

Linking qualifications and the labour market through capabilities and vocational streams

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About the research

Linking qualifications and the labour market through capabilities and vocational streams

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Qualifications are used differently across occupations. In some they are used to signal that a graduate has the skills required for a regulated occupation and in others they may be used more generally to screen applicants for jobs. However, there are many graduates who do not end up in the intended occupation of their qualification. This research is concerned with improving the links between qualifications and jobs and with opening up career options. It proposes the use of vocational streams and productive capabilities, which focus on the broad-ranging knowledge, skills and attributes that individuals need for a number of occupations within an industry.

This is the final report in the three-year program of research *Vocations: the link between post-compulsory education and the labour market*, which investigated the educational and occupational paths people take and how their study relates to their work. This report synthesises the findings of the three different strands: pathways from VET in Schools; pathways within and between vocational education and training (VET) and higher education; and pathways in the labour market.

Key messages

- The researchers conclude that building better links between education and work will help to provide a more coherent approach to vocational development and in order to do this qualifications and employment need to be reformed together.
- The following policy objectives have been identified through the research:
 - Refocus VET in Schools as a pathway to post-school VET or to apprenticeships in skilled occupations rather than a pathway to a job.
 - Differentiate the approach to tertiary education pathways based on the three purposes of qualifications: labour market entry or progression; access to higher-level studies; and widening participation for disadvantaged students. Qualifications will vary in their emphasis on these three purposes and in the way they are implemented.
 - Revise qualifications so that vocational streams are used as a structuring principle and use productive capabilities as the basis for curriculum.
 - Task communities of trust, consisting of social partners with a common objective, with identifying particular vocational streams and their underpinning capabilities.
 - Restructure industry advisory bodies to include representatives from both higher education- and VET-trained occupations to help with building trust when planning workforce development strategies.

Dr Craig Fowler
Managing Director, NCVER

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This is the final report of a three-year multi-institution project funded by the National Centre for Vocational Education Research. NCVER's funding has allowed us to undertake research that would not otherwise have been possible, and we are grateful for this rare opportunity to undertake research that has allowed us to step back and consider bigger policy issues. We particularly wish to thank Bridget Wibrow, who has been our project manager throughout. She has been an enormous source of patience, support, help and advice.

We also wish to thank all of the researchers who participated in this project. It has been a sustained team effort over the last three years and we wish to acknowledge their efforts and input. This research project had three strands. The participants included:

- Strand 1: Pathways from VET in Schools – Kira Clarke, Professor John Polesel, Dr Veronica Volkoff and Professor Jack Keating from the Melbourne Graduate School, University of Melbourne.
- Strand 2: Pathways within and between vocational education and training and higher education – Associate Professor Leesa Wheelahan, Dr Nick Fredman and Dr Mary Leahy from the LH Martin Institute at the University of Melbourne, Dr Gavin Moodie from RMIT University, Dr Emmaline Bexley and Associate Professor Sophie Arkoudis from the Centre for the Study of Higher Education at the University of Melbourne.
- Strand 3: Pathways in the labour market – Serena Yu, Professor John Buchanan, Tanya Bretherton and Hanna Schutz from the Workplace Research Centre at the University of Sydney.

This final report has benefited from the input of all project members, and in particular from Gavin Moodie and John Polesel, both of whom edited the whole draft.

Finally, we wish to dedicate this work to the memory of Professor Jack Keating, who made a key contribution early in the project, but whose body of work has helped to inform our work in many ways.

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Executive summary

Australians are more educated than ever before, despite reports of skill shortages occurring with monotonous regularity. The mismatches between the skills held, required and used is particularly acute for vocational education and training (VET) graduates. In 2013 only a third were in jobs directly associated with their qualification. As Tom Karmel and colleagues (Karmel, Mlotkowski & Awodeyi 2008) have provocatively asked: just how vocational is VET?

It has long been recognised that the connections between qualifications and work are complex. Jobs created in the future will be different from those of the past. It is this reality that has long informed interest in generalist qualifications such as the arts, business and science in the higher education sector. In vocational education and training it informs the endless interest in ‘generic’ or ‘employability’ skills.

Is the answer to Australia’s skills paradox more ‘generalist’ degrees and more ‘generic’ or ‘employable skills’ in VET qualifications? How realistic is this solution? Take ‘problem-solving’ skills for example. Such skills are not acquired or applied in the abstract. Handling an infant’s tantrum is very different from extinguishing a fire on an oil rig. The irony is that seemingly ‘general skills’ often require understanding the specific context for each situation – not so much the specific requirements of a particular job but rather a range of identifiable practices or other contexts relevant to the domain.

The key idea explored in this report is that there is, potentially, another level or dimension of skill that currently receives no policy support – something between the ‘generalist’ qualifications of secondary and higher education and the job-specific competencies currently delivered by the VET system. Specifically, we have tested whether a notion of intermediate specialisation, what we call ‘vocations’ and ‘vocational streams’ can provide a more useful reference point for understanding and shaping the evolution of qualifications and skills in the future.

This is a difficult topic to study. We have done so by adopting a two-stage process. First, we have explored how different types of higher education and VET qualifications are currently connected to each other and to work. This process highlighted that many of the assumptions about pathways within education and between education and work are formal in the extreme and often bear little relation to reality. This disconnect arises from policy frameworks that do not engage well with labour market realities. Given that the problem is systemic and not administrative in nature, we explored whether better connections could be achieved if a modern notion of vocation was used as a reference point for shaping the evolution of jobs and qualifications. This constituted the second stage of our project and involved a close analysis of the problems and possibilities in agriculture; community services and health care; the electrical trades and engineering; and financial services. In particular, we explored how, if at all, broader notions such as ‘rural operations’, ‘care work’, ‘engineering work’ and ‘finance work’ could, potentially, underpin the development of individuals, equipping them with deeper capabilities for adapting more rapidly to changing circumstance than is currently the case.

Guiding concepts

The following conceptual framework guided the analysis for this project.

Qualifications

Qualifications serve three broad purposes (Gallacher, Ingram & Reeve 2012):

- to provide entry to or progression *in the labour market*
- to move to higher-level studies *within education*
- to contribute to social inclusion and social mobility *in society*.

Qualifications are fundamental for, but not synonymous with, workforce development. Workforce development strategies emerge from the division of labour, the deployment of skills, and opportunities to develop new knowledge and skills (Brockmann, Clarke & Winch 2011). Qualifications are embedded in different types of ‘transition systems’ – tracked or untracked – that mediate the strength or weakness of institutional links between education and the labour market (Raffe 2008).

Skills ecosystems

Skills ecosystems refer to the interdependencies of institutions and enterprises within industries or regions that generate knowledge and skill requirements for work and demand for labour. They account for the differences between regions and industries in nations in the way skill is developed and deployed (Buchanan et al. 2001).

The capabilities approach, vocations and vocational streams

Capabilities shape the way individuals live their lives and exercise choice and autonomy (Nussbaum 2000; Sen 1993). In this project the focus is on the development of individuals’ work-related capabilities. Similar to ‘generic skills’, these are not developed in the abstract; rather, they are developed in ways that help individuals to become productive in particular contexts. How education and work function to build (or limit) individuals’ productive capabilities is the core concern of this project. Given the problems noted above, this project explored whether the notions of ‘vocation’ and ‘vocational streams’ could provide a more effective basis for potentially structuring the development of human capability in education and in the labour market. A *vocation* is a domain of *practice* performed by humans as productive beings at work. It encompasses the knowledge, skills and attributes they are required to use at work. A vocation emerges from fields of practice that share commonalities in knowledge and skills (for example, the commonalities between aged care and disability care are part of the broader vocation of ‘care work’). *Vocational streams* refer to the *structure of occupations* and the way they are linked. Consisting of linked occupations that share common practices, knowledge, skills and attributes, they allow individuals to move vertically by specialising within a broad field of practice, or laterally, into related occupations. Qualifications that prepare people for the labour market using vocations and vocational streams equip individuals for broad rather than narrow fields of practice.

The guiding conceptual thread of this study is that qualifications are only one aspect of workforce development; workforce development also includes broader strategies that develop capabilities and involve the deployment of skills in the workplace, career pathways and the organisation of work.

Findings

Overall findings

The labour market profoundly structures individuals' educational trajectories, including their transitions from VET in Schools and flows within, and outcomes from, tertiary education. The connections are, however, complex and often non-linear. Current VET qualifications are based on competency-based training, which assumes a direct link between qualifications and jobs: individuals are trained for specific workplace tasks, and VET qualifications codify this, with Karmel, Mlotkowski and Awodeyi (2008) having established that the reality is very different. Assuming a direct linear connection exacerbates skills mismatches because narrowly focused qualifications and training are the result. This project found that vocational streams could, potentially, provide a better frame of reference for shaping the evolution of qualifications and jobs. The development of such streams would provide graduates, especially VET graduates, with more transferable skills, giving them the capacity to better adapt to changing labour market circumstances. This in turn would ease the difficulty faced by organisations when sourcing the labour they need as business circumstances change.

VET in Schools

Currently VET in Schools does not provide students with good-quality transitions to the labour market, post-school VET or higher education. This occurs because the low level of VET in Schools qualifications (that is, certificates I and II) are of limited worth both in the labour market and for progression to higher-level studies. The research into pathways from VET in Schools proposes changes to ensure its primary purpose is linking students to a post-school VET pathway or to skilled apprenticeships. In addition, it is proposed that vocational education be more firmly embedded in the school curriculum more generally and incorporate meaningful workplace learning opportunities for all students.

VET-to-higher education pathways

The actual educational trajectories of students are very different from those mapped out in formal VET-to-higher education pathways policies. While all qualifications serve three purposes (as outlined above), how they do so varies according to the labour market context. Four broad qualification types were identified. They vary in how the qualifications are linked to each other and to the labour market.

- *Type 1 qualifications* have strong links between qualifications within the same field of education but weak links to occupations that are mostly unregulated; these are exemplified by business studies.
- *Type 2 qualifications* have strong links between qualifications within the same field of education, strong links to occupations and strong occupational pathways; these are exemplified by nursing.
- *Type 3 qualifications* have weak links between qualifications within the same field of education, strong links to occupations but weak occupational pathways; these are exemplified by the electrical trades and electrical engineering.
- *Type 4 qualifications* have weak links between qualifications within the same field of education and weak links to occupations; these are exemplified by the pure disciplines or the liberal arts and sciences.

This suggests that a more differentiated approach to developing pathways is needed: each type of qualification would emphasise their three purposes in different ways, depending on their relationship to the labour market and whether the qualifications were used as a signal or screen in that field.

Pathways in the labour market

The empirical work on how people move between jobs found little correspondence between the career paths mapped out in instruments such as modern awards, and the actual career trajectories of individuals. Instead, it found deep segmentation in flows of labour, which differed in form between the four sectors studied: agriculture, care work, engineering and finance. The research found that the potential for notions of ‘vocation’ and ‘vocational streams’ to provide better guidance for the development of human capability varied greatly between the four sectors. It identified that two conditions are needed if vocational streams are to help overcome the deep segmentation in these sectors. First, there need to be commonalities in the practices, knowledge, skills and personal attributes shared by practitioners across related occupations. Second, the social partners (employers, unions, professional, occupational and accrediting bodies, educational institutions and government) need to be prepared to collaborate on the development of pathways between such related occupations.

The extent to which these conditions exist varies between industries. The researchers paid particular attention to the fact that structured internal and occupational labour markets are not as prevalent as they once were. They proposed ‘vocational labour markets’ as a potential solution to problems in career structures in external labour markets. A vocational labour market is defined as the demand for and supply of related occupations, those that share common underpinning knowledge, skills and practices. The researchers argued that, since vocational labour markets would result in the provision of higher levels of transferable skills than would otherwise be the case, they have the characteristic of a public good. However, without government support – regulatory as well as financial – individuals and employers are unlikely to invest in the development and maintenance of such arrangements.

