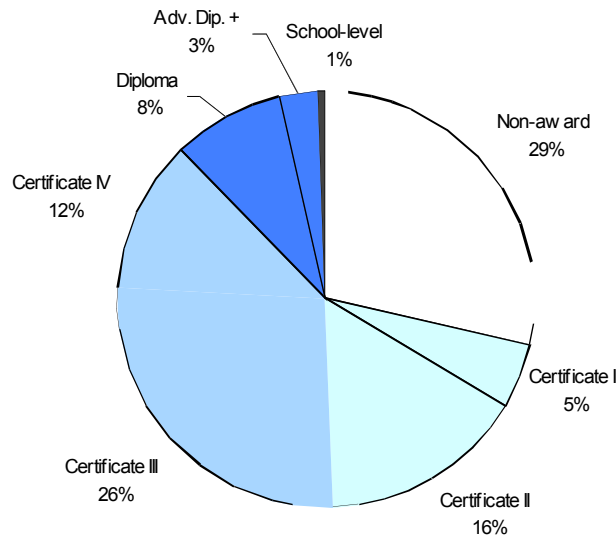
The future direction of skill requirements and the likely growing importance of the formal VET sector to the Australian economy raise the question whether the current ‘reach’ of the sector into the Australian community is adequate. Community reach can be defined in terms of which groups participate in formal VET (social breadth) and at what levels of training (educational depth).

A well-skilled future depends on a population that is responsive to emerging skill needs and has effective access to appropriate training opportunities. As well as accessible opportunities, people need incentives to invest in training, confidence in the likely value of this, as against other uses of their time and energy, and also the individual capacity to undertake training, given levels of schooling and post-school education or experience. Economic projections suggest that higher levels of training will be required in the future, and in general these depend on either successful schooling or substantial relevant experience in the workplace. Thus, it is not only the responsiveness of the

formal VET sector that is relevant to the goal of a well-skilled future, but the effectiveness of schooling, including for a wide cross-section of the population.

Looking at the award pattern of participation in the public VET system in 2004, about half of all students across Australia are enrolled in basic courses (certificates I and II) or in non-award courses (see Figure 1).

Figure 1 Students by AQF level, Australia, 2004



Source: Figures derived by the authors from NCVET data.

Schooling levels and VET participation

This pattern of participation reflects a number of population characteristics which set limits on the responsiveness of the VET sector to emerging skill needs. As has already been noted above, in 2005 some 30% of school leavers and 23% of individuals aged 20–24 were not engaged full-time in some combination of study and/or work. Approximately one in four young people leaves school without completing a senior school certificate. Over time, this contributes a large pool of individuals with incomplete schooling. Besides the population who are schooled in Australia, many immigrants to Australia who are now active in the workforce did not complete school. The VET sector is the most accessible avenue of training for these groups. The award pattern of participation reflects this. As a result, while industry training needs are shifting upwards in terms of required levels of training, a large proportion of the total training effort is currently absorbed in courses which essentially compensate for incomplete schooling.

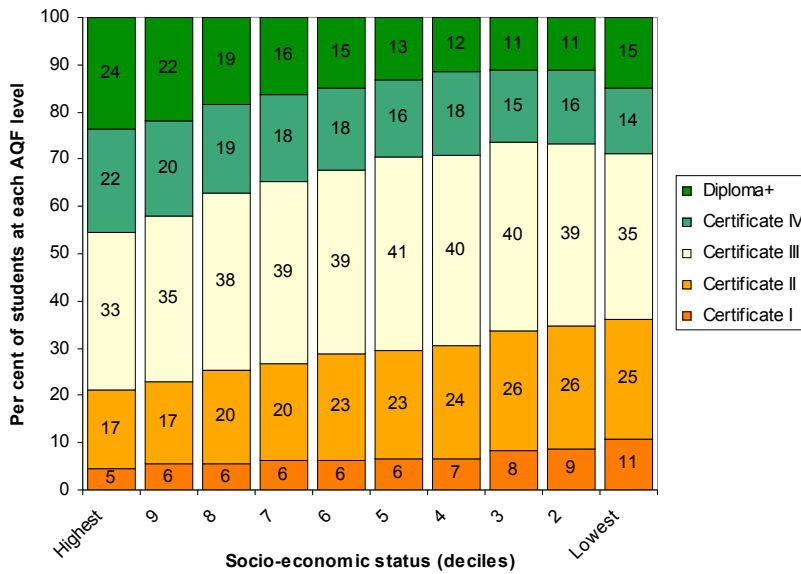
A second relevant issue relates to award progression. To what extent do individuals who undertake basic training move on to skilled and higher-level VET? It is not clear that the Australian Qualifications Framework (AQF) functions as a system of training progression involving significant levels of vertical mobility, notwithstanding that this is its intention.

