



Competence and competency-based training: What the literature says

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EDUCATION RESEARCH

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About the research



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Hugh Guthrie, NCVER

This literature review was commissioned by the National Quality Council as part of a joint initiative with the Council of Australian Governments to examine the framework underpinning the national training system.

It provides an historical account of the development of competency-based (CBT) training in Australia and summarises the issues arising from a number of reviews conducted on elements of the national training system. It also explores the variety of ways in which competence is conceived both in Australia and overseas.

The literature suggests that:

- ✧ competence can be conceptualised in two broad ways. One takes a view that competence is a personal construct, while the other grounds competence in the context of an occupation and even a particular workplace. It suggests that a balance needs to be struck between these two constructs
- ✧ support for CBT and training packages remains strong, but that attention needs to be given to the quality of both delivery and assessment. The literature also suggests that training packages could be better understood and used, and that some refining of the underpinning concepts, processes and products is required
- ✧ the professionalism of vocational education and training teachers and trainers needs to be re-emphasised and enhanced. The literature also suggests that perhaps it is time to revisit the nature and level of training for VET's professional staff.

Tom Karmel
Managing Director, NCVER

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Introduction

Competency-based training (CBT) is at the heart of the vocational education and training (VET) system in Australia, and has been so for a long time. This literature review, commissioned by the joint National Quality Council and Council of Australian Governments Steering Committee investigating VET training products for the 21st century, asked NCVET to address the following key questions:

- ✧ What, in summary, are the origins and introduction of the competency-based training system in Australia?
- ✧ How did the current approach to CBT emerge as the framework in Australia, including its relationship to the United Kingdom's competency model?
- ✧ What, in broad terms, are the different approaches to competency evident in the literature and in practice in other countries, and how do these compare with the Australian model and what are their strengths and weaknesses?
- ✧ What, in summary, are some of the key issues that have emerged from previous reviews and analysis of training packages and related frameworks?

In short, the review presents an historical perspective to current elements of training and to Australian conceptions about competence, CBT and the related VET training products, as a basis to inform future developments in this area.

The material on CBT and its related issues is extensive and much of it dates from the late 1980s and early 1990s when CBT was 'officially' introduced. Some of the issues raised then remain relevant today. Nevertheless, it is also likely that many relevant and informative documents that would have enhanced this review further are unfortunately not in the public domain.

There was renewed interest in CBT following the introduction of training packages in 1996. Shortly after that NCVET commissioned a range of research on the topic, which were published in the late 1990s (Billett et al. 1999; Mulcahy & James 1999; Lowrie, Smith & Hill 1999; Misko 1999). Since then there has been a steady stream of material: some has been from Australia, however, much of the recent material also emanates from Europe and the United Kingdom.

The review is divided into three chapters. The first looks at the origins and introduction of CBT in Australia, including its relationship to the United Kingdom model from which it was derived and other aspects of the National Skills Framework which affect it; for example, training packages, the Australian Qualifications Framework and the Australian Quality Training Framework. The second chapter looks at a range of definitions and conceptions of competence and competency, how these compare with current Australian conceptions, their strengths and weaknesses, and what, if anything, they might offer to any reconceptualised view of competence. The third section contextualises the review based on Council of Australian Governments' objectives and discusses the issues arising from the literature considered in the first two chapters, including a range of reviews and analyses that have been conducted of CBT and of other key planks of vocational education and training. It will attempt to draw these elements together to provide a summary of viewpoints and suggest some of the issues arising from these findings.

CBT's origins and development

Many ascribe the introduction of CBT as following the Australian tripartite mission of 1987 (ACTU/TDC 1987), and the publication of *Industry training in Australia: The need for change* (Dawkins 1989a) and *Improving Australia's training system* (Dawkins 1989b). Nevertheless, CBT had its antecedents in approaches like the CBT-based Instructional Systems Model in use in Victoria and other states and territories. For example, Harris et al. (1985) undertook an early project for the National Centre for Vocational Education Research (NCVER)'s predecessor organisation (the TAFE National Centre for Research and Development), which related to CBT and its use in automotive training at Croydon Park College of TAFE in Adelaide. National VET curricula had been developed using functional analysis techniques since 1981.

In this chapter, CBT is defined and put in its historical context. Next, the key elements that underpin the CBT system, including generic or employability skills, training packages, the Australian Qualification Framework and the Australian Quality Training Framework are described and discussed. Finally, the issues raised in the literature and a variety of reviews about CBT and its implementation are presented.

CBT and its context

Competency-based training has been defined as:

A way of approaching (vocational) training that places primary emphasis on what a person can do as a result of the training (the outcome), and as such represents a shift away from an emphasis on the process involved in the training (the inputs). It is concerned with training to industry specific standards rather than an individual's achievement relative to others in the group. (ACCI 1992)

More recently, NCVER's glossary of VET terms¹ defines CBT as 'training which develops the skills, knowledge and attitudes required to achieve competency standards'.

Various policy and descriptive documents describe CBT as:

- ✧ based on competency standards
- ✧ outcomes and not input or process focused
- ✧ industry involved/led
- ✧ flexibly delivered, involving self-paced approaches where appropriate
- ✧ performance oriented
- ✧ assessed using criterion referenced rather than norm-referenced approaches, and allowing for the recognition of prior learning.

