



A WELL-SKILLED FUTURE

Tailoring VET to the emerging labour market

Future skill needs: Projections and employers' views

by Diannah Lowry, Simon Molloy & Samuel McGlennon

This research adopts the framework of the US Department of Labor's Dictionary of Occupational Titles to project future demand for skills, using the notion of skills as comprised of cognitive, interactive and motor skills dimensions. It reveals that future jobs are likely to have higher cognitive and interactive components, which will have significant implications for the VET sector.

Introduction

This research addresses the question: how will the demand for vocational skills change in the years to 2011? Definitions of skills have changed in recent times and, as the work-employment relationship continues to evolve, further change is likely. In discussing skill needs over the mid-term, we explore the impact of global and technological change.

This study focuses on projecting the future demand for skills. Rather than using proxies of skill such as 'qualification', 'earnings' or 'occupation', this study adopts a direct conception of skill, based on a task-oriented approach made up of cognitive, interactive and motor skills dimensions. This approach applied a framework derived from the US Department of Labor's Dictionary of Occupational Titles and involved assigning a score for cognitive, interactive and motor skills to each occupation. The table below outlines the tasks and scale for each skill dimension in descending order of complexity.

Scale of complexity for skill categories

Cognitive skills (Data)	Interactive skills (People)	Motor skills (Things)
0 Synthesising	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-Off bearing
	7 Serving	7 Handling
	8 Taking instructions, helping	

Tasks involving more complex judgement and responsibility are given lower numbers for each category, while the less complicated have higher numbers. For example, for people who handle data, 'analysing' is considered a more complex task than 'computing'. The same applies to tasks in the 'things' category. 'Precision working' involves greater complexity than 'tending'.

The study involved quantitative and qualitative approaches. *Quantitative* analyses were performed using an 'industry' approach and an 'occupation' approach. The former involved projecting skills demand based on employment growth in what are predicted to be the most rapidly growing industries; the latter involved projecting skills demand in relevant VET-intensive occupations, based on the projected increase in employment in each of the occupations. The *qualitative* analysis involved consultation and interviews with representatives from employer groups and a large national recruitment firm to determine their views on the key future skills required and what may or may not be expected from the public vocational education system.

RESEARCH OVERVIEW 1.2

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.

A well-skilled future: Tailoring vocational education and training to the emerging labour market

CONSORTIUM RESEARCH PROGRAM



A WELL-SKILLED FUTURE

Tailoring VET to the emerging labour market

What the results show

Results from the *quantitative* analyses revealed that cognitive and interactive skills will become more important. These results were mirrored in the *qualitative* input from interviews with industry representatives. For example, one interviewee expressed frustration that interactive skills were not formally recognised as having equal worth with cognitive and motor skills. Employers in the hospitality sector, for example, saw a clear link between the quality of their employees' interactive skills and the success of their businesses.

An example which clearly illustrates this skills shift in the trades is the changing role of electricians. Traditionally, an electrician was relatively narrowly focused on motor tasks and required cognitive skills over a relatively limited domain. Increasingly, electricians are required to inform, educate and negotiate with customers and suppliers. They also have to deal with the escalating complexity of domestic and industrial electrical and electronic technologies, including programmable logic controllers, home security systems and information technology networks. This requires an expanded skill set, one more closely aligned to interactive worker functions. This is not to downplay the requirement for motor skills for which there are still obvious requirements. But it is clear that the changing technological and social nature of the workplace has led to an increased emphasis on interactive and cognitive skills.

Implications for VET

The implications for VET are that curriculum design needs to take account of the fact that interactive and cognitive skill sets are likely to be increasingly important for a range, perhaps the majority, of occupations. For example, based on comments from employers, training in the hospitality sector needs to emphasise the specific interactive skills required in particular jobs. This includes educating students to understand the potential demand for high levels of interactive and cognitive ability as differentiators in job markets. Training in interactive skills would then move beyond simple customer service training to a more in-depth treatment of higher-level interactive skills such as persuasion and negotiation. In this regard, the notion of 'ascending the skill hierarchy' is an important aspect of skill deepening.

To facilitate this skill deepening, a type of 'targeted curriculum' approach is required, one which would need to incorporate an appropriate examination of each level of qualification, since each of the skill dimensions is likely to hold varying significance at different levels of study.

The need for explicit and formal training in interactive skills for occupations not traditionally associated with such skills is likely. This in turn will require significant flexibility and openness to changes in curriculum on the part of the VET sector and may be challenging in the context of an increase in the demand for *overall* higher-skill levels—there will simply be a greater volume of training activity and some of the additional content is likely to be of a relatively high level of complexity. Given the increased demand for higher-level skills, VET's response will be important in contributing to the general career success of its students and will also play a role in improving their opportunities for flexible career progression.

Employers commented that more consultation with industry would improve VET offerings and ensure that VET kept pace with the changing needs of industry. The results of the quantitative analyses in this study show that these types of industry statements are more than simple catch phrases—industry needs *are* changing and appropriate responses are needed.

This overview is based on the research report, *Future skill needs: Projections and employers' views*. Visit <http://www.ncver.edu.au/publications/1721.html> for more information.