The social hierarchy in award participation

Associated with this segmented pattern is a social pattern of participation. As participation in higher levels of VET tends to be linked to completed schooling, and as school completion is in turn linked to socioeconomic status (SES), the higher award levels also have higher SES intakes. By contrast, as early school leaving is more common amongst lower SES groups, the VET courses that compensate for this also have lower SES intakes.

An analysis of award levels of participation by band of SES is presented in Figure 2.

Figure 2 Award pattern of VET participation in each band of SES

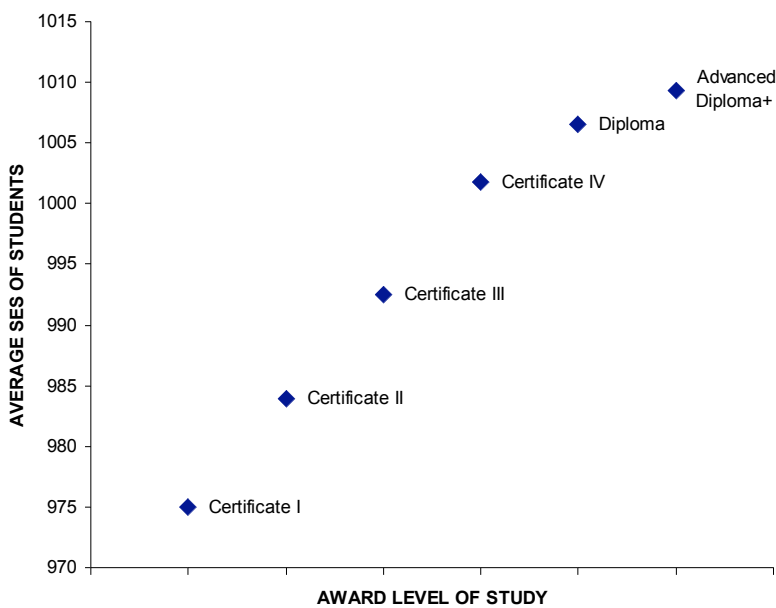


Source: Figures derived by the authors from AVETMISS data (NCVER).

This shows, for example, that as many as 46% of VET students of high SES are enrolled in middle-level programs (Certificate IV and above), and only 24% in basic VET (Certificates I and II). Looking at the lower end of the social scale, only 29% of students in the lowest tenth band of SES are enrolled in middle-level programs, while 36% are taking basic courses.

These different patterns of award participation produce a social hierarchy in the AQF which is graphically illustrated in Figure 3. In general, the higher the level of training, the higher the SES level of the people undertaking training.

Figure 3 Average SES of students enrolled in a VET course by AQF level, 2004



Source: Figures derived by the authors from NCVER data.

The double challenge of higher skills levels and greater equity

The challenge facing the VET sector is not only to deliver higher levels of skills, but to broaden the social basis of the population who have these skills.

This challenge can be formulated in the question: Can we achieve greater overall depth of training—a more highly skilled population overall—without achieving greater social breadth at higher AQF levels?

To meet the double challenge of training depth and social breadth assumes that the major barriers which block participation—including for particular groups—can be identified. So what are the barriers?

Barriers to participation

Analysis of geographical variation in VET participation and field studies of provision suggest that there are three main barriers which need to be addressed:

- ✧ structural
- ✧ demographic or cultural
- ✧ institutional.

Structural barriers to participation relate to the nature of industry, employment and the labour market in a region. Regional economic structure influences participation in VET through the presence or absence of employment incentives to training. Where local industry generates work which requires formal training, this creates economic incentives for individuals to invest in training. But where employment is concentrated in sectors with limited call on formal training, the incentives are weaker.