The move to CBT was part of a comprehensive program of reform—the National Training Reform Agenda—which had the improvement of Australia's productivity and international

¹ See <<http://www.ncver.edu.au/resources/glossary.html>>

competitiveness at its heart. VET was seen as having a significant role in enabling this. It was also related to bringing formalised training to occupational areas where none was available. Accordingly, the focus was on introducing (see Harris et al. 1995):

- ✧ competency-based training of high quality
- ✧ more flexible, broadly-based and modular training arrangements
- ✧ national consistency in training standards and certification
- ✧ better articulation of on-the-job and off-the-job training and credit transfer between courses
- ✧ national recognition of competencies, however attained
- ✧ an open training market
- ✧ equitable access to vocational education and training
- ✧ an integrated entry-level training system.

At the core of the reform agenda was the desire to move away from a time-served approach to one based on the attainment of agreed competency standards. It was also about giving industry more say, and was the first major step on the path to today's 'industry-led' VET system. It moved it away from the 'supply', or a provider/educator-driven approach, with training provision largely being determined by what training programs providers wished to run (Misko & Robinson 2000).

In 1990 the National Training Board was established (Harris et al. 1995) to approve standards developed by approved competency standards bodies. Many of these bodies were national industry training advisory bodies, the antecedents of industry skills councils. Ministers set a target of substantial progress towards the implementation of CBT by December 1993. The standards provided the basis for the development, approval and implementation of national VET curricula through the Australian Committee on TAFE Curriculum (later the Australian Committee for Training Curriculum).

The model was strongly based on the functional competency approach in use in the United Kingdom, and based around a system of national vocational qualifications. It was workplace focused and performance-oriented, like its United Kingdom counterpart. Australia, therefore, drew heavily on the United Kingdom experience and literature, and many of the issues raised about CBT and its implementation had parallels. Like its counterpart, the Australian conception has tended to downplay the importance of underpinning knowledge and a holistic view of the 'craft concept' compared with, say, the German and Austrian models of competence.

A survey of CBT uptake conducted in 1994/95, following an earlier study by Thomson et al. in 1990, found that uptake had increased from 13% in 1990 to 29% by 1994, with wide variation in take up and use between states and territories (Smith et al. 1996). Take up and use of CBT and competency standards by companies was also patchy (Allen Consulting Group 1994; Smith et al. 1995).

A powerful summary of the range of emotions surrounding CBT's introduction at that time is provided by Collins (1993, p.11):

... the enthusiastic commitment of the campaigner; the 'no choice' acceptance of the bureaucrat; the 'we can subvert this and get it to work educationally' argument of the educational policy advisor; the cries of pain from those seeing good education being replaced by jargonistic ritual; the exploration of research work that suggests that at least part of the competencies agenda cannot work; and the arguments that the whole current discourse is dangerous because it shifts the balance of power in the wrong direction and threatens crucial educational purposes in a democratic society.

Many found the reforms too much, and felt they were implemented too quickly (Harris et al. 1995).

At the same time CBT enjoyed less success in the higher education and schools sectors, with higher education in particular seeing itself as the guardian of the humanist general education tradition. In 1992 the Australian Vice Chancellor's Committee noted (AVCC 1992, p.3):

While the development of knowledge, skills and understanding is central to the role of universities it is not the responsibility of universities to shape and re-shape programs of study in response only to changes in current professional or workforce needs ... Competencies are necessary but not sufficient outcomes of university education.

Since that time, however, competency standards have been developed and implemented in a range of professional areas through professional associations (Gonczi 2000). Examples include law (Monahan and Olliffe 2001) as well as others such as pharmacy, nursing and engineering. In addition, universities are now also concerned with the development and certification of graduate attributes. The approach to competence and competency-based education and training in higher education is a relevant consideration for possible future reforms in vocational education and training.

In 1994 the Australian National Training Authority (ANTA) became operational, and in 1995 the national training bodies and Australian Committee for Training Curriculum (the body which then oversaw the development of national curricula) amalgamated to form the Standards and Curriculum Council as part of ANTA. In 1996 the council was replaced by ANTA's National Training Framework Committee and then by the National Training Quality Council (Smith & Keating 2003). Its present manifestation is the National Quality Council, with secretariat support provided by TVET Australia. The National Quality Council oversees quality assurance and ensures national consistency in the application of the Australian Quality Training Framework standards for the audit and registration of training providers. In addition it endorses training packages.

Following the roll-out of CBT was the:

- ✧ development and introduction of the key competencies and, later, employability skills
- ✧ introduction of training packages
- ✧ introduction of the Australian Qualifications Framework
- ✧ progressive development and implementation of national quality standards for providers.

Each of these initiatives, and their implications for CBT and competence, will be discussed in turn.

Key competencies and employability skills

Key competencies

The Mayer Committee report (1992) is a major milestone in the establishment of generic skills in Australia. The Committee made many key decisions which continue to impact on educational policy regarding generic skills.

The Mayer Committee defined key competencies as:

... competencies essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that the key competencies are not only essential for participation in work, but are also essential for effective participation in further education and in adult life more generally.