Implications for policy

The recommendations in this report have short-, medium- and long-term objectives for policy. This strategic approach allows progress to be made while at the same time providing a framework for marshalling social consensus among the social partners, along with the resources needed to sustain deeper changes over time. The short-term recommendations are (a) to build sustainable models of VET in Schools; and (b) to develop a more differentiated approach to the creation of educational pathways within and between VET and higher education, the aim being to reflect the way qualifications and pathways are used in the labour market. The medium-term objective is to renovate VET qualifications to produce ‘adaptive capacities’ for work. The longer-term objective is to improve the relationship between education and work by supporting the development of what we call vocational pathways (or streams) using the notion of ‘vocational development’. Change at this level will, necessarily, take considerable time. Reform within particular domains can, however, commence sooner, especially where the communities of trust necessary for successful reform already exist.

Introduction

This is the final report of a three-year program funded by the National Centre for Vocational Education Research (NCVER) entitled *Vocations: the link between post-compulsory education and the labour market*. The project's starting point was that discontinuities and gaps exist in both educational and occupational pathways in the labour market, and that the links between qualifications and jobs are very weak. This is despite government efforts over many years to introduce policies and structures to support educational pathways that result in: better links between jobs and qualifications; better occupational outcomes; and improved social outcomes for individuals.

Given the 'loose fit' between qualifications and jobs, and the barriers to progression in education and occupations, our research investigated whether education pathways, labour market pathways, and the links between the two could be improved if they were based on a modern notion of vocation, whereby students are prepared for a 'vocational stream' rather than for a narrowly defined occupation or particular job. A 'vocation' refers to practice – what people do in jobs, and the knowledge, skills and attributes they are required to use. A vocation is based on a continuum of knowledge and skill, in which work, vocational education, and higher education are linked, and is premised on the capacity to accrue knowledge and skills in a coherent, cumulative fashion (Buchanan et al. 2009, p.29). Vocational streams refer to the structure of occupations and the way they are linked horizontally in related occupations at the same level, and vertically in specialist or more senior occupations. A vocational stream links the occupations that share common practices, knowledge, skills and personal attributes, thereby allowing individuals to *specialise within the field of practice* or *move laterally into related occupations*. Vocational streams have the potential to support vocations that underpin practice in broad fields.

The qualifications that prepare people for the labour market using vocations and vocational streams are preparing individuals for broad rather than narrow fields of practice. Vocational streams could also be a framework in the labour market to shape the demand for labour, qualifications and skills; for example, by encouraging the social partners (employers, unions, professional and occupational bodies, and governments) to collaborate to shape occupational pathways, to build links between occupations and to articulate demand for qualifications.

The interest in vocations and vocational streams is not merely derived from a practical concern to develop individuals with greater 'adaptive capacity' to enable them to navigate rapidly changing circumstances. The research has also drawn on and contributed to the capabilities approach to social science research and policy development. The capabilities approach was developed by the economist and Nobel Laureate Amartya Sen (2009) and the philosopher Martha Nussbaum (2000). It is increasingly used by governments and international agencies to identify the individual, social and economic resources that are needed to support individual wellbeing, social inclusion and individuals' capacities to make choices about their lives, how they wish to live, and the work they engage in (Henry 2009). The capabilities approach focuses on what people are able to 'be and do' and the necessary resources and social arrangements required to achieve this (Nussbaum 2000, 2011; Sen 1999b, 2009). We are using and extending the capabilities approach to devise a model of

education and workforce development that prepares individuals for a rewarding working life rather than for specific jobs. The approach focuses on developing the person in the context of their occupation and what they need to be able to do to exercise complex judgments at work now and in the future. This is in contrast to a focus on workplace tasks and roles that have been defined for them or are based on existing or past practices.

The project was led by the LH Martin Institute and included researchers from the Centre for the Study of Higher Education and the Melbourne Graduate School of Education at the University of Melbourne, RMIT University, and the Workplace Research Centre at the University of Sydney. It comprised three strands: Strand 1 researched students' transitions from VET in Schools to the labour market and post-school educational destinations. Strand 2 researched educational pathways from VET to higher education, pathways from lower-level to higher-level VET qualifications and graduates' labour market outcomes from 'mid-level' qualifications, which it defined as diplomas, advanced diplomas and associate degrees. Strand 3 researched segmentation within the labour market, the nature of labour market pathways, the potential for vocational streams in different industries and the conditions needed to support the development of vocational streams.

The project's key focus and methods each year are broadly outlined in appendix A. Appendix B lists, according to strand, all the reports from the project. This report concludes the project and provides an integrated analysis of the relationship between qualifications and the labour market, how links between the two can be improved, how educational and occupational progression and social mobility can be improved, and the implications for policy.

The next chapter outlines the project's conceptual framework for understanding the links between qualifications and the labour market, links between educational and occupational pathways, and suggestions on how these could be improved. As our research progressed a conceptual model for the research question emerged and continued to be refined. The model is used in this report to interpret the findings, facilitate discussion and identify implications for policy. However, it is also a key outcome of the research because it provides a framework that researchers, educational institutions, industry and the social partners, and policy-makers can use to explore these links in the future. The third chapter outlines the overall findings from the project to present an integrated analysis of the nature of educational and occupational pathways and the links between them, while the final chapter considers the implications for policy. The findings have short-, medium- and long-term objectives for policy.



Linking qualifications and the labour market – a new conceptual approach

This chapter explores problems with skill development and skill mismatches, in the process explaining the conceptual analysis that emerged over the life of the project as the research and consultations progressed. The conceptual framework developed for this project has three components:

- It identifies the role and purpose of qualifications in the twenty-first century, distinguishes between qualifications and workforce development strategies, and identifies the nature of the relationships between education and the labour market and the kinds of transitions that are made possible as a consequence of these relationships.
- It distinguishes between different ‘skills ecosystems’.
- It uses the concepts of vocations, vocational streams and the capabilities approach as the basis for a new approach to guiding the evolution of qualifications and workforce development strategies in the future.

The ‘skills problem’ (or the paradox of abundant skills co-existing with skill shortages)

The nature of the ‘skills problem’ in Australia is quite complex. While there are reports of skill shortages and surpluses in particular industries, reflecting the waxing and waning of those industries in the economy (for example, the demand for engineers in the resources industry is no longer as acute as it was a few years ago), at the same time there are widespread reports of skills mismatches. Many individuals with mid- to high-level qualifications find that their skills are underused in the workplace, while others find that they need higher-level skills to do their job (Mavromaras, McGuinness & Fok 2010; Ryan & Sinning 2011). This is particularly a problem for those in middle-level qualifications: the group most likely to say that their skills are underused in work are those with diplomas and advanced diplomas (Skills Australia 2009, pp.8–9). However, notwithstanding problems of skills mismatches, the Australian Workforce and Productivity Agency (2013, p.10), in forecasting Australia’s future labour market needs, has recently noted that:

Australian governments will need to support the achievement of a minimum annual growth of 3 per cent in tertiary enrolments. This demand for qualifications is driven by the increasing size of the labour market, changing employment composition, retirements, skills deepening and skills broadening.

The Australian Workforce and Productivity Agency (2013, p.10) explains that growth will be required, especially in high-level qualifications. A conceptual framework is needed to explain the apparent paradox of high levels of skills mismatches on the one hand, and the need for increased numbers of qualifications (particularly higher-level qualifications) on the other, since current policy approaches have not been able to resolve these dilemmas.

The traditional policy response to the ‘skills problem’ has been to focus on the ‘supply side’ of qualifications, which refers to the nature of qualifications, their links to occupations, and the extent to which they facilitate pathways. This led to the introduction of competency-based training models of curriculum in vocational education and training in the late 1980s and the first competency-based ‘training package’ in 1997 (Industry Skills Councils 2007). The purpose of training packages was to specify the ‘skills and knowledge an experienced person needs to perform effectively in the workplace’ (Industry Skills Councils 2007, p.3). Competency-based qualifications consist of units of competency, which describe specific workplace requirements, tasks or roles and the knowledge and skills needed to perform those roles. It was envisaged that this would result in a ‘better fit’ between VET qualifications and the workplace, and that they would put industry in the ‘driving seat’ by ensuring that industry skills councils developed training packages with input from employers and unions (Industry Skills Councils 2007). The aim of the policy was to directly align qualifications with the tasks, skills and roles required in specific jobs.

Another key element of policy was the establishment of the Australian Qualifications Framework (AQF) in 1995, which was revised in 2011, to underpin a national system of quality-assured qualifications in each sector, and to promote educational pathways between qualifications, and between education and work. Unlike training packages, which are specific to the VET sector (although they are used in VET in Schools), the AQF covers qualifications in all formal sectors of education: senior school certificates, VET qualifications, and higher education qualifications. Each sector’s qualifications are accredited by their respective sectoral bodies using the principles, levels of achievement and qualification descriptors in the AQF. Broadly speaking, the purposes of qualifications frameworks are to:

- improve the efficiency and effectiveness of education by encouraging pathways that include appropriate credit transfer so that individuals don’t have to repeat learning they have already done, thus decreasing their costs and the costs to government
- improve the links between qualifications and the labour market by specifying the level and nature of learning outcomes at each level and in this way make outcomes ‘visible’
- support social mobility and social inclusion by facilitating educational and occupational progression (Buchanan et al. 2010).

Yet, in Australia, despite more than two decades of reform and investment by government, the links between qualifications and jobs remain very weak, in both higher education and vocational education. There are tighter links between qualifications in regulated occupations, where it usually takes a considerable time to train and where the professional and occupational bodies have had a high level of input into qualifications’ curriculum and assessment, as well as the qualifications of the teaching staff. However, most of the workforce is unregulated and the links between qualifications and occupations are much looser. In higher education, some 55.8% of bachelor degree graduates in 2012 claimed that they were in jobs in which their degree was a formal requirement, while a further 19.7% of graduates said their degree was important in their job. This was much higher for regulated occupations (for example, 95.1% in medicine, 87.9% in initial nursing qualifications, 76% in civil engineering etc.) and much lower in non-regulated occupations (for example, 32.3% in business studies, 29% in social sciences, 44% in life sciences etc.) (Graduate Careers Australia 2013, supplementary tables, table T 25). In vocational education, 32.9% of

graduates in 2013 said they were in the occupation associated with their qualification, while a further 34.4% who were in a different occupation said their qualification was relevant to their job (NCVER 2013, table 14). There is similar variation between regulated and unregulated occupations; for example, some 56.6% of graduates from a qualification in a trade occupation were working in that occupation, compared with 12% of clerical and administrative workers.¹

It is not clear how increasing the number of graduates from higher-level qualifications will result in a better fit between qualifications and occupations or solve problems with the skills mismatches that are endemic in the Australian workforce. Arguably, while this is a problem for all sectors of education, it is a greater problem for vocational education because qualifications are directly aligned to the workplace requirements for tasks and roles in specific occupations, and yet graduates are not working in those occupations (Karmel, Mlotkowski & Awodeyi 2008).

Improving the connections between qualifications and the labour market requires us to rethink both components and explore the way they mutually structure each other. This has been the focus of this three-year project. It is clear from a growing body of research in Australia (Buchanan et al. 2009) and overseas (Keep 2012a; Powell, Bernhard & Graf 2012) that the structure of the labour market, the nature of jobs, and the way in which skill is deployed at work are fundamental to improving connections between qualifications and jobs, but also to improving the effectiveness of the way skills are used at work. The Australian Workforce and Productivity Agency (2013) explains that, while fundamental, qualifications are only one aspect of broader workforce development strategies. A strategy that seeks to improve links between education and work will need to focus on both.

A conception of the role, purpose and limitations of qualifications

The project's conceptual model of the role, purpose and limitations of qualifications emerged over the life of the project. There are three components in our conception of qualifications: first, the role and purpose of qualifications; second, the difference between qualifications and workforce development strategies; and third, an understanding of the way qualifications are embedded in different types of 'transition systems'; that is, those systems that shape the way qualifications mediate the transition to the labour market.

The purpose of qualifications

Broadly speaking, qualifications serve three purposes (Gallacher, Ingram & Reeve 2012), and lifelong learning policies are predicated on the effective fulfilment of these purposes:

- *In the labour market*, qualifications help to guide entry into the workforce and movement to higher occupational levels once employed.