In Australia, a high implantation of manufacturing, mining, retail and some other sectors (such as energy) is associated with higher rates of participation in VET, after controlling for demographic influences.

Overall levels of employment also affect participation. Where unemployment is high, this appears to generate a disincentive to training, resulting in lower levels of participation.

Cultural barriers relate to population characteristics, on the one hand, and to attitudes and perceptions, on the other. The population characteristics that influence regional differences in participation are educational attainment, indigeneity, and ethnicity (non-English speaking origins).

Where the adult population has acquired a relatively high level of post-school qualification as measured by the proportion of diploma or degree-holders, participation in VET tends to be lower.

Indigeneity has a variable independent influence on VET participation, depending on the award level. The higher the relative incidence of the indigenous population, the higher the rate of participation in basic VET and the lower the rate of participation at diploma level.

Non-English speaking origin is positively related to VET participation, especially in non-award programs, but also at diploma level.

These demographic characteristics are influential, but not as powerful as economic factors. Regional economic structure accounts for very much more of the variation in VET participation. However, the demographic impact tends to rise as award levels are ascended. In other words, the nature of the population becomes increasingly important, the higher the level at which VET is undertaken.

There are other cultural factors which are known to influence participation in VET. These will simply be noted here rather than documented. Perceptions of the VET sector influence the

willingness of individuals—especially school leavers—to undertake VET. Some studies suggest that school leavers often have poor knowledge of VET and view the sector as more suitable for low achievers (see, for example, Teese, Mason & Nicholas 2005).

Institutional barriers to participation refer to the way VET providers relate to industry and community. Field studies suggest that VET providers differ in the strength of their links with local business and industry, with local communities, with other VET providers, and with schools, and how more generally they perceive their client base (which students, which industries?).

The challenge to the VET sector is how to reduce structural, cultural and institutional barriers to participation in order to raise overall levels of training and widen social access to these levels.

The VET system of the future: Setting priorities

The VET system of the future will deliver higher levels of training than at present. That is, a greater share of its resources and a greater proportion of its students will be found in skilled, middle-level and advanced training. At the same time, VET will be extending opportunities to these levels to a wider social range of individuals. The future VET system will be better linked to business and industry at a local level, as well as give greater mobility to people so that they can work outside their region and circulate more freely within the global economy. Providers will be more flexible in delivery approaches, including in the workplace. There will be a greater mix of providers—including adult and community providers—to suit both employers and employees.

Working towards such a future requires setting priorities. Building a platform of foundation skills (both general and vocational) will remain a priority, especially where individuals have incomplete schooling or an unsatisfactory experience of schooling.

However, progressively over time, priorities should shift to focus on skilled, middle-level and higher training—all of which represent what is distinctive in the work of VET and which contribute ‘added value’. That is, these levels of VET build on and enrich successful schooling or successful integration in the workplace, and extend the capacities of individuals.

Within this ‘value add’ perspective, equity will be a major priority. Broadening the social basis of recruitment to skilled and higher levels of training is vital if the whole of the population is to contribute to the enhanced skills base of the future.

Equity will impose the need for client-sensitive delivery approaches as well as effective inclusiveness strategies.

For VET to shift towards value-added work presupposes corresponding improvements in how school works for all sections of the population. This means more successful schooling for learners from lower socioeconomic status backgrounds and broader perspectives for more successful students who sometimes overlook the potential of VET courses to meet their needs.

From priorities to strategies

In broad terms, the twin objectives of greater training depth and greater social breadth will call for strategies which:

- ❖ achieve a mix of providers and delivery platforms to increase flexibility and responsiveness
- ❖ multiply the employment incentives to training as well as accessible opportunities for training
- ❖ build employer commitment to training, including in the workplace.

Models of VET in high-participation regions

The VET sector already displays these strategies at work in a range of different regional settings.