(Mayer Committee 1992, p.7)

The Committee articulated principles that would guide whether proposed specific skills were accepted as key competencies. Proposed skills had to:

- ✧ be essential to preparation for employment

- ✧ be generic to the kinds of work and work organisation emerging in the range of occupations at entry levels within industry rather than occupation- or industry-specific
- ✧ equip individuals to participate effectively in a wide range of social settings, including workplaces and adult life more generally
- ✧ involve the application of knowledge and skill
- ✧ be able to be learned
- ✧ be amenable to credible assessment.

(Mayer Committee 1992, p.12)

During the mid-1990s, considerable effort was expended in implementing the Mayer key competencies in Australian schools and VET programs. However, attention was diverted from the key competencies to other reforms. It was due to Australian industry that attention re-focused on generic skills in the late 1990s. Higher education institutions also began to pay explicit attention to these skills through the documentation and assessment of graduate attributes, although they are quite broadly conceived.

A review of generic skills needed for the new economy (Kearns 2001) examined how sets of key competencies/key skills have developed in Britain, the United States and Australia. It identifies two broad approaches:

- ✧ The United States model involves a broader, more flexible, and more holistic set of generic skills, which include basic skills, personal attributes, values and ethics, learning to learn, as well as workplace competencies.
- ✧ The Anglo/Australian model has resulted in a more narrowly focused and instrumental set of key skills/key competencies which are broadly similar. In both countries, personal attributes and values have been excluded from the identified key competencies.

In 1999, the Australian Industry Group commissioned a report into the training needs of Australia's industries (Allen Consulting Group 1999). The report canvassed the views of 350 companies from the manufacturing, construction and information technology sectors. Among many findings, the report notes that:

... an increasing premium is being placed on generic skills, both 'hard' (notably IT [information technology] skills) and 'soft' (e.g. problem-solving, team skills, willingness and ability to adapt) to be developed prior to recruitment. (Allen Consulting Group 1999, p. v)

The report outlined generic skills that are required by Australian industry to remain globally competitive. They included basic skills such as literacy and numeracy, interpersonal skills such as communication and teamwork, and personal attributes such as the capacity to learn and embrace change.

Australia's employability skills

In 2002, the Australian Chamber of Commerce and Industry and the Business Council of Australia undertook a comprehensive study of the skills commonly required by both new and existing employees to work successfully in organisations. Their methodology included an extensive literature review from Australia and overseas, focus groups and interviews with individuals from small, medium and large enterprises, and a validation exercise involving extensive consultation with companies and employer organisations. They derived a set of key skills which they called 'employability skills'. The report defined employability skills as:

... skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic directions. Employability skills are also sometimes referred to as generic skills, capabilities or key competencies. (ACCI & BCA 2002, p.3)

Employability skills have generally been embedded within competency standards and are not individually certified. As Clayton et al. (2003, p.162) note:

Where generic skills are represented as discrete units of competency or performance criteria, practitioners have little difficulty in teaching and assessing them. When they are embedded in units of competency, they are more of a concern because learner achievement of them must be inferred. Valid inference requires clear guidance, and currently the assessment guidelines within training packages provide inadequate support for practitioners.

While Clayton et al. (2003) report that there have been attempts to certify employability skills, it remains probable that these key elements of competent performance remain largely unreported to employers. Yet surveys of employer views for both university and VET graduates note that major areas of concern remain the lack of appropriate generic or 'soft' skills. Proper certification of these skills and perhaps other employability attributes² will help advise employers in recruitment and other human resource decisions and will benefit employees and learners by giving a more complete and transparent picture of their competence. It is argued that learners will be motivated to acquire skills that are recognised, and employers will gain from knowing exactly what skills their prospective employees have attained (NCVER 2003). However, the major disincentive for the recording, reporting and certifying of generic skills in every provider is that it requires them to have a student management system capable of handling the huge variety of results that would be generated (Clayton et al. 2003). Proper assessment may also require collective decision-making by a range of individuals across a range of units of competence. Certification at the unit of competence level makes this problematic.

The Allen Consulting Group (2006a) investigated the recording and reporting of employability skills in training packages. They recommended integrated assessment of employability skills with descriptive reporting which would be useful to employers (and hence benefit learners) at the unit of competence level supplemented with student portfolios of evidence. This was proposed because it would be relatively simple to implement.

The model endorsed by the National Quality Council in 2006–07 involves the assessment and reporting of employability skills embedded in the individual units of competency in training packages.

NCVER (2003) noted that fostering the development of generic skills needed to be a joint responsibility of teaching institutions, individuals and employers, with the various groups working in partnership where possible. These skills are developed throughout life and fostered in a wide variety of contexts essential for sustained employability. This issue will be explored later when considering the nature of 'competence'.

The report by Allen Consulting Group (2006b) for the Australian Industry Group, notes that industry is looking for high levels of both technical and 'soft' skills. They point out that:

... firms are ... demanding higher levels of skills, frequent updating of skills and excellent 'soft' as well as technical skills. Over 90 per cent look for people who are flexible and adaptive, willing to learn on the job, team workers, technically competent and committed to excellence. All of these attributes will remain important to employers in coming years.

(Allen Consulting Group 2006b, p.viii)

² Although there has been concern about the extent to which they can be learned or properly assessed. The issue is whether, in context, judgements can be made about them that contribute to information about an individual and their competence. This is particularly true if the learning approaches are authentic.