¹ Each sector measures the link between qualifications and jobs differently. The Graduate Careers Council (GCA) looks at higher education graduates in narrow fields of education, whereas NCVER looks at graduates by occupation. Each asks graduates a different question: GCA asks graduates if their qualification was a formal requirement for their job, whereas NCVER asks graduates if they are in a job associated with their qualification. While there is room for broad interpretation in the question asked of higher education graduates, it is nonetheless a question about a 'tighter' link between qualifications and jobs than that asked in the NCVER student outcomes survey.

- *In the education system*, qualifications help to guide progress to higher-level studies. All qualifications need to provide students with the knowledge and skills they need to study at a higher level in their field.
- *In society*, qualifications contribute to social inclusion by supporting social mobility in education and the labour market and by contributing to a more tolerant and inclusive society. All qualifications should have as one of their objectives supporting students from disadvantaged backgrounds to enter higher-level studies to enable occupational and social mobility.

All qualifications need to fulfil all three purposes, although the emphasis on each purpose may vary. Moreover, qualifications can be evaluated by the extent to which they serve these purposes, and Strand 2 used this framework to evaluate mid-level qualifications in its industry case studies. For example, Strand 2 found that mid-level qualifications in nursing fulfilled all three purposes of qualifications: graduates obtained jobs in nursing; they undertook higher-level studies in nursing; and the qualification provided a very good pathway for students from low socioeconomic backgrounds. In contrast, mid-level qualifications in financial services facilitated entry to higher-level studies in the management and commerce field of education, but led to jobs in different occupational fields, and were not effective in supporting social inclusion and social mobility for students from low socioeconomic backgrounds.

There are implications for curriculum if qualifications are to serve these three purposes. Qualifications must reflect the changing nature of work, which includes the requirement to use higher-level and more abstract knowledge as the basis of occupational progression and the need to help students to contribute to their family, community and society since these enable effective contributions at work. These implications are included in the later discussion of vocational streams and the capabilities approach.

The difference between qualifications and workforce development

Identifying the three purposes of qualifications is the starting point to exploring the relationship between qualifications and workforce development – they are related but they are not the same and it is important not to collapse the distinction between the two. Qualifications are not identical to specific occupations. While qualifications may prepare individuals for a number of different jobs and occupations, they play a broader role beyond preparing individuals to work in a specific occupation and beyond providing employers with skilled workers. Brockmann et al. (2011, p.5) argue:

It is important to distinguish between qualifications and occupations. Qualifications are awarded on the basis of particular knowledge or know-how and may or may not be congruent with occupations, which are associated with a particular division of labour within a sector of any given society.

Moreover, qualifications are only one aspect of workforce development; workforce development must encompass a broader range of strategies. Employers cannot rely merely on qualifications to deliver the skills they need of their workers. While qualifications are intrinsic to workforce development, workforce development is much broader and incorporates formal and informal learning, the way labour and skill are deployed at work,

the division of labour within the workforce, and plans for the way the workforce should be structured in the future as the demands for knowledge and skills change.

Transition systems: educational and employment logics

While qualifications play similar roles in all countries, the way they do so varies as a consequence of their differing social, economic and political institutional frameworks. Our conceptual model drew on a range of different literatures that explored the relationship between education and the labour market. One strand of literature was the ‘varieties of capitalism’ literature, which distinguishes between different dynamics in the relationship between education and the labour market in ‘liberal market economies’ and ‘coordinated market economies’.² This was supplemented by literature that explored the transitions of young people from initial education into the labour market (Raffe 2008), and different transition points as adults move in and out of the labour market at different points of their lives (Schömann & O’Connell 2003). Transition systems comprise the ‘enduring institutional and structural arrangements’ that mediate the entry of young people into the labour market (Raffe 2008, p.278) and the trajectories of those moving within and in and out of the labour market (Buchanan et al. 2009). Individuals can be at their most vulnerable during these transitions, and social policies (such as access to social benefits, education and training rights etc.) are important in supporting them. Effective transitions can help to support all three purposes of qualifications.

The varieties of capitalism literature argues that different types of countries have different types of transition systems and that these reflect the nature of their social and political institutions, economy and labour market. ‘Liberal market economies’ such as those in Anglophone nations like Australia, New Zealand, the United Kingdom, the United States and Canada use the market to coordinate the economy and match graduates to jobs. In contrast, ‘coordinated market economies’ use mainly non-market mechanisms to coordinate the economy, based on social partnerships between employers, unions and the state, and these mechanisms are used to match graduates with jobs (Hall & Soskice 2001). Each results in ‘different systems of labour market regulation, of education and training, and of corporate governance’ (Culpepper 2001, p.4). In liberal market economies, education itself operates as a market and the relationship between employers and educational institutions is mostly indirect and mediated through the market, where graduates compete with each other for jobs. In contrast, in coordinated market economies dense networks of social partnerships exist between employers, educational institutions and governing bodies. This is exemplified in Germany’s famous and highly regarded ‘dual system’ of apprenticeships, whereby apprentices spend part of their time in the educational system and in the workplace.

According to ‘transition system’ researchers, the structure of senior secondary and post-school education reflects these differences in coordinated and liberal market economies. The Northern European coordinated market economies have tracked vocational and higher education systems: graduates go to different occupational destinations and draw on

2 We are drawing from the ‘varieties of capitalism’ literature here, but other related approaches also offer similar insights, such as Ashton, Sung and Turbin’s (2000) comparative framework, which identifies four models of skill formation. However, all these approaches are similar, in that they posit a relationship between the structure of the economy, labour market and system of education, while they may have somewhat (but not wildly diverging) views on the broader social institutional frameworks, and the role of the state.

different knowledge and skills in each. Streaming between vocational and academic education starts in secondary school. The Anglophone liberal market economies tend to have unified secondary school systems which emphasise academic or general education and tertiary education systems which emphasise pathways between qualifications and sectors and to and from vocational and academic education.

The differing social arrangements of the two types of market economy lead to different relationships between education and the labour market in each. Iannelli and Raffe (2007) argue that the relationship between education and the labour market in liberal market economies is characterised by an ‘educational logic’, with weak institutional links between work and education. Coordinated market economies on the other hand are characterised by an ‘employment logic’, with strong institutional links between work and education.

In systems with an employment logic, upper-level vocational education (usually upper-level vocational secondary education) has strong connections with work, but weak connections with higher education, except in some cases where higher education is in the same vocational area (and arguably, where strong occupational pathways exist within that field, see Moodie et al. 2015). Vocational qualifications are highly valued and, as a consequence, the difference between higher education and VET cannot be reduced to simple status hierarchies. Iannelli and Raffe (2007, p.50) explain that young people have systematic access to employers and recruitment networks, and employers have more direct knowledge of the students and their qualifications.

In contrast, transition systems where the educational logic is dominant have weaker links between education and work. In these systems VET is – as a matter of form – less differentiated from academic education, and there are stronger formal connections to tertiary education. Iannelli and Raffe (2007, p.51) say that in these systems vocational education:

functions more straightforwardly as a part of the education system, and its relationship with academic upper-secondary education is defined more by its lower status than by its stronger orientation to employment. Employers select applicants with the greatest potential rather than those with vocational skills: potential is indicated by the level of study and attainment in education, and vocational qualifications may signal a low educational level.

In other words, as employers do not have systematic and deep connections with educational institutions or students, they discriminate between competing applicants by using qualifications to screen prospective employees for potential, and the higher the qualification, putatively the greater the potential. This helps to account for the relatively low status of vocational education in Anglophone liberal market economies, whereas the dense network of relationships between employers and educational institutions *and* the highly valued occupations associated with VET qualifications helps to account for the higher status of VET in Northern European countries. Employers in these countries know VET students, their teachers and the institutions in which they teach. There is a well-developed and institutionalised division of labour between educational institutions and the workplace, and long-standing social partnerships that broker the division of labour and the obligations and responsibilities of each partner.

The relative status of vocational education in Anglophone liberal market economies and in Northern European economies also reflects in each the different status of the occupations on which VET focuses. In Anglophone countries VET prepares students for occupations that are of lower status than those that require higher education qualifications. In contrast, while there are differences in status between occupations requiring VET and higher education qualifications in Northern Europe, occupations requiring VET qualifications are still highly regarded and based on a notion of occupation which is legally defined, and has rights and obligations associated with it (Clarke & Winch 2007). However, while the Northern European systems work well for entry-level VET, there are less well-developed systems for adult and continuing vocational education, and for VET conducted outside the dual system of apprenticeships (while most VET takes place through apprenticeships, not all of it does and some is primarily institutionally based) (CEDEFOP 2011).

There is an important caveat in this analysis and this is that the nature of the ‘logic’ should not be confused with curriculum. In Northern European countries, the relationship between education and work may be based on a strong employment logic, but the curriculum is broad-ranging and is based on holistic and broad notions of preparation for a career and an occupation, not specific jobs. This reflects the expansive understanding of what an occupation is in these countries (Clarke & Winch 2007). In contrast, the predominant relationship between education and work in Anglophone countries may be based on an educational logic, but VET is predicated on specific training for specific workplace tasks, roles and requirements, and not on broad notions of occupation, and this is reflected in the much narrower competency-based curriculum (Wheelahan & Moodie 2011). The nature of skill is understood in narrower terms, which is, as Clarke and Winch (2006, p.261) explain, regarded as an individual attribute or property associated with tasks and jobs rather than on broader occupations and is focused on physical or manual mastery or ability (observable performance), in which the knowledge base of practice is de-emphasised. Consequently, ‘preparation for work’ is based on a much narrower curriculum.

Skills ecosystems

Raffe (2008) argues that, while helpful, analyses based on transition systems can overly homogenise the relationship between education and the labour market in nations, and not reflect the complexity of the transition system and the broader social and institutional factors that shape it or the differences that may exist within nations. The skills ecosystems approach helps to identify diversity *within* nations and between regions and industries (Buchanan et al. 2001). This is why regarding employment and educational logics as tendencies rather than iron-clad logics is more helpful in understanding the links between education and the labour market. Different skills ecosystems have different approaches to the development of skill, the deployment of labour, and the relationships between social institutions. Buchanan et al. (2001, p.21) define skills ecosystems as ‘clusters of high, intermediate or low-level competencies in a particular region or industry shaped by interlocking networks of firms, markets and institutions’.

The skills ecosystems approach shows that, while the relationship between the education system and labour market within a nation overall may be dominated by an employment or educational logic, there may be pockets where different logics predominate. For example, while an ‘education’ logic tends to dominate in countries like the United Kingdom and

Australia, in some parts of these countries' labour markets (such as nursing and engineering) an 'employment' logic can prevail. Such labour market pockets are relatively small and survive despite, and not because of, the prevailing tendency structuring education–work transitions in these countries.

In Australia, this helps us to see that although the VET system overall is of low status and based on an educational logic, there are still fields of practice where an employment logic prevails, with dense relationships between VET and the workplace, such as in the apprenticeships for the skilled trades, which are also highly valued. It also helps us to understand the diverse types of relationships that exist between different fields of practice in VET and higher education and the labour market. Arguably, where the relationship is characterised by an educational logic and where graduates compete with each other in the market for unregulated occupations, employers use qualifications to screen prospective employees for general capability. While graduates may still require broadly relevant knowledge, skills and attributes, they do not necessarily require *one* designated qualification, and a wide range of qualifications may be appropriate. In this instance, employers use the level of the qualification and its broad relevance as a screen for suitable applicants, rather than require specific qualifications.

In contrast, the relationship between many of the regulated occupations and education is characterised by an employment logic and requires extensive placement in the workplace as part of the training program. Qualifications are developed with high levels of input from the profession or occupation, and there are strong connections between workplaces and educational institutions. Here qualifications are used to signal to employers that graduates have well-defined and well-understood knowledge and skills, which are valued in the workplace. In the next chapter, the report on the findings of the project, we will link this analysis to an analysis of different types of labour markets: occupational, internal and external labour markets.

The skills ecosystems approach also allows us to see that the nature of skill formation and the logic between education and the labour market should be the starting point of analyses on the potential for vocational streams and on the nature of occupations and careers, as well as for identifying educational and occupational progression within vocational streams. This approach makes it clear that vocational streams will differ and require different strategies for building capability. Rather than a one-size-fits-all approach to qualifications and curriculum, what we outline here would support a more differentiated approach. Vocations, vocational streams and the capabilities may provide a framework to support a system that reflects the relationship between qualifications and the labour market within different fields of education and skills ecosystems, while at the same time supporting educational and occupational progression. This requires rethinking the design of qualifications, the links between qualifications and occupations, and how we group occupations.

Vocations, vocational streams and the capabilities approach

Vocations refer to the nature of practice, that is, what people do in occupations and the knowledge, skills and attributes they need to work in those fields. Vocational streams refer to the structure of occupations and the way they are linked horizontally and vertically in related occupations in which common practices and with similar requirements for

knowledge, skills and attributes are shared. Vocational streams can be used to link qualifications that prepare individuals for similar fields of practice (for example, by grouping together qualifications that prepare individuals for care work occupations). Vocational streams can also be used as a framework in the labour market to shape the demand for labour, qualifications and skills by encouraging the social partners (employers, unions, professional and occupational bodies, and governments) to collaborate to shape occupational pathways, build links between occupations and articulate demand for qualifications. Vocational streams foster identification with the field of practice rather than with a specific employer, enterprise, job or occupation. Preparing students for and fostering identification with a broad field of practice rather than for specific jobs may lead to better connections between qualifications and the labour market because students are prepared for a broader range of occupations.

Preparing students for a broader range of occupations has implications for curriculum. Rather than focusing on specific workplace tasks and roles and the knowledge and skills that underpin these tasks and roles, a broader approach would focus instead on ensuring that students have the broad-ranging knowledge, skills and attributes they need for a range of related occupations. This project used the capabilities approach to consider the conceptual basis of curriculum and qualifications and to support an argument for a model of education that prepares individuals to work in a career rather than specific jobs. The capabilities approach was developed by the economist and Nobel Laureate Amartya Sen (1993, 1999a, 2009) and the philosopher Martha Nussbaum (2000, 2011). It is increasingly used by governments and international agencies to identify the social, economic and individual resources that are needed to support individual wellbeing, social inclusion and individuals' capacities to make choices about their lives, how they wish to live, and the work they engage in (Henry 2009; United Nations Educational Scientific and Cultural Organization 2014).

We have adopted the term 'productive capabilities' when applying the capabilities approach to an improvement of the connections between qualifications and vocational streams to indicate that we are focusing on preparing the individual for a broad field of practice, rather than an abstract notion of capabilities. Productive capabilities focuses on the broad-ranging knowledge, skills and attributes that individuals need for a number of occupations within an industry and which enable them to study at higher levels within their industry. The productive capabilities approach focuses on developing the person in the context of their vocational stream, as well as developing their capacity to make complex judgments at work. This includes preparing them for future tasks and actions, rather than focusing on currently defined workplace tasks and roles based on existing or past practices. This approach helps individuals to develop 'adaptive capacities'. These are the capacities they need to respond to changes in work and in society and they prepare graduates for what they need to be able to do in a range of related occupations and in circumstances that cannot necessarily be predicted with any certainty.

Productive capabilities are different from generic skills, employability skills or graduate attributes because they are not 'general' or 'generic'. In the capabilities approach, the focus is on the development of the individual and on work, and consequently individuals need access to the knowledge, skills and capabilities required for work in their vocational stream. While there will be some commonalities, the nature of the knowledge, skills and capabilities differs between vocational streams. For example, while there are some overlaps, someone who chooses to work in care work in health and community services

requires different capabilities from those who work in agriculture, the finance industry or the electrical trades/engineering.

Productive capabilities link individuals, education and work by identifying the individual, social, economic and cultural resources necessary for individuals to develop as autonomous, innovative and creative workers within broad vocational streams. This is illustrated in figure 1, which shows the relationship between individual, social, economic, cultural and technological resources; individuals with capabilities; and careers on the one hand, and how they interact with vocational streams; occupations; and jobs, on the other.

Figure 1 The capabilities approach, labour supply, labour demand and labour market dynamics

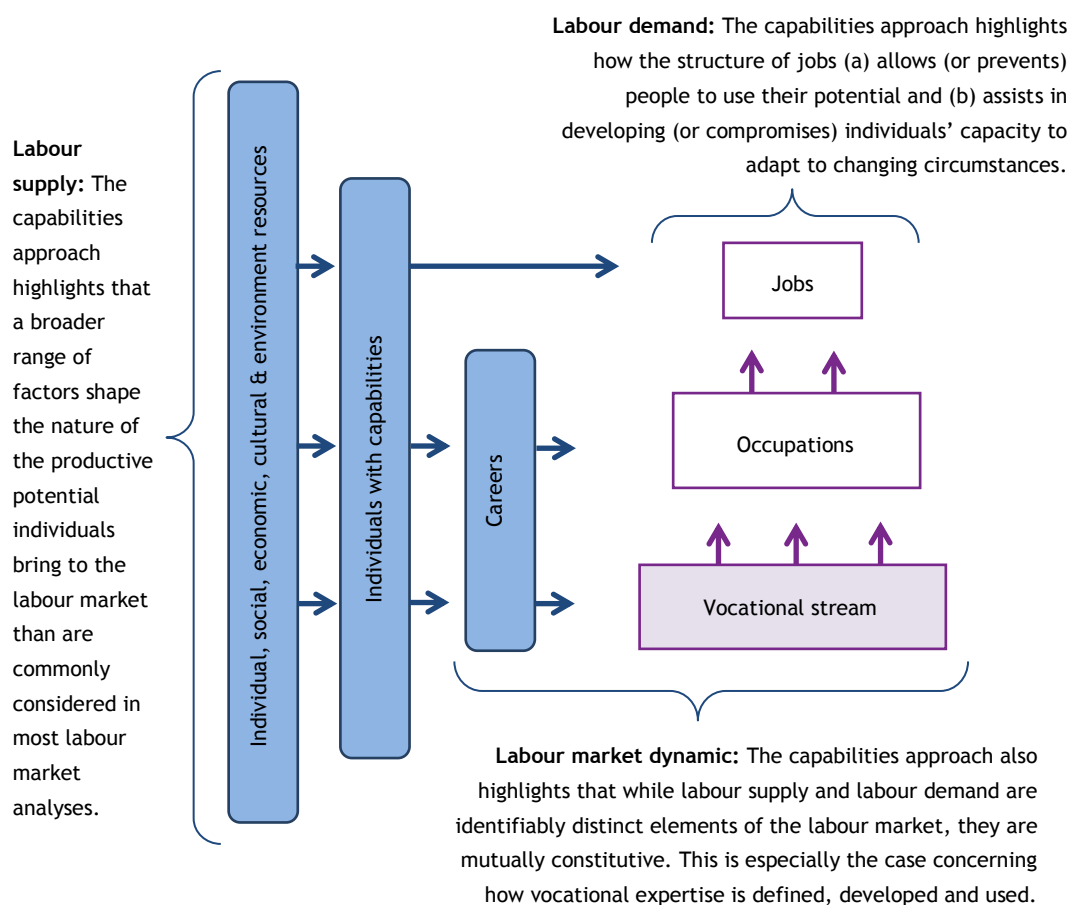


Figure 1 also shows that individuals' successful participation in work does not depend just on the nature of their qualifications. The capabilities approach demonstrates that it also depends on broader economic and social arrangements such as supportive and sustainable housing, transport and access to childcare and employment. Also, education cannot compensate for work arrangements that are not conducive to developing and promoting skilful creative workers who can exercise judgment in the workplace. While education may help students to develop capabilities, these capabilities may not be able to be realised in workplaces that resist change and which provide few opportunities for discretionary learning or for the development of autonomous practice. This shows that labour market development strategies can never be just focused on education and qualifications.

However, it is within the purview of education to ensure that individuals have the knowledge, skills and attributes they need for work and for their successful participation in society, even though it cannot guarantee these other aspects of labour force development strategies. Individuals' successful participation in society is a precondition for being effective workers; they need to be able to participate in their occupational and professional bodies, in their communities and in debates in society. Moreover, the capacity to be skilful at work emerges from broader knowledge, skills and attributes. For example, individuals need to have language, literacy and mathematical skills to engage in and progress in study and work. While the focus of education must necessarily be on the broad field of practice for which students are being prepared, education should also contribute to and benefit from helping students to develop the building blocks of these broader capabilities. A key finding from this project is that qualifications may do this in different ways, depending on their relationship with the structures of the labour market.

Productive capabilities thus involve a combination of work resources, work arrangements and worker knowledge, skills and attributes as well as broader social arrangements conducive to productive work. The attributes needed by workers depend on the resources and arrangements of their work. As Corbel et al. (2014) note, productive capabilities are not independent of work, but neither are they so embedded in a particular workplace that they are of marginal relevance to other workplaces. Productive capabilities are located in and concentrate on the level of vocational stream; that is, a level not as dismembered as a unit of competence and not as tightly or exclusively defined as most professions and trades.

A productive capabilities approach would start with the vocational stream and not specific workplace requirements. It would develop individuals in three domains and these, rather than specific units of competency, would be the starting point of curriculum and qualifications (Wheelahan & Moodie 2011):

- *The knowledge base of practice*: this includes the theoretical knowledge needed for the field of practice, but also for higher-level study within the occupation.
- *The technical base of practice*: this includes technical and procedural knowledge, industry skills, or the ability to perform particular roles and tasks that transcend particular workplaces.
- *The attributes the person needs for that occupation or profession*: this includes attributes such as ethical practice, but also effective communication skills, the capacity to work autonomously and in teams, creativity, information management and so forth. While these are sometimes described as generic, they are understood differently in different fields of practice and need to be developed within the context of specific disciplines and vocations. For example, while 'problem-solving' may be taught in qualifications preparing care workers and those preparing workers in a laboratory, the focus will be completely different. While both may be called problem-solving, solving a problem with a two-year-old child in a childcare centre is fundamentally different from solving a problem in a laboratory. Problem-solving and any other 'generic' skill requires domain-specific knowledge for its realisation.

And, to anticipate the project's findings, which are discussed in the next chapter, effective preparation of individuals for broad vocational streams entails students learning:

- *about* their broad occupational field so that they learn about the range of occupations within their field, its development and trajectory, and its relationship to other broad fields, debates and controversies, and ethical concerns
- *for* their broad field vocational stream, which includes the knowledge and technical basis of practice
- *in* the workplace to learn about the nature of work in that broad vocational stream and to develop the specific skills that are required for different entry points into occupations within that stream.

Conclusion

The project team used the conceptual framework outlined in this chapter to design our methods and to analyse our findings. The conceptual framework was refined and elaborated in the process, particularly through identifying the three purposes of qualifications and expanding our understanding of the relationship between qualifications and workforce development strategies. In particular, the conceptual framework enabled us to understand the differences observed between industries and fields of education in the way in which qualifications were used and to understand how educational and occupational progression differed between industries and fields of education.

This chapter has established that, while qualifications are intrinsic to workforce development, they are not synonymous with workforce development. Qualifications play multiple roles, including as a mechanism to enter or progress in the labour market, to enter higher-level studies, and to support social inclusion and social mobility. Moreover, workforce development strategies that rely principally on qualifications to provide a skilled workforce are too narrow. Workforce development must encompass a wide range of strategies that seek to develop capabilities and skills and focus on the deployment of labour and skill in the workplace, career pathways and the organisation of work. The relationship between education and work in Anglophone systems is based on an educational logic overall, and this is reflected in the loose relationship between qualifications and occupations in the labour market. Qualifications are mainly used to screen prospective employees, except in regulated occupations, where the relationship between occupations and the labour market is based on an employment logic and where the professional and occupational bodies have had input into the design of qualifications and specify in broad terms what entrants must know and be able to do. The skills ecosystem approach provides us with the tools to understand differences between industries, and to differentiate between vocational streams. Vocational streams and productive capabilities provide a framework for vertical and horizontal occupational progression; this is achieved through linking related occupations by focusing on the broad knowledge, skills and attributes individuals need for a career rather than on those required for specific jobs. This approach fosters identification with a career or broad field or practice rather than with a specific job or workplace.

The model we have developed emphasises differentiated approaches to qualifications, pathways and workforce development. It is not advocating or assuming that it would be desirable to import the Northern European models of skill development to Australia. The social, economic and industrial conditions in Anglophone countries are different from those of Northern Europe, and the nature of partnerships between the social partners is different.

Rather, the model is premised on understanding how demand for labour and skill is articulated in different industries, and developing appropriate strategies in response. Some industries are dominated by an employment logic, while others are dominated by an educational logic. This is reflected in the nature of employment outcomes and the types of pathways students undertake. This is explored in the next chapter.

This chapter³ focuses on the project's findings in three broad areas: the nature and purpose of VET in Schools; the nature of educational pathways and their relationship to the labour market; and the potential for vocational streams in the labour market. The final chapter discusses the policy implications arising from these findings.

A key finding from the project is that the structures of the labour market profoundly determine educational pathways, including the transitions from VET in Schools, and pathways within and outcomes from tertiary education. We are not positing a simple linear relationship between the structures of the labour market and pathways. Indeed, competency-based training is based on an idealised notion of a direct link between qualifications and jobs, and as we have seen this does not occur because most graduates are not working in occupations directly associated with their qualification. Assuming a direct linear connection exacerbates rather than diminishes skills mismatches: it results in narrowly focused qualifications and training. Rather, the structures of the labour market *condition and help to shape* educational pathways and shape graduates' labour market outcomes. A more nuanced understanding of the complexities of the structures of the labour market will reveal weaknesses, gaps and discontinuities in people's occupational trajectories within different industries and provide insights into how graduates are able to use qualifications to access or progress in those industries. This provides the basis for considering the potential for vocational streams to provide graduates with more options and for considering the types of qualifications needed to achieve this.

Entry to vocations: building the foundations for successful transitions

VET in Schools programs contribute to the senior secondary certificates of education delivered in schools, TAFE (technical and further education) institutes and other education providers. They use nationally endorsed training packages and embed competency-based qualifications or components of qualifications in senior school certificates. Students complete or gain credit towards a nationally recognised VET qualification while undertaking their senior school certificate. Strand 1 found great diversity in how VET is structured in the senior school certificates and in models of delivery within and across state systems. However, despite differences, stakeholders consistently perceived VET in Schools as a key retention mechanism for students disengaged from or not being catered for through the mainstream academic curriculum.

The key finding of Strand 1 is that current models of VET in Schools do not provide students with strong transitions to the labour market or to traditional trades apprenticeships, post-school VET or higher education programs. A major reason for this is the nature of the labour market: good jobs with career structures require post-school qualifications from either VET or higher education. VET in Schools graduates achieve similar labour market outcomes to those of other Year 12 graduates who go straight into the workplace, largely in jobs that are

Labour market structures condition and help to shape educational pathways and the labour market outcomes of graduates.

Current VET in Schools models do not provide strong transitions to the labour market, traditional apprenticeships, post-school VET or higher education.

³ This chapter was co-authored with Kira Clarke (Entry to vocations – Strand 1), Gavin Moodie (Towards a new approach to mid-level qualifications – Strand 2) and Serena Yu (Creating vocational streams – Strand 3).

The purpose of VET in Schools should be to provide foundational preparation for entry to mid-level qualifications and employment-based learning such as apprenticeships.

poorly paid, low-skilled, casual, part-time and without security or a career structure (Clarke & Polesel 2013). VET in Schools does not provide strong pathways to post-school VET or higher education for two reasons: firstly, because the basic level of most VET in Schools programs (certificates I and II) does not support a transition to skilled work or to higher-level studies (Stanwick 2005; North, Ferrier & Long 2010); and secondly, because the ‘education logic’ within which the VET programs are delivered neither meets the broader workplace requirements nor provides the academic foundation for higher education studies. The limited access to meaningful, institutionalised and embedded access to structured workplace learning in VET in Schools also limits its efficacy in supporting pathways to apprenticeships as well as good outcomes in the labour market. The competency-based curriculum focuses on narrowly defined workplace roles and job-specific skills, which limits the potential for students’ further learning and career growth. VET in Schools is delivered as discrete senior secondary school subjects (in the same way that English or geography are separate subjects) and this does not support the development of a coherent program of related studies.

There is a disconnection between the scale and scope of delivery of VET in Schools, the purposes it is designed to achieve, which include transition to the labour market, and the actual outcomes that are achieved. Yet more than 90% of schools deliver VET in Schools programs or provide some access to vocational education (Nguyen 2010). A key challenge for all stakeholders in senior secondary education is how to develop and provide high-quality and authentic workplace and career exploration as an embedded and fundamental part of the secondary school curriculum. These challenges necessitate a reconceptualisation of the purpose of VET in Schools.

The key conclusion reached by Strand 1 is that VET in Schools should be developed (and promoted) as a pathway to higher-level vocational studies post-school (which includes apprenticeships in high-skilled traditional trades) rather than as a job-preparation program. This is an important and necessary shift, one that reflects the reality of the labour market, which is that jobs that do not require post-school qualifications are declining. Strand 1 proposed that the explicit purpose of vocational education in secondary education be redefined as foundational preparation for entry to mid-level qualifications and to employment-based learning such as apprenticeships. A model such as this would contribute to the development of successful learners and build human capability for the labour market (Ministerial Council on Education, Employment, Training and Youth Affairs 2008).

In proposing this, Strand 1 is arguing for a broader notion of vocational preparation, one which moves beyond existing competency-based models to ensure that students focus on learning in three domains: first, *learning about the industry* they wish to enter (for example, the nature of occupations within the industry, controversies and dilemmas in the industry, and the history and trajectory of the industry); second, *learning for their future occupations* (such as mathematics for manufacturing occupations, or psychology for care occupations); and third, *learning in their industry* (meaningful work placements). Strand 1 proposed a structure of delivery that locates VET in Schools options within a structured and coherent program of studies, rather than existing as isolated VET subjects offered alongside the mainstream or academic subject offerings. This proposed structural change called for consideration of a purpose-built school vocational education curriculum, but one not based on a training package. Strand 1 suggested vocational streams be identified and incorporated in the senior school curriculum, so that students are encouraged and advised to study

combinations of ‘themed’ subjects that are related to their proposed vocational field of practice (one jurisdiction is developing guidelines that specify themed programs of study). They also suggest that English and mathematics be mandated within the curriculum as foundation knowledge which students will need in their post-school studies. This ensures a coherent and structured curriculum, designed with clear pathways in mind. Such an approach, if adopted in Australian systems, would result in more explicit links between senior secondary school certificates and higher-level vocational education. Finally, Strand 1 also highlighted the need for opportunities for younger students, those in Years 9 and 10, to engage in vocational learning, thereby enabling coherent career exploration and career education. This will provide them with the knowledge they need to make meaningful choices when choosing their senior school subjects.

Incorporating vocational streams into senior school curriculum will enable students to study ‘themed’ subjects related to their proposed vocational field of practice.

Towards a new approach to pathways

Educational institutions focus on developing linear pathways between lower- and higher-level qualifications within the same field of education. However, while many students use these pathways, others construct different pathways, those that relate to the kinds of occupations they are seeking. Strand 2 found that just over half of those students who undertake a second tertiary education qualification change their field of education when they do so, but that this varies by field of education and the links between the field of education and the labour market (Fredman 2012; Wheelahan, Moodie & Buchanan 2012). The structure of occupations (regulated/unregulated) and the way qualifications are used (as signals/screens) shapes the patterns of student movement within fields of education and between the VET and higher education sectors.⁴ So too does the existence or absence of occupational pathways that link lower- and higher-skilled jobs. That is, the structure of occupations helps to shape and structure educational pathways.

This accounts for the ‘weak link’ between mid-level qualifications such as diplomas, advanced diplomas and associate degrees and occupational pathways. While these qualifications are the key transition qualification between VET and higher education, they have looser links to the labour market than do VET qualifications overall, even though they lead to better wages than do lower-level qualifications (Karmel & Fieger 2012). Overall, while approximately 33% of VET graduates work in the occupation associated with their qualification, only about 25% of VET graduates from diploma and higher-level VET qualifications do so (Moodie et al. 2015). However, this varies by field of education, and the links are stronger where mid-level qualifications are associated with regulated occupations, and weaker in unregulated occupations. In general, the relatively weak links between diplomas and occupations compared with VET qualifications overall reflects the relative absence of mid-level occupations, which can act as a ladder from lower- to higher-level qualifications and jobs in the labour market.

Vocational streams would be a useful framework for structuring study to prepare graduates for a broad range of related occupations.

The structure of occupations and the way qualifications are used also shapes the way in which qualifications achieve their three purposes: to support entry to or progression in the labour market; to undertake higher-level studies; and, to support social inclusion and social

⁴ See the discussion in the previous chapter, especially sections on transition systems and skills ecosystems, regulated and unregulated occupations and the way qualifications are used as signals and screens in the labour market.

Four types of differing qualifications have been identified, based on how they interact with other qualifications and the labour market.

mobility. Strand 2 identified four broad types of qualifications, which are characterised by how different qualifications are linked to each other and the labour market.

- *Weak links to occupations and strong educational pathways within the same field of education:* few students work in jobs linked to their qualification, but many students study a subsequent qualification in their field because they need a higher-level qualification to get a good job (for example, business). Qualifications are used as a screen for the broad knowledge and skills needed for the job.
- *Strong links to occupations, strong occupational pathways and strong educational pathways within the same field of education:* most students work in jobs linked to their qualification, and there are strong occupational pathways so many students study a subsequent qualification in their field (for example, nursing). Qualifications are often regulated and are used to signal the specific knowledge and skills required for that field.
- *Strong links to occupations, weak occupational pathways and weak educational pathways within the same field of education:* most students work in jobs linked to their qualification, and qualifications are often regulated (for example, engineering), but there isn't a strong occupational pathway (for example, few electricians become engineers) and if students undertake a second qualification, it is often in a different field. Qualifications are used as signals.
- *Weak links to occupations and weak educational pathways within the same field of education:* few students work in jobs linked to their qualification, and when students undertake a second qualification, it is often in different, more vocationally applied fields (for example, science or humanities). Pathways from VET to higher education are particularly weak, because the pure disciplines are not offered in the VET sector. Qualifications are used as screens.

There is a relative absence of mid-level occupations, which can act as a ladder from lower- to higher-level qualifications and jobs in the labour market.

The differences in types of pathways and labour market outcomes suggest a more differentiated approach to the nature of qualifications and curriculum, to reflect the broad relationship between qualifications and the labour market in each field. All qualification types and pathways have the three purposes of qualifications in common, but they vary in the emphasis they place on each. Qualifications that are used as signals and tied to regulated occupations emphasise labour market requirements, whereas qualifications that are used as screens in unregulated occupations emphasise further study. Both types of qualifications support social inclusion, but one would do so in regulated occupations, whereas the other would do so in unregulated occupations. All qualifications seek to develop 'productive capabilities' in vocational streams, but the way they would do so and the emphasis in each would differ, depending on the links between the qualifications and the labour market in each domain. Vocational streams would provide a useful framework for structuring programs of study to prepare graduates for a broad range of related occupations in which common practices, and knowledge, skills and attributes are shared. As with the discussion in the previous section on VET in Schools, the curriculum would support students to learn *about* their industry, *for* their occupational field and *in* their industry, which would entail a move away from competency-based training models of curriculum, which focus on specific workplace tasks and roles rather than on broad occupational fields, towards a broader, more developmental approach such as the capabilities approach.

Creating vocational streams

The empirical work on how people move between jobs found little correspondence between the career paths mapped out in instruments like modern awards and the actual career trajectories of individuals. Instead, it found deep segmentation in flows of labour, which differed in form between the four sectors studied: agriculture, care work, engineering and finance. The research found that the potential for notions of ‘vocation’ and ‘vocational streams’ to provide a better guidance for the development of human capability varied greatly between the four sectors. There are two ways of thinking about vocational streams. The first, as is used in the previous section on the nature of educational pathways, is to structure educational programs and qualifications so that they prepare students for broadly related occupations. The second is as a framework to structure the articulation and demand for labour within the labour market. This is a longer-term approach and one which would support greater coherence between educational pathways and occupational pathways, given that it is the demand for labour that shapes and conditions educational pathways. The discontinuities in educational pathways are reflected in the deep segmentation in the labour market and gaps in occupational pathways, particularly for mid-level occupations. Constructing these occupational ladders is a key challenge for overcoming skills mismatches and for supporting occupational and social mobility. Education cannot on its own solve this problem, because it is a problem in the structure of occupations and the labour market. Vocational streams are one way of addressing this issue.

There are two conditions necessary to support vocational streams. First, there needs to be commonalities in the practices, knowledge, skills and personal attributes shared by practitioners across occupations. Second, the social partners (employers, unions, professional, occupational and accrediting bodies, educational institutions and government) need to be prepared to collaborate on workforce issues and mobilise the resources necessary to support the occupational pathways that link occupations at similar levels and link lower- and higher-skilled occupations. The extent to which these two factors are present varies between industries, as does the potential for vocational streams.

Of our four industry case studies, only the financial services sector exemplified a number of active vocational streams (for example, accounting, financial advice and asset management) that were characterised by strong levels of horizontal and vertical mobility, both within and between firms. The other three industries (engineering, agriculture, and health and community services), were, to a greater or lesser extent, hampered by the absence of one of the two conditions. For example, in engineering, occupational segmentation between lower- and higher-level occupations hampers occupational progression, but employers do not perceive this as a key problem, even though it is perceived as a key problem by peak bodies within the industry in securing the future of the labour supply. There are strong commonalities in the knowledge, skills and practices required in health and community services occupations, particularly in those occupations at similar levels (such as in allied health and care work occupations), but the industries are characterised by strong silos maintained by different professional interest groups and the regulated structure of occupations. For example, occupational ladders exist in occupations such as nursing or medicine, but there are few occupational ladders into nursing or medicine and the legitimate ‘domain of practice’ in each area is contested. The fragmented nature of employment and demand for labour in agriculture and the relative absence of

Vocational streams can help in constructing occupational ladders to overcome skills mismatches and support occupational and social mobility.

social partners (such as professional and occupational bodies, strong employer/employee bodies etc.) who can articulate coherent and coordinated demands for labour also make the emergence of vocational streams difficult.

In exploring the potential for vocational streams, Strand 3 contrasted the differences between internal, occupational and external labour markets. Internal labour markets emerged in the finance industry because the economies of scale in the large financial companies allow them to develop internal progression routes for their staff. Occupational labour markets are mostly in regulated occupations, where entry to and progression in the occupation is regulated by the professional and occupational bodies. External labour markets are where entry to and progression in the labour market is through the competitive market. In external labour markets graduates must ‘second guess’ the labour market and often provide their own continuing education. This is unlike internal labour markets, where employers use the initial qualification to screen potential employees for entry and subsequently provide enterprise-specific training to graduates as part of their employment, and occupational labour markets, where the professional and occupational bodies specify the nature of education and training required.

External labour markets lack the social institutions and occupational structures of both internal and occupational labour markets and these will not emerge spontaneously without explicit policy that seeks to create the conditions for the coherent development of occupational pathways (particularly in mid-level occupations) and the articulation of demand for skills and qualifications. However, there is nothing spontaneous about internal labour markets or occupational labour markets. Both are supported by the social institutions that actively seek to sustain these employment structures. If government seeks the better labour market outcomes of more individuals capable of rapidly adapting to changing economic circumstances, more coherent workforce development and higher skills, then an explicit policy focus on creating the social conditions needed to support these outcomes is required. Governments have gone some way to attempting to do this through the use of industry skills councils, but, as is argued in the next chapter on policy implications, these bodies have a narrow remit and are based on a segmented labour market, which focuses on VET-trained occupations and does not encompass higher education trained occupations.

Introducing vocational labour markets

Strand 3 is proposing the notion of a ‘vocational labour market’ as a way to overcome problems in career structures in external labour markets. A vocational labour market is defined as the demand and supply for related occupations, those that share common underpinning knowledge, skills and practices. A vocational labour market differs from traditional occupational and internal labour markets, yet it carries traits from both. Like an occupational labour market, a vocational labour market would need to be built on an understanding of the capabilities, knowledge, skills and attributes shared across linked occupations; however, the boundaries between occupations would not be anchored in narrowly defined qualifications validated by restricted groups of highly specialised peers. Instead, lateral and vertical mobility between related occupations would be supported. In this way they would deliver the benefits of functionally flexible occupational and internal labour markets (Marsden 1999, pp. 33, 118, 221); that is, a vocational labour market could foster employment security and career progression, not with one employer on a predictable job ladder, but across a range of related occupations.

Strand 3 proposes that vocational labour markets, if supported by strong stakeholder investment and oversight, could produce a coherent approach to skills development, giving greater mobility and economic security to individuals and adaptable workforce capacity to industry. The potential for vocational streams is stronger in settings similar to those of an occupational labour market; that is, where social institutions, such as occupational and professional bodies, accrediting bodies and regulatory and funding bodies, employers and government, exist to facilitate cooperation. In most sectors of the economy, it is unlikely that vocational labour markets will arise spontaneously in the absence of both employer and government support for the development of the social institutions necessary to underpin them. Without government intervention, investment in these workforce capabilities is likely to remain sub-optimal, as neither employers nor employees can be guaranteed a return on their investment. The emergence of coherent occupations and skills will be problematic in the absence of signals to both individuals and employers about the benefits of investing in long-term skills development to support productive capabilities. As with traditional occupational labour markets, an argument must be made for strong institutional intervention – either in the form of effective collaboration (and investment of resources) between stakeholders, including employer and employee groups, and/or with the investment of public infrastructure, including labour standards and funds – to support the development of vocational capabilities (Marsden 1986, pp.235–8).

Conclusion

The labour market shapes educational pathways and the ways by which graduates are able to use their qualifications to enter the labour market. An analysis of how this occurs shows differences within and between industries. Overall, the links between qualifications and the labour market are very loose, except in regulated occupations (Karmel, Mlotkowski, & Awodeyi 2008). Tying qualifications more tightly to jobs will exacerbate and not overcome this problem. This has implications for VET in Schools because there is a mismatch between the types of VET qualifications students undertake as part of their senior school certificate and the conditions in the labour market: for the most part, VET qualifications completed as part of senior school certificates do not lead to good jobs in fields associated with those qualifications. While diplomas and higher-level VET qualifications result in good labour market outcomes overall, they are even more mismatched to occupations than VET qualifications as a whole, and this reflects the relative absence of regulated occupations requiring qualifications at this level, and the labour market segmentation between higher- and lower-level jobs.

Addressing employer concerns about the ‘work readiness’ of new employees and their broader concerns about the mismatch between qualifications and the labour market will not be met with a greater focus on generic skills in the senior school certificates or in tertiary education. Students who are undertaking VET in Schools because they are alienated from a more academically orientated curriculum are likely to be as alienated from a curriculum based on generic skills, which would arguably be little more than a watered-down academic curriculum. VET students who enter tertiary education programs do so in the hope that such programs will help them to realise their aspirations, which may be to get a job in that field, proceed to further study or for personal development (and often all three) (Fredman 2012). And while employers may argue for broader ‘employability skills’ (Ithaca Group 2011), graduates still need the theoretical knowledge that underpins practice in their field, as

solving all but the simplest problems requires expertise and specialist bodies of knowledge (OECD 2010, p.58). Given a sufficient supply of suitably qualified prospective employees with the minimum qualifications that reflect the theoretical knowledge, skills and attributes for occupations at a particular level, employers are able to discriminate between applicants at a more fine-grained level and may do so based on the extent to which they have desirable 'soft' skills (Lauder, Brown & Ashton 2008, pp.28–9), but even in this case, problem-solving in engineering is likely to be quite different from problem-solving in care work.

Vocational streams and the capabilities approach provide a framework for creating better links between qualifications and work by preparing students for a broad field of practice rather than for specific jobs. This approach also provides sufficient flexibility to differentiate between qualifications, emphasise the different purposes of qualifications, and reflect different links between qualifications and the labour market. It is clear that changes would need to be made in both the demand side (the demand for labour by employers) and the supply side (the supply of qualifications by educational institutions), and that undertaking such changes needs to be done differently and on different time scales to reflect differences between skills ecosystems and the extent to which the potential for vocational streams can be realised. The final chapter discusses the changes that need to be made for policy to implement such an approach.



Implications for policy

This chapter outlines the implications for policy and the changes that need to be made if the vocational streams and capabilities approach are adopted to support better links between education and the labour market. If qualifications, pathways and jobs are to be better aligned, changes are needed in both education and the labour market. In apportioning responsibility for mismatches between education and the labour market, most attention has focused on education and educational institutions as insufficiently responsive to the needs of industry (Wheelahan & Moodie 2011). However, there is increasing recognition that the structure of the demand side, the way in which labour is deployed at work, and the nature of workforce development strategies can also contribute to weak connections between education and work (Australian Workforce and Productivity Agency 2013; Buchanan 2006; Buchanan et al. 2009; Keep 2012b).

The previous chapter illustrates the way by which the structures of the labour market help to condition and shape educational pathways; it also explains why attempts to bind qualifications and jobs more tightly will not result in greater alignment between the two. However, implementing vocational streams can help to improve this alignment by broadening the range of occupations that students are prepared for, while at the same time focusing on the knowledge, skills and attributes required for work in that field. In this way, those qualifications being used as screens in unregulated labour markets (which is the great majority of the labour market) will have a stronger connection to their fields of practice. Vocational streams may also expand career opportunities for those in occupational labour markets by contributing to more diverse pathways. A curriculum based on the capabilities approach can also improve the alignment between qualifications and the labour market by focusing on developing the person for a vocational stream and ensuring that they have the knowledge, skills and attributes required for that field of practice.

Implementing both capabilities and vocational streams requires rethinking education and work and will require social partners within vocational streams who are prepared to focus on workforce development strategies; it will also require these social partners to trust in the qualifications used in that field. The most effective and long-lasting way to build vocational streams is by creating clear and widely recognised occupational pathways within broad fields of practice. However, as our research has shown, while educational institutions can support the emergence of new mid-level occupations in industries, the impetus for this has to come from industry, employers and the other social partners (Moodie et al. 2013).

Clearly, implementing this approach will take time, and the approach will differ between different industries because of the differences in relations between the social partners and trust in qualifications, and the extent to which the necessary social institutions exist to create the infrastructure for vocational streams. Moreover, it was also pointed out to us in our research that governments are more willing to reform education and qualifications than they are to reform or intervene in the labour market.

Consequently, the recommendations in this chapter have short-, medium- and long-term objectives for policy. The short-term objectives are to build sustainable models of VET in Schools and to develop a more differentiated approach to developing educational pathways within and between VET and higher education which reflect the way qualifications and

Vocational streams can broaden the range of occupations that students are prepared for, while also focusing on the knowledge, skills and attributes required for work in that field.

Two key challenges of a broader approach of VET in Schools are to provide high-quality and authentic workplace learning experiences and enable access to accurate and timely career advice.

pathways are used in the labour market. The medium-term objectives are to renovate VET qualifications: the aim is to develop qualifications that are based on productive capabilities, which will produce ‘adaptive capacities’ in workers and workplaces. The longer-term objective is to improve the relationship between education and work by supporting the development of occupational pathways from lower- to higher-levels within vocational streams (and/or easier lateral movement within them).

This report is not merely recommending reform of the labour market; rather, the recommendations in this report focus on developing more coherent industry policy. A more coherent policy would more effectively use the existing levers available to government, which are based on industry advisory arrangements that link all the key social partners within a broad industry. This strategic approach allows for progress to be made; at the same time it provides a framework for marshalling social consensus among the social partners and the resources needed to sustain deeper changes over time.

Short-term objective: effective models of VET in Schools

An effective model of VET in Schools would reorient existing practices to focus on pathways to post-school VET or apprenticeships in skilled occupations. This would entail revising the model of curriculum used in certificates I and II so that these levels become industry/occupation exploration or ‘career start’ qualifications for predominant use by young people in schools. Such an approach would recognise the limited currency for these certificates for entry to the labour market, while confirming the desire for models of VET in Schools to be ‘certified’. This approach would also entail ‘programmatic’ or themed approaches to the senior school certificate such that students were given explicit advice on how to ‘package’ their senior school subjects to ensure that they studied allied subjects to deepen their knowledge and skills in their prospective field of practice.

Consideration could also be given to developing ‘guaranteed pathways’ between schools and higher-level VET qualifications in TAFE and other registered training organisations so that students had a ‘safety net’ for their post-school studies and to encourage a curricular focus on students’ post-school destinations. Strand 1 also recommends that mathematics and English be mandated components of VET in Schools studies to ensure that students have the foundation knowledge they need for their post-school study. An effective model of VET in Schools would include opportunities for younger students to undertake vocational studies that would support and inform their career exploration and decision-making before the senior secondary certificate.

In rethinking VET in Schools, the aim is to ensure that students have well-rounded educational programs that encourage them to learn *about* their career options (career exploration); *for* their industry (through thematic programs of study); and *in* their industry (through workplace learning). As part of a broader approach to VET in Schools, the two key challenges will be to develop and provide high-quality and authentic workplace learning experiences and enable access to accurate, relevant and timely vocational career guidance. Developing a new model of VET in Schools requires cross-sectoral collaboration in the design, development and delivery of VET in Schools, strong partnerships with employers and industry bodies, and strong system-level leadership.

Short-term objective: differentiated tertiary education pathways

At present, government policies and institutional practices are premised on developing pathways based on linear connections between qualifications within the same field of education. The analysis undertaken by Strand 2 of different types of qualifications and pathways according to their relationship to the labour market has implications for the way pathways are developed. It suggests a more differentiated approach be implemented, one that takes account of these differences. All qualifications would seek to fulfil the three purposes of qualifications, which are labour market entry or progression; access to higher-level studies; and widening access to tertiary education for disadvantaged students. However, a more differentiated approach would result in qualifications and pathways placing different emphases on these three purposes and implementing them in different ways.

- *Type 1 qualifications: strong links between qualifications in the same field of education and weak links to occupations (exemplified by business)*

Type 1 qualifications would emphasise educational transition and would reflect their role as a screen. Attention would be needed to ensure that they also supported social inclusion (for example, pathways in financial services are currently not a mechanism for social mobility for students from disadvantaged backgrounds) (Moodie et al. 2015). Type 1 qualifications and pathways need to take a broad approach to preparation for work, as well as support students to study at the next higher level within their field.

- *Type 2 qualifications: strong links between qualifications within the field of education and strong links to occupations and strong occupational pathways (exemplified by nursing)*

Type 2 qualifications would emphasise labour market destinations and would reflect their role as a signal. These qualifications and pathways need to be supported by the occupational and licensing bodies and be underpinned by the occupational pathway; educational institutions need to be encouraged to work with these bodies to develop, maintain and sustain the educational pathways needed to support them. An emphasis on educational transition is still important to underpin the occupational pathway.

- *Type 3 qualifications: weak links between qualifications within the field of education and strong links to occupations and weak occupational pathways (exemplified by engineering)*

Type 3 qualifications would emphasise labour market destinations and would reflect their role as a signal. Type 3 educational pathways will remain weak while the occupational pathway remains weak. Long-term policy goals would be to work with the social partners to build occupational pathways. Educational pathways within these fields are still important however in supporting the mobility of those who wish to undertake higher-level studies in that field. Broader educational pathways may be designed to support transition to higher-level studies in related occupations in the industry more broadly, such as project management, and related occupations in leadership, management and administration. These pathways would need to build in educational transition support to ensure articulating students have the underpinning knowledge they need for a new field of education.

A differentiated approach to tertiary education pathways is needed, which means that qualifications will place different emphases on the three purposes of qualifications.

Qualifications should be renovated using vocational streams as a structuring principle and productive capabilities as the basis for curriculum.

- *Type 4 qualifications: weak links between qualifications within the field of education and weak links to occupations (exemplified by the pure disciplines)*

Type 4 qualifications would emphasise educational transition and would reflect their role as a screen. Generally speaking, unless and until VET moves away from offering qualifications that use competency-based training curriculum, whereby qualifications are tied to specific jobs, there will be little or no pressure to develop educational pathways between the sectors in these types of fields. However, there are implications for the development of pathways within higher education, where the pure disciplines are offered, and they are that pathways should include more explicit attention to preparing students to study in different, more occupationally focused, fields of study in subsequent qualifications. This does not imply the introduction of more vocationally specific elements in the degrees in the disciplines; it is rather to ensure that links are made to subsequent qualifications so students have advice and guidance on how to navigate pathways, and that they have the broad-ranging knowledge and skills that allow them to study at the next level. This would support social inclusion. There may be scope for developing pathways from higher education to VET by offering VET-accredited graduate certificates or diplomas, although there are currently many vocationally specific graduate certificates and diplomas in higher education.

Medium-term objective: renovate VET qualifications

A medium-term policy objective would be to renovate VET qualifications using vocational streams as a structuring principle and productive capabilities as the curricular basis of qualifications. While qualifications and pathways can be differentiated into four broad types and policy can support more effective links by differentiating between them, the full realisation of the potential for a differentiated approach would require rethinking the nature and purpose of VET qualifications. Productive capabilities are premised on the development of the person in the broad context of their vocational stream rather than on training them for specific tasks and roles. The starting point is ‘what kind of worker’ is required to support innovative workplaces. The findings from our research and the literature more broadly are that work is changing rapidly: rather than focus on the tasks and roles defined for current practices within work, workers need *adaptive capacities* to adapt to change and emerging practices. Rather than seek to acquire qualifications containing all the skills required for particular workplace tasks and roles, qualifications should be seen instead as one element of broader workforce development strategies. As discussed earlier, productive capabilities are located at the intermediate specialised level, the vocational stream, rather than being embedded in particular workplaces (Corbel et al. 2014).

Qualifications based on productive capabilities and vocational streams would also allow for greater differentiation between skills ecosystems than is currently possible in existing policy frameworks, which insist that all VET qualifications be based on one model – training packages and competency-based training models of curriculum. In those vocational streams where qualifications are used as a *screen*, the emphasis would be on supporting educational transition, as progression in higher-level qualifications is the way by which access to the labour market is mediated. In vocational streams where qualifications are used as a *signal*, the emphasis would be on labour market outcomes, while at the same time ensuring that graduates have the knowledge and skills they need to progress to higher-level studies within

that field, as this is the mechanism through which access to the occupational pathway is mediated. A broader more holistic approach to curriculum at the same time allows for greater differentiation, while vocational streams become the structure for planning pathways, even if vocational streams remain nascent in the labour market.

Workplaces should have a greater role in developing skills and the capabilities of individuals to adapt to changing circumstances.

Long-term objective: vocational development – a better balance between qualifications, workforce development and industry renewal

A key problem at present is that too much is expected of qualifications as a basis for workforce development. Indeed, at their worst, current arrangements assume that boosting the number of qualifications is synonymous with improving workforce development. Key to this project's conceptual framework is the distinction between qualifications and workforce development. The project has demonstrated that qualifications are only one aspect of workforce development; and that qualifications are not only about workforce development because they serve a number of purposes. Effective reform, therefore, requires that similar consideration is given to the nature of work and how workplaces contribute to the development of the workforce as is given to the arrangements associated with the issuing of qualifications. Indeed, less attention needs to be apportioned to devising yet more specific qualifications designed to meet specific 'industry needs'. Aiming to achieve the 'right skills at the right place at the right time' is overly narrow. Instead, more attention needs to be devoted to increasing the role of workplaces in skill development and developing people as well-rounded individuals capable of adapting to rapidly changing circumstances.

Getting a better balance between qualifications and workforce development means clarifying more carefully the outcomes we want to achieve. The project is not advocating yet more 'VET reform', particularly if this involves intensifying current policies that emphasise tight connections between qualifications and jobs. The key challenge is to rework current arrangements and ensure they cohere more effectively for the benefit of individuals and workplaces, both of which need the capacity to adapt to constantly changing circumstances.

On the basis of the research for this project we propose that a useful reference point for strengthening the links between education and work is the notion of improving 'vocational development'. Present policy defines skills for those occupying intermediate skilled roles in the labour market very narrowly and decontextualises them from the broader occupation of which they are a part. While interest in workforce development has increased in recent years and offers the prospect of moving beyond the current narrower approaches to vocational education, workforce development remains vaguely defined and means different things to different people. For some it includes a concern with the role of workplaces in developing the skills. However, often it refers to how the workforce is to be developed to meet industry needs rather than how industry itself can contribute to meeting those needs. In proposing the notion of 'vocational development' as an objective for both educational and labour market policy, it is possible to move beyond current policy approaches, which have not been able to create better connections between qualifications and work, to open up new bases for dialogue and ensure better use is made of the national structures that have been carefully constructed over the last 30 years. These include frameworks like the Australian Qualifications Framework and streamlined and modernised industrial awards,

There needs to be more effective use of current national frameworks, such as the Australian Qualifications Framework and industrial awards. Clarifying the domains of vocational streams will help.

both of which are considerable achievements. The challenge is not further ‘reform’ of these system-defining reference points but rather to ensure best use is to be made of them.

Central to ensuring that better use is made of current frameworks will be clarifying the domains of different vocations, or vocational streams. On a number of occasions we have referred to loose category systems, which refer to domains such as ‘care work’, ‘engineering’, ‘rural operations (including animal and land husbandry)’, ‘logistics’, ‘customer service’ and ‘retail banking’ (for example, Buchanan 2006, pp.15–16). The clarification of these categories needs to be a consultative process, one that includes a wide range of stakeholders. It will also have to occur over an extended period and the categories will evolve over time. Useful starting points could be made, for example, in reviews of training packages, with the aim of reducing the number of qualifications and creating broader qualifications. Complementary work could be undertaken in the regular reviews of modern awards. To date these have primarily focused on employment conditions. There is no reason why these could not also consider the design and operation of the employment categories used to define the foundations of wage structures and specify the reference points for particular labour standards.

The findings from Strand 3 highlighted the importance of communities of trust, consisting of social partners with a common objective, for improving the recognition (and standing) of qualifications and for ensuring they engage with rapidly changing workplace practice. Building such communities needs to be supported by coordinated policy arrangements operating at state and federal levels. Such communities are needed as custodians for a simplified set of qualifications. More importantly, they need to explicitly share in the responsibility of developing people in the capabilities relevant to them. An important task for such communities would be to identify the specific vocational streams – and their underpinning capabilities – relevant to educational and occupational advancement in their domains of coverage and practice. Having identified these, the communities could take on the role of facilitating for their domain the transition from the current approach of competencies to these more coherent and appropriate reference points for qualifications. Having clarified vocations and vocational streams, communities of trust could support and in time oversee:

- revamped and higher-quality VET in Schools arrangements
- rationalisation of VET qualifications, based on a capabilities approach
- the development of loosely defined but more relevant pathways in the education system and the labour market
- ongoing dialogue and coordination between groups representing VET and higher education trained occupations.

This is not to underestimate the challenges involved, and vocational streams in different sectors of the economy (and indeed the occupations within them) will face varying difficulties in building communities of trust and generating catalysts for change. At several stages in this project it was noted that the challenges in building better connections between education and jobs could not be overcome by working within the confines of current ways of doing business. Better vocational development will often only be possible as industries develop new ways of producing products and services. The example of health care is particularly stark on this point (Yu 2015). The division of labour in this sector is finely

tuned and strictly policed by a host of professional regulatory bodies. Reforming qualifications and employment in isolation is unlikely to succeed, as this highlights differences and does not build on common concerns amongst all workers and employers in the sector. If a consideration of such qualifications and employment issues is, however, nested within new interdisciplinary models of care, a different dynamic can be promoted. Another example is provided by Strand 3 in its final report: cross-employer coordination in rural operations in the agricultural sector showed similar connections between new approaches to skills, qualifications and regional development (Yu 2015). These examples demonstrate that vocational streams can be fostered and change enacted incrementally wherever a community of trust forms and vocational development is central to its objectives.

An important start in building communities of trust could be made through a review of current government-funded industry advisory arrangements. These arrangements reflect the segmentation in the labour market between those occupations served by VET and those served by higher education. Eleven industry skills councils are funded by government to develop VET qualifications through national training packages. However, of the 11 industry skills councils boards, only one had one representative of a professional body.⁵ The boards of the industry skills councils primarily comprise employers, employer peak bodies and unions, but not professional bodies. Conversely, there is very little if any representation of bodies representing VET-trained occupations on the boards of the professional bodies. The Australian Workforce and Productivity Agency played a role in raising awareness of these issues and in brokering negotiations to address problems in particular industries (such as in engineering), but the current government abolished the Australian Workforce and Productivity Agency in 2014 and its functions were subsumed into the relevant government department.

A broader conception of vocational development would include the establishment of industry advisory bodies that include representatives of higher education- and VET-trained occupations. One role of these bodies would be the planning of broad workforce development strategies, one component of which would be occupational pathways and qualifications to underpin those pathways. Broader industry advisory bodies, as outlined here, would be one mechanism for beginning the work needed to define broad domains or vocational streams, and to consider approaches relevant to that broad industry for building vocational capacity.

Our final conclusion is that building better links between education and work will assist in moving to more coherent approaches to vocational development. The improved capacity of individuals and workplaces to adapt to changing circumstances is not merely concerned with revitalising education and work: ultimately it has the potential to play an important role in helping with industry and social renewal more generally. Indeed, vocational renewal in complex sectors like health and agriculture will only be possible in the context of greater innovation in these sectors.

To build better links between education and jobs, qualifications and employment need to be reformed together, not in isolation.

A broader conception of vocational development would include the establishment of industry advisory bodies that include representatives of higher education- and VET-trained occupations.

⁵ This was the Innovation and Business Skills Australia (IBSA) Board, which included a representative from the National Insurance Brokers Association. IBSA also has a number of industry-specific advisory committees, and there was a small number of representatives from professional bodies on these. The membership of the boards of the industry skills councils was examined on 27 May 2014. As well as there being almost no members of professional bodies on the boards, women comprised only 24% of board members.

Conclusion

This chapter has outlined a strategic approach to improving the links between education and the labour market by proposing short-, medium- and longer-term policy objectives. The short- and medium-term objectives will require the support and input of the social partners, but can be implemented over time without addressing structural deficiencies in the labour market. This has the potential to result in a better alignment between qualifications and the labour market. Long-term change however will require the problems in the nature of the demand side in the labour market to be addressed and entail broader notions of vocational development. The analytical framework presented in the broader project over the last three years explores what these changes will need to look like and the social partnerships that will be needed to sustain them.



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- Yu, S 2015, *Creating vocational streams: what will it take?*, NCVER, Adelaide.



Appendix A: Key focus and project methods

The vocations project was led by the LH Martin Institute at the University of Melbourne and included partners from the Centre for the Study of Higher Education and the Melbourne Graduate School of Education at the University of Melbourne, RMIT University, and the Workplace Research Centre at the University of Sydney. The research reports and working papers published by NCVET from this project are listed in appendix B.

The project was conducted in three strands: Strand 1 researched students' transitions from VET in Schools to the labour market and post-school educational destinations. This component was undertaken by the Melbourne Graduate School of Education. Strand 2 focused on educational pathways from vocational education and training to higher education, pathways from lower-level to higher-level VET qualifications and graduates' labour market outcomes from 'mid-level' qualifications, which it defined as diplomas, advanced diplomas and associate degrees. Strand 2 was led by the LH Martin Institute and included RMIT University and the Centre for the Study of Higher Education. Strand 3 researched segmentation within the labour market, the nature of labour market pathways, the potential for vocational streams in different industries and the conditions that would be needed to support the development of vocational streams. It was undertaken by the Workplace Research Centre at the University of Sydney.

The project researched four industry case studies each year to create a shared focus between the strands and to provide continuity over the three years of the project. These were: agriculture; the electrical trades/engineering; the finance industry; and health and community services. The three strands used similar methods and processes each year to undertake their research, including mixed methods to explore the multiple sources of data that could provide insights into their research questions. At the end of the first year, the project team synthesised the findings of each strand to develop and elaborate the conceptual framework that was used in the remaining two years of the project and to interpret our findings.

In the first year (2011), each strand researched key transitions within and between education and the labour market to understand the factors that facilitated transitions, and those that contributed to discontinuities and blockages. Strand 1 researched data on participation in and outcomes from VET in Schools, including the socioeconomic profile of students who participate in VET in Schools and the types of labour market and further study outcomes they achieve. Strand 1 mapped the policies for VET in Schools and the way in which VET in Schools was embedded in the structure of senior school certificates in four states.⁶ Strand 2 explored links between students' qualifications and their occupational destinations and researched whether students who complete a first qualification in VET or higher education stay within the same sector of education and/or the same field of education when they undertake a second tertiary education qualification. Strand 3 used nine years of data from the Household, Income and Labour

⁶ In the first year of the project, Strand 1 researched VET in Schools in four states (New South Wales, Queensland, South Australia and Victoria), but they also included Western Australia in years two and three.

Dynamics in Australia (HILDA) longitudinal survey to explore the nature of labour market segmentation and the extent to which there is mobility within the labour market. Each strand also undertook extensive interviews with key actors: Strand 1 interviewed teachers, institutional leaders from schools, registered training organisations and group training companies, occupational and industry bodies and policy and jurisdictional leaders to identify perceptions about VET in Schools. Strand 2 interviewed students in and graduates from VET and higher education institutions and teachers, support staff and managers and leaders from these institutions to understand students' experiences of educational transitions, but also transitions to the workplace. This allowed Strand 2 to explore interviewees' perceptions of the nature of blockages and the factors that facilitated their transitions. Strand 3 used a 'life course' approach to interview workers about their experiences of work and study and key transitions in their lives.

In the second year (2012), each strand developed models or principles for policy that could address these discontinuities and blockages. Each strand produced a discussion paper that it used in consultations with key social actors. Strand 1 held roundtable consultations in five states that included teachers, school leaders, leaders of the different school systems (public, Catholic and independent) in each jurisdiction, industry training bodies, unions and employers. In the second year Strand 2 focused on mid-level qualifications as a key 'transition' qualification to the labour market and higher-level studies. It extended its statistical analyses of students' further study and labour market outcomes and undertook case studies within each industry; these included interviews with professional and occupational bodies with direct involvement in creating or accrediting mid-level qualifications in their field, training managers within companies in the relevant industries and teaching staff in VET and higher education involved in developing or teaching mid-level qualifications (diplomas, advanced diplomas and associate degrees). Strand 2 also held a national conference on mid-level qualifications, which provided an opportunity for them to test their emerging findings more broadly. Strand 3 conducted interviews with individuals from unions, employer groups, professional bodies and occupational bodies, peak educational bodies and educators and government statutory bodies and departments. Strand 3 focused on identifying commonalities in occupations within each of the four industry sectors, and understanding the role of the social partners in supporting these links.

In the final year (2013), each strand researched the broader policy implications of implementing the models and principles they had developed in the previous year, whether these models had support from key social actors or had potential for garnering support in the future, and the changes that would be needed to implement them. Each strand again produced a discussion paper as the basis of its consultations. Strand 1 once again held roundtables in the same five states, and invited new participants as well as previous participants to test the conclusions they had drawn from the second year of the study; the principles they were proposing for sustainable models of VET in Schools; the extent to which there was support for the proposed approach from the key social actors; and the policy changes that would be needed to implement these principles. Strand 2 and 3 coordinated their research in the third year. Strand 3 focused on how networks and relationships between the social partners could facilitate stronger vocational streams and consequently focused on labour market interviewees in consultations (while, however, including one relevant group of educational leaders). The social partner participants included industry, professional and occupational bodies, employer

organisations and unions, and government bodies charged with implementing change in their industry. Strand 2 built on this work to explore the role of qualifications and educational institutions in supporting stronger vocational streams. Strand 2 interviewed employers and training managers in relevant enterprises and unions and institutional leaders and educational leaders in each industry area, and professional and occupational bodies to test the extent to which there was support for a new model of qualifications that differentiated the purposes of qualifications and the way they were used in the labour market in different industries.

The project synthesised emerging findings in two ways. First, the project team met at least twice a year for a day to discuss and consider the findings overall and was in constant contact as a team throughout the three years. Second, the project held an invited symposium at the end of each year, at which each strand reported its findings, and where a discussion was held about the overall implications of the emerging findings. Many attendees had been participants in consultations in one of the three strands, while others were from government agencies and bodies, were educational leaders from schools, VET and higher education, and representatives from industry and occupational bodies. Moreover, many attendees participated in all three invited symposia.



Appendix B: NCVER publications from the Vocations project

This list presents the publications published by NCVER from the Vocations project. In addition to these publications, in most years each strand prepared discussion papers that they used in consultations as part of the research. There are also numerous other publications including newspaper articles, journal articles, conference papers and blogs that the team has published.

Strand 1

Clarke, K & Volkoff, V 2012, *Entry to vocations: current policy trends, barriers and facilitators of quality in VET in Schools*, NCVER, Adelaide.

Clarke, K 2012, *Entry to vocations: the efficacy of VET in Schools*, NCVER, Adelaide.

Clarke, K 2013, *Entry to vocations: strengthening VET in Schools*, NCVER, Adelaide.

Clarke, K 2014, *Entry to vocations: building the foundations for successful transitions*, NCVER, Adelaide.

Strand 2

Fredman, N 2012, *Tertiary student transitions: sectors, fields, impacts of and reasons for study – support document* [to accompany *Missing links: the fragmented relationship between tertiary education and jobs*], NCVER, Adelaide.

Moodie, G 2012, *The role of educational institutions in fostering vocations*, NCVER, Adelaide.

Moodie, G, & Fredman, N 2013, *Student load and employment outcomes attached to mid-level qualifications*, NCVER, Adelaide.

Moodie, G, Fredman, N, Bexley, E, & Wheelahan, L 2013, *Vocational education's variable links to vocations*, NCVER, Adelaide.

Moodie, G, Wheelahan, L, Fredman, N, & Bexley, E 2015, *Towards a new approach to mid-level qualifications*, NCVER, Adelaide.

Wheelahan, L, Fredman, N, Bexley, E, & Moodie, G 2015, *Towards a new approach to mid-level qualifications: case studies – support document*, NCVER, Adelaide.

Wheelahan, L, Leahy, M, Fredman, N, Moodie, G, Arkoudis, S & Bexley, E 2012, *Missing links: the fragmented relationship between tertiary education and jobs*, NCVER, Adelaide.

Strand 3

Yu, S, Bretherton, T & Schutz, H 2012, *Vocational trajectories within the Australian labour market*, NCVER, Adelaide.

Yu, S, Bretherton, T & Schutz, J, & Buchanan, J 2012, *Understanding the nature of vocations today: exploring labour market pathways*, NCVER, Adelaide.

Yu, S, Bretherton, T, & Buchanan, J 2013, *Defining vocational streams: insights from the engineering, finance, agriculture and care sectors*, NCVER, Adelaide.

Yu, S 2015, *Creating vocational streams: What will it take?* NCVER, Adelaide.

Synthesis publications

Wheelahan, L, Moodie, G & Buchanan, J 2012, *Revitalising the vocational in flows of learning and labour*, NCVER, Adelaide.

Wheelahan, L, Buchanan, J & Yu, S 2015, *Linking qualifications and the labour market through capabilities and vocational streams*, NCVER, Adelaide.

NVETR Program funding

The National Vocational Education and Training Research (NVETR) Program is coordinated and managed by NCVER on behalf of the Australian Government and state and territory governments. Funding is provided through the Australian Government Department of Education and Training.

The NVETR Program is based on national research priorities and aims to improve policy and practice in the VET sector. The research effort itself is collaborative and requires strong relationships with the research community in Australia's universities and beyond. NCVER may also involve various stakeholders, including state and territory governments, industry and practitioners, to inform the commissioned research, and use a variety of mechanisms such as project roundtables and forums.

Research grants are awarded to organisations through a competitive process, in which NCVER does not participate. To ensure the quality and relevance of the research, projects are selected using an independent and transparent process and research reports are peer-reviewed.

From 2012 some of the NVETR Program funding was made available for research and policy advice to National Senior Officials of the then Standing Council for Tertiary Education, Skills and Employment (SCOTESE) Principal Committees. They were responsible for determining suitable and relevant research projects aligned to the immediate priority needs in support of the national VET reform agenda.

For further information about the program go to the NCVER Portal
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