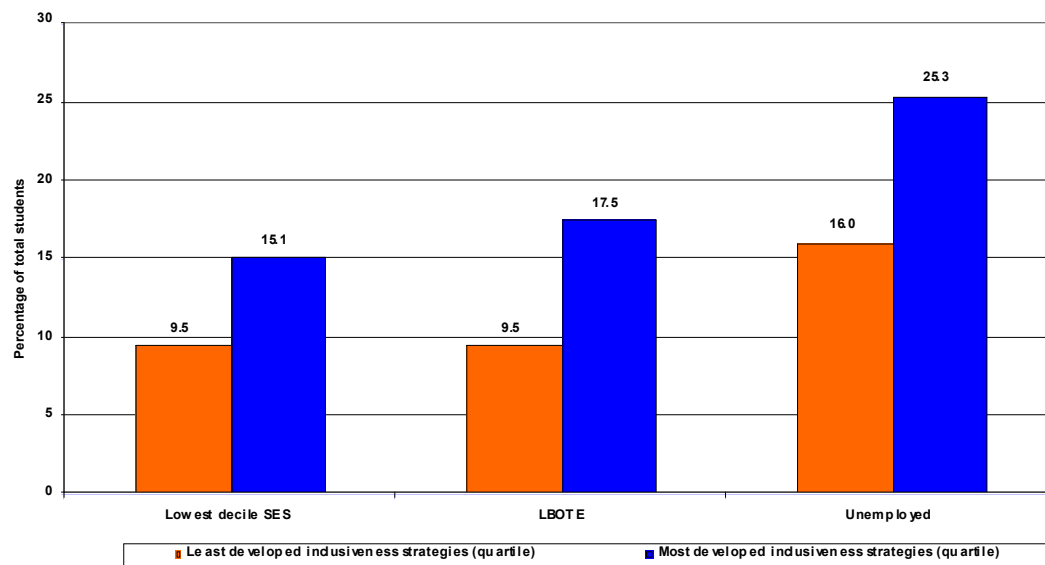
Field studies indicate that high levels of participation in VET can be achieved through two models of provision: a community partnership model and a market-based model.

The community-partnership model is characterised by:

- ✧ partnerships facilitated through local government
- ✧ providers establishing a business development unit comprising industry liaison officers
- ✧ strong partnerships between VET providers, local businesses, local government and schools
- ✧ regular liaison and monitoring of businesses in region
- ✧ flexible delivery: workplace, campus-based, online, combinations
- ✧ for individuals and groups, strong focus on needs assessment and targeted programs.

The key role of inclusiveness strategies is captured in Figure 4. This shows that where TAFE institutes have well-developed strategies, levels of VET participation of individuals from poorer backgrounds, non-English speaking backgrounds, and the unemployed are much higher.

Figure 4 Rates of participation of selected groups in 58 Australian TAFEs by least and most well-developed inclusiveness strategies, 2004



Source: NCVET (AVETMISS data 2004) and Volkoff, Clarke and Walstab (2008).

The market-based model is characterised by:

- ✧ many and varied providers, including private and community providers and TAFE
- ✧ industry growth and diversification as key in defining role of VET providers
- ✧ competition, particularly for fee-for-service and industry training
- ✧ all providers with a skills assessment unit
- ✧ development of customised training programs, modules, competencies, qualifications
- ✧ flexible delivery (workplace, campus, online, blended delivery) and timelines
- ✧ focus on appropriate pedagogy suited to need

- ✧ continual liaison with industry by staff to maintain relevance
- ✧ work placements as feature of all training
- ✧ local government has limited or no role.

Both the community partnership and the market-based model are effective in lifting participation rates in VET to levels above what would be expected from regional economic and demographic influences.

Which model works best will depend on the particular nature of a region. For example, remoteness in some country regions will not support multiple providers and works against competition. But on the other hand, remoteness strengthens the argument for good relationships between VET providers and schools.

The operation of these models in diverse settings confirms the responsiveness of the VET sector to both industry and individual need. The challenge is for the sector to set priorities in the context of needs which are evolving upwards (in skill terms) and more widely (in population terms).

Towards a well-skilled future

At the system-wide level, VET should focus on distinguishing skills that are in growing demand from those that are in declining demand and identifying skills where replacement vacancies will be large. In the face of the large and irreducible uncertainty about the future details of demand, the VET system should:

- ✧ devote most of its forecasting effort to those skills that take a long time to learn and to gear up to teach and where shortages impose serious bottlenecks on production
- ✧ for the rest, establish an outstanding capacity to monitor emerging shortages and surpluses, together with a capacity to respond quickly to them.