Training packages

A snapshot

Training packages provide national competency-based qualifications. There are currently 81 training packages with around 1 592 qualifications in total. Qualifications in training packages can be a certificate I, II, III, or IV, diploma, advanced diploma, vocational graduate certificate, or vocational graduate diploma recorded on the National Training Information Service. However, not all packages contain all these qualifications.

As a result of a high level review (Schofield & McDonald 2004), training packages are subject to continuous improvement during their formal three-year period of endorsement. This means that, for example, qualifications or units of competency may be added or deleted, subject to National Quality Council approval. Training package developers must ensure each qualification leads to a distinct occupational outcome.

Training packages are made up of these nationally endorsed components:

- ✧ *Units of competency*: which specify the knowledge and skill, and the application of that knowledge and skill to the standard of performance required in the workplace. Units of competency cover a range of functions, relevant to the workplace and are appropriate to an enterprise, industry or cross-industry application.
- ✧ *Qualifications*: which are created by packaging units of competency into meaningful groups to form qualifications in accordance with the Australian Qualifications Framework.
- ✧ *Assessment guidelines*: which provide an industry framework for assessing competency in the specified industry, industry sector, or enterprise.

Training packages are developed and maintained by industry through industry skills councils. Enterprises can develop training packages through the national process but nearly all choose to use a mainstream package. There are only three enterprise packages: Woolworths, Rice Growers and Humanitarian. Training packages are nationally endorsed by the National Quality Council, which is representative of industry, unions, the Australian Government and state and territory governments. Following Council endorsement, Ministers from the Ministerial Council for Vocational and Technical Education then consider agreement to the publication of the endorsed training package on the national register.

Training packages do not prescribe how an individual should be trained. Trainers and supervisors develop learning and assessment strategies—the ‘how’—to support an individual learners’ needs, abilities and circumstances.

Concept and history

Training packages were a major feature of national training arrangements agreed in November 1996. These arrangements were in the context of a partnership between states, territories, the Commonwealth and industry.

Training packages were introduced in concept in 1996 and the first packages were endorsed in 1997. They describe the skills, knowledge and other attributes an experienced person needs to perform effectively in the workplace. Simply, they prescribe the outcome or ‘competency’. They also contain a qualifications framework and assessment guidelines within their endorsed component. They may also contain competencies from other training packages (Smith & Keating 2003). They are developed through the industry skills councils in consultation with industry. Where there is no training package coverage, providers develop accredited courses, which are certified at state/territory level to meet employer or individual needs. Single units of competency enrolments are also possible. One of the objectives in introducing training packages was to simplify and streamline regulation and to regularise arrangements between the states and territories.

In addition to the endorsed components of training packages, there may be a range of materials such as trainer instructions, guides for learners and multimedia ‘toolboxes’ to support their implementation and use. Support materials are not endorsed by the National Quality Council. Training packages are not curricula. The learning and assessment strategies (the ‘how’ of training) are developed by providers and their teachers and trainers based on learner needs, abilities and circumstances. These also take time to develop, implement and refine (and are not without resource and financial cost at provider level as well [TDA 2001]). Some commentators claim that the speed with which industry and governments required the implementation of training programs based on the packages meant that, in the early days of implementation, corners were sometimes cut and (in the worst case) that the new was squeezed into existing frameworks.³ This often led to implementation in name, but not in spirit (ANTA 2002).

The advantages of training packages are seen as the industry focus achieved through direct alignment of competency standards and qualifications; national consistency, portability and recognition; the flexibility they allow in delivery and assessment; and, the increased level of formal training coverage they have brought and their workplace focus (ANTA 2002; Smith & Keating 2003). In addition, the industry skills councils (Industry Skills Councils Forum 2008) claim a range of additional benefits from training packages, particularly in terms of developing and maintaining leading edge skills for industries, and at the enterprise level helping to ensure that Australian industry remains competitive. They point out that training packages also provide an important basis for registration and licensing and regulatory compliance in a number of industries. Training packages have also been used by industries and enterprises for other purposes, including job descriptions for recruitment and classifications, and to define career structures. While there are numerous benefits attributable to training packages, Schofield and McDonald (2004) point out that their title—training package—causes confusion as it implies a purpose of providing training resources.

A qualitative review of the impact of training packages was commissioned by the then National Training Quality Council. This work was summarised by ANTA (2002). Subsequently a major high-level review of training packages was commissioned, and reported progressively in 2003 and 2004 (Schofield & McDonald 2004) which re-affirmed the labour market and educational value of industry-developed statements describing performance expected in the workplace, and of industry-developed, nationally recognised portable qualifications linked to the Australian Qualifications Framework. This work points out that the training package model has the potential, with improvements, to facilitate good labour market and educational outcomes for enterprises, industries, individuals and communities but that changes are needed to the ways in which training packages are conceptualised, developed and implemented.

In addition, a range of views have been offered about training packages, and their advantages and disadvantages and their utility. The following points summarise the issues raised in TDA (2001), ANTA (2002), Smith and Keating (2003), Down (2004) and Schofield and McDonald (2004), who note:

- ✧ the difficulty of defining an industry and consulting comprehensively with it. Hence the representativeness of the standards is open to question
- ✧ training packages work best in structurally stable industries where the skills base is not subject to rapid change.⁴ They tend to look most readily at current practice which makes it difficult to support innovative or leading-edge enterprises

³ This was also the case when competency standards endorsed by the National Training Board underpinned national curricula. However, in practice the process was messy given the pressure to implement standards-based curricula.

⁴ Down (2004) suggests that by the time a training package has been endorsed, it has undergone an extensive period of consultation and development. While this might be said to have assured its validity, this process has not necessarily ensured its timeliness or its comprehensiveness. It is, like all such moderated documentation, a prescription based on past and present needs and does not cater for emerging or future needs. Within industry areas where the rate of change is comparatively slow, this is not problematic, given the facility for customisation. It is only in those areas where changes in work practice are rapid and ongoing or in newly emerging industry areas that this causes significant problems.

- ✧ the need to allow for sufficient customisation to meet the needs of individual employers and individual learners in the packaging rules for qualifications. In some emerging industries training needs may span several packages, but packaging rules may prevent a valid qualification being awarded. This puts pressure on providers to develop accredited courses to meet their client needs⁵, or when they need to address the needs of particular learner groups or accommodate a diversity of learner needs
- ✧ the emphasis on workplace delivery and assessment disadvantages some client groups and individuals, especially those not actively employed in work related to their occupational training. It also assumes that each workplace can provide a rich and varied learning environment that will cover the full spectrum of experiences required by the training package. This may not be the case
- ✧ the need for improved pathways for individual learners, including between schools, VET and higher education, as well as addressing the needs of international students.

In their high-level review, Schofield and McDonald (2004) noted the need to improve the design of training packages, to place more faith in the professionalism of VET practitioners and to focus less on averting risk and more on its mitigation.

Training packages also received significant attention in the recently released Organisation for Economic Cooperation and Development report into the Australian VET system (Hoeckel et al. 2008). They suggest, and this literature review confirms, that there is little public evidence available that the high-level review's recommendations have been comprehensively acted upon. They suggest that radical reform is needed, including a more simplified approach to describing occupational standards. They also suggest adopting a more standardised and nationally-based assessment system.

Issues relating to training packages are summarised by Hoeckel et al. (2008) as follows:

- ✧ The packages have become long and overly complex, and are unable to be adjusted quickly to meet the rapidly changing needs in some industries. Training packages are also designed around certain jobs rather than generic tasks. Therefore, they are not useful for those who want to study and work in a certain area but do not have a particular job in mind.
- ✧ Many of the qualifications in the 81 training packages are underutilised. While the proportion of students taking training package qualifications compared with those taking other accredited courses is increasing, about 80% of all publicly recorded enrolments in 2006 were in just 180 qualifications. Around 70 qualifications were not used at all in 2006. (However, the industry skills councils report that effort is also unrecorded; for example, the use of 366 qualifications from 27 training packages by the four registered training organisations operated by the Department of Defence [Industry Skills Councils Forum 2008]).
- ✧ The lack of standardised national assessments means that there is no standard to ensure that a particular set of skills has in fact been acquired (see the discussion of competence below).

Finally, some suggest that while training packages have been liberating for practitioners, giving them increased freedom to develop their learning system free of prescribed curriculum, others believe that practitioners have had insufficient support to help fulfil this role (ANTA 2002). More professional development support and higher standards of professional requirements, including initial professional preparation and standards well above the Certificate IV in Assessment and Workplace Training, were required. This is exacerbated by a high level of casualisation in the VET workforce (NCVER 2004) and a quality assurance system that was more compliance oriented than supportive of innovative practice (ANTA 2002).

⁵ For example, the Applied Technology Framework project at RMIT University was a curriculum-based initiative designed to meet the needs of post-trade (or equivalent) workers in those industry areas where there is no existing culture of lifelong learning and where technological change is occurring at a faster-than-average pace. In order to recognise the realities of learning through work and from others within a community of practice, the concept is based on an accredited training framework rather than on accredited qualifications (see Down 2004).

Accredited courses

Not all competency-based training is within training packages. Where there is no training package coverage, proponents may develop courses to meet established industry, enterprise, education, legislative or community needs and have those courses accredited by state/territory accrediting bodies. Accredited courses are nationally recognised and their delivery, assessment and certification are covered by the same quality assurance mechanisms as training package qualifications.

Accredited courses are based on nationally endorsed units of competency where these are available. Where these are not available, courses may be based on units of competency developed as part of the course, or on modules. Modules are outcomes-based in that they specify learning outcomes, but are not competency based. Modules may only be used where the course developer can establish to the satisfaction of the course accrediting body that it is not possible to develop appropriate competency standards. In practice, many accredited courses are competency based.

While the number of accredited courses has declined since the introduction of training packages, courses continue to be accredited.⁶ Schofield and McDonald (2004) anticipated a decline in demand for accredited courses as training packages were improved but noted that ‘there will always be some demand for accredited courses and that this should not be seen as a weakness of the training package model per se’. While noting that ‘the provision for accredited courses was not intended to create a dual system of qualifications in VET’, they argue the need for ‘a good balance between course accreditation which complements training packages on the one hand and, on the other, a course accreditation system which can encourage duplication of resources, variability of qualifications and lack of portability of qualifications for individuals’.

The Australian Qualifications Framework

The Australian Qualifications Framework, or AQF, is a unified system of national qualifications in schools, vocational education and training (TAFE institutes and private providers) and the higher education sector. It was introduced Australia-wide in 1995 and was phased in over five years, with full implementation by 2000.

It currently offers levels of qualification spanning the boundaries of the schools, VET and higher education sectors, and from senior secondary certificates of education to doctoral degrees. Schofield and McDonald (2004), in their high-level review of training packages, suggested that a review was also needed of the AQF and the flexibility of its descriptors to take account of both national and international needs, as well as the value of ‘skill sets’. In addition, the increasing blurring of sectoral boundaries—for example, with VET in Schools, dual sector institutions, partnership arrangements between institutions for nested awards running across sectors, and with VET providers offering degrees and the newly introduced vocational graduate certificates and diplomas—means that competence and CBT need to be conceived in such a way that people and organisations can exploit the widest possible range of learning and qualification pathways.

Pring (2004), cited in Priest (2009), notes that these new vocational awards further challenge the ‘traditional’ role of universities in maintaining, producing and transmitting universal and theoretical knowledge, and VET is seen to focus on skills development. Priest also notes the tendency to assess competency as pass/fail whereas higher education assesses at a variety of levels. Wheelahan (2000) also notes this as an impediment to cross sectoral activity.

Priest (2009) draws attention to the issue of embedding the levels of knowledge and skills required and then aligning these with their cognitive requirements in the AQF. This is a challenge faced in judging the relative importance and sophistication of interpersonal skill at one AQF level when

⁶ Data prepared by states and territories and reported to the National Quality Council in December 2008 shows a 35% decline in the total number of accredited courses from 3 773 in December 2004 to 2 444 in December 2007.

practically oriented and technical skills at a high level are accorded the same AQF level. The comparability issues are challenging, and the choice and language of the standards send important messages to those using them, especially to those who develop the learning programs based on them. This can be particularly so in determining essential skills and knowledge. This issue will be picked up in the next chapter.

Finally, Keating (2008) has looked at the relationships and purposes of qualification systems and national qualifications frameworks. He notes that there are three approaches to qualifications framework:

- ✧ a human capital approach that meets occupational and industry needs and whose currency is standards based knowledge and skills (the VET tradition)
- ✧ a cultural approach based around scholarship and subject disciplines (the school and university tradition)
- ✧ an approach that links education, social and economic participation and inclusion, and which has pathways and lifelong learning as its purpose.

This latter position might best be summarised in considering the value of qualifications. As Keating (2008, p.7) says:

This value can be seen as intrinsic or as exchange value. The intrinsic value is the personal benefit and status that a qualification gives to the learner, the platform and motivation it gives for further learning, and the wider social value of an educated citizenry. The exchange value is realised in the employment market and in access to further formal learning. Both intrinsic and exchange value need to have a base in knowledge.

Keating's paper raises the issue of how vocational qualifications are conceived in competence terms; that is, whether they need to embrace broader and more life-long conceptions of competence as well as having an immediate occupational focus. Thus, it suggests the need for a broader view of competence which harmonises the human capital and other views of qualifications and their purposes as much as possible.

His paper raises a range of other issues, in particular how effectively the present AQF is able to reconcile the various traditions of qualifications, given the pressures for greater homogeneity of purpose, changes to occupations and occupation structures (and the changes to skill level through the adoption of new technologies), the mobility of labour, the portability of qualifications and the demand for generic skills. Education is now also a major export industry and the qualifications system needs to ensure the widest possible recognition of Australian qualifications, especially following the development of the European Qualifications Framework. The movement towards a more lifelong learning approach suggests the need to maximise pathway options.

The Australian Quality Training Framework

The Australian Quality Training Framework (AQTF) and the audit processes linked to it focus very much on the way providers meet the requirements of the relevant training package or accredited course by developing them in consultation with industry stakeholders. Providers also need to have the staff, facilities, equipment and training and assessment materials which met the requirements of the training package or accredited course. Their trainers and assessors need have the necessary training and assessment competencies, and also have the relevant vocational competencies to at least the level being delivered or assessed. Finally, their assessment processes need to meet the requirements of the relevant training package or accredited course and any regulatory requirements. Thus, the AQTF links strongly with training packages, accredited courses and their underpinning conceptions of competency.

The move towards a quality assured system began with the establishment of the National Framework for the Recognition of Training in 1992. Prior to this, states' and territories' quality

arrangements were focused more on the accreditation of courses rather than the providers that delivered them.

The Australian Recognition Framework began in 1998 with the intent to quality assure providers and recognise the scope of the products (courses and qualifications) they offered. It was replaced by the AQTF in 2002, which itself was reviewed and revised in 2004, with a substantially revised version then introduced in 2007.

These arrangements are complemented by the recently piloted voluntary Excellence Criteria within the current AQTF which offers providers an opportunity to evaluate and improve their performance through internally focused activities and to apply for formal recognition through an independent external evaluation if they wish. In addition, the Institute for Trades Skills Excellence offers another model where particular provider business units offering training for a specific industry can be recognised through a star rating system. At present, the Institute is focused solely on trade training, but such a model has the potential to improve quality and flexibility in a more focused way; for example, at industry or the training package level, as well as provide potential clients with clear and independent advice on the quality of what particular business units within individual providers do.

A review of the AQTF (KPA Consulting 2004) suggested that it provided a useful set of standards on which to base practice, and could benefit and improve business practices. However, there was concern about the AQTF's prescriptive nature, its process rather than outcomes focus, and the over-reliance on documentary evidence.

Schofield and McDonald (2004) also noted that the AQTF is a necessary but not sufficient means for ensuring good quality teaching, learning and assessment, and that what is needed is an approach which emphasises quality, creativity, professional judgement and growth. This, in turn, is dependent on the extent to which the auditing process for each of these dimensions are applied in each case is fit for the purpose.

Providers argue that, up until now, the regulatory systems in which they work have placed too great an emphasis on compliance and applying 'rules' rather than supporting approaches which support innovation, responsiveness and flexibility. Some providers see themselves as mired in layers of bureaucracy, making it difficult to be the creative, innovative and responsive organisations industry wants. In the battle between compliance and innovation, many providers feel compliance wins (Guthrie 2008). In fact, many private providers do not access government funding at all because there are too many strings attached.

Auditing arrangements for providers and the key performance indicators under which they operate very much dictate the way in which providers do things. The move of the new AQTF away from an 'inputs and process' focus and towards a more 'risk-managed and outcomes-focused' approach is an important step. A challenge in doing this is to make any necessary changes in both the skill sets of auditors and the nature and outcomes of the auditing process to reflect this new focus. The quality and effectiveness of the quality assurance system has always had the potential to profoundly affect the quality of implementation of CBT and its related training packages. The National Quality Council will commission an external evaluation of the implementation of the AQTF in 2009 and its findings and outcomes should be watched with interest.

However, the fundamental underpinning of the CBT approach is the conception of competence and competency. This is considered in the next chapter.

Conceptions of competence

On the surface, competence seems to be a simple concept. However, as this review will show, that simplicity melts away to reveal something which is conceptually far more complex.

For a start, much of the literature argues that competence is a broader concept than the ability to perform workplace tasks. Competency-based training often stresses work performance, and the outcomes of that which are observable, measurable and assessable. But performance is underpinned by the constituents of competence: personally held skills, knowledge and abilities which collectively underpin and enable performance (Schofield & McDonald 2004). Conceptually, therefore, the ‘whole’ is greater than the ‘sum of the parts’ (Harris et al. 2005).

Competence is therefore a ‘fuzzy’ term and the fuzziness reflects the conflation of distinct concepts and usages. If nothing else CBT tries to bridge the gap between education and job requirements, but descriptions of competence may fail to adequately reflect the complexity of ‘competence’ in work performance (Harris et al. 1995; Le Deist & Winterton 2005). As Lum (1999) puts it, the assumption that human capabilities can be unequivocally described and accurately communicated by means of language is unfounded. So, at best, written competency standards are rough and ready, though useful, guides and we should be wary of assuming that actual realities of what competence is are reflected in the words used to describe them. Therefore it is not the words that are important but what they *mean*, and the extent to which what they mean is widely *understood*. This intangible nature of competence can present particular challenges, one of the most significant of which is its assessment. This is because there is a tendency to concentrate more on the tangible and the overt and less on the underlying (but possibly more critical) attributes of competence (Harris et al. 1995).

Definitions and conceptions of competence

The training package Development Handbook for Units of competency (DEEWR 2007) defines competency as:

... the ability to perform particular tasks and duties to the standard of performance expected in the workplace.

Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise. It covers all aspects of workplace performance and involves performing individual tasks; managing a range of different tasks; responding to contingencies or breakdowns; and, dealing with the responsibilities of the workplace, including working with others. Competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time, and in the required workplace situations and environments.

As such, the definition has changed relatively little since its inception under the National Training Board in the early 1990s. It is a functional, workplace-focused and task-oriented view of competence involving the consistent application of an individual’s relevant knowledge, skills, abilities and attitudes. There are a multitude of other definitions too, for example:

Spencer and Spencer (1993 p.9) define competency as:

... an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation.

They argue that underlying characteristics include knowledge and skills (the most easy to develop), but also attitudes, values and self-concepts as well as traits and motives, which are part of a person's core personality and therefore difficult to describe and develop. They point out that while one may *train* to secure skills and knowledge, many of the other attributes are more difficult to assess and develop, so it is most effective to *select* for them. In other words, we may be training for and assessing the easy stuff. But there are problems if judgements are not made about the more difficult, but possibly most critical, aspects of competence at work. Sooner or later, whether in training, selection or performance management, judgements—good and bad—will be made about peoples' competence. These judgements should be based on sound evidence. So the issue is how much can formal training through training packages contribute to good judgements about people, and their skills, knowledge and attributes?

In addition, Spencer and Spencer (1993) distinguish between 'threshold' competencies—the essential characteristics of competence—and 'differentiating' competencies—which separate superior from average performers. Thus, while this is still individually based, it is more focused on human resource development and management. It also has a notion of trying to define superior performance or 'excellence' which is missing in current Australian conceptions (see Torr 2008).

Other conceptualisations are more generic. For example, Eraut (2003, p.117 cited in Mulder, Weigel & Collins 2007) define it as:

The ability to perform the tasks and roles required to the expected standards.

Gonczi (1999, p.182) defines a competent individual as:

one who possesses the attributes necessary for job performance to an appropriate standard.

Mulder, Weigel & Collins (2007) see competence as:

... the capability to perform and to use the knowledge skills and attitudes that are integrated in the professional repertoire of an individual.

Thus the literature sees competence both as a concept and a set of features which describes the attributes of a competent individual.

Mulder, Weigel & Collins (2007) identify three traditions of competence and competence research:

- ✧ the behaviourist: which stresses the importance of observing successful and effective job performers and determining what differentiates them from their less successful counterparts (this is predominantly based in the United States)
- ✧ the generic approach: which aims to identify the common abilities that explain variations in performance
- ✧ the cognitive approach: which includes all the mental resources of individuals that are used to master tasks, acquire knowledge and achieve good performance.

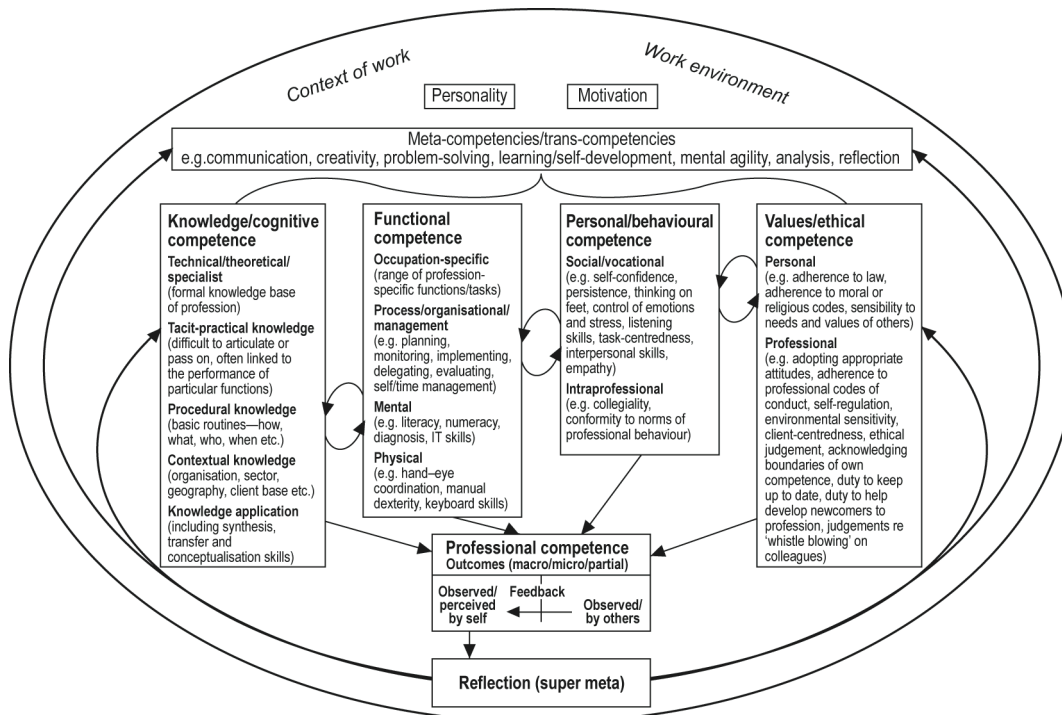
Cheetham and Chivers (1996; 1998) have developed a holistic model of professional competence which has a set of five interrelated competences and competencies:

- ✧ cognitive competence: including underpinning theory and concepts as well as informal tacit knowledge gained experientially. Knowledge (know that) is underpinned by understanding (know why)
- ✧ functional competencies (skills or know how): things that a person should be able to do, and to demonstrate
- ✧ personal competency (behavioural competencies or knowing how to behave): those relatively enduring characteristics of a person that relate to effective or superior performance

- ✧ ethical competencies: possessing the appropriate personal and professional values as well as the abilities to make sound judgements in work related and other situations
- ✧ meta-competencies: the ability to cope with uncertainty, as well as with learning, learning to learn and reflection.

Such an approach (see figure 1) attempts to capture underlying knowledge and behaviours.

Figure 1 Cheetham and Chivers's revised model of professional competence

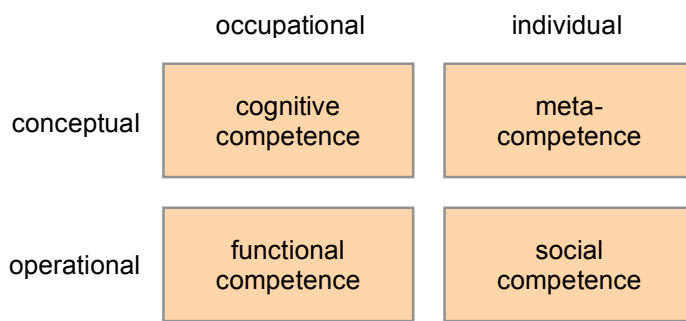


Source: Cheetham and Chivers (2006), cited in Torr (2008).

This model has been developed further (see figure 2) by Le Deist and Winterton (2005). It blends personal and occupational competence. Three of its dimensions—cognitive, functional and social competence—relate respectively to the familiar knowledge (*savoir*, or know that), skills (*savoir faire*, or know how) and attitudes (*savoir etre*, or know how to behave). Meta-competence is somewhat different in that it is an overarching form of competence concerned with facilitating the acquisition of the other substantive competencies.

Le Deist and