The successful regions show that the VET system possesses within it the knowledge of how to achieve the second of these very well. The greatest gains will come from extending the strategies of the best regions to the entire system. A densely populated VET landscape, collaborative local networks, positive community attitudes and responsiveness to the motivations of potential students are essential components of what is required.

The VET system will need more resources, as it faces a more demanding future. It will need simultaneously to expand its size, teach at higher levels, teach a more diverse and older student body, and extend its geographic reach. The greatest expansion in demand for VET courses will be for higher-level qualifications. It will require a skilful management of the culture and resources of VET for it simultaneously to improve its services to the educationally disadvantaged, while placing a growing emphasis on its top-end qualifications for associate professional and managerial jobs.

The VET system will face pressure to offset the reductions in employer-based training, though it is difficult for it to replicate the geographical spread and range of skills that employer-based learning provides. It should seek creative ways to work with and through employers as agents of training. In this way, there is an opportunity for the VET sector to take a lead in training workers who, at unconventional points in their lives, will supply skills that are in short supply.

References

- Access Economics 2005, *Improved forecasts of employment growth and net replacement rates*, report for the Victorian Office of Training and Tertiary Education, Melbourne.
- Dusseldorp Skills Forum 2006, *How young people are faring, 2006: Key indicators*, viewed 13 April 2008, <<http://www.dsf.org.au>>.
- Haskel, J & Holt, R 1999, *Anticipating future skill needs: Can it be done? Does it need to be done?*, a paper for the Skills Task Force, Department of Economics, Queen Mary & Westfield College, London.
- Richardson, S 2004, *Employers' contribution to training*, NCVER, Adelaide.
- Richardson, S, Tan, Y, Lane, A & Flavel, J 2006, *Reasons why people with VET qualifications are employed in lower skilled occupations and industries*, National Institute of Labour Studies, viewed 13 April 2008, <<http://www.flinders.edu.au/NILS>>.
- Teese, R., Mason, K, & Nicholas, T 2005, *TAFE as first choice: Characteristics, employment outcomes and attitudes of young people who do not undertake tertiary study on leaving school in Victoria*, report prepared for the Office of Training and Tertiary Education, Victoria, University of Melbourne, Centre for Post-compulsory Education and Lifelong Learning, Melbourne.

Appendix 1:

Skills consortium publications

The following is the complete list of titles produced by the National Institute of Labour Studies, Flinders University and the Centre for Post-compulsory Education and Lifelong Learning, University of Melbourne, through the research project, A well-skilled future: Tailoring VET to the emerging labour market.

Forecasting future demands: What we can and cannot know

Sue Richardson and Yan Tan

Future skill needs: Projections and employers' views

Diannah Lowry, Simon Molloy and Samuel McGlennon

Demographic impacts on the future supply of vocational skills

Yan Tan and Sue Richardson

Skill acquisition and use across the life course: Current trends, future prospects

Bill Martin

What is a skill shortage?

Sue Richardson

Changing forms of employment and their implications for the development of skills

Sue Richardson and Peng Liu

Changing work organisation and skill requirements

Bill Martin and Josh Healy

Social area differences in vocational education and training participation

Richard Teese and Anne Walstab

Participation in vocational education and training across Australia: A regional analysis

Anne Walstab and Stephen Lamb

Current vocational education and training strategies and responsiveness to emerging skill shortages and surpluses

Jack Keating

Matching supply and demand: International perspectives

Jack Keating

Impact of TAFE inclusiveness strategies

Veronica Volkoff, Kira Clarke and Anne Walstab

A well-skilled future

Sue Richardson and Richard Teese



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The consortium, *A well-skilled future: Tailoring vocational education and training to the emerging labour market*, comprises researchers from the National Institute of Labour Studies in South Australia and the Centre for Post-compulsory Education and Lifelong Learning in Victoria. Its program of research aims to investigate future work skill needs and work organisation arrangements, and their implications for vocational education and training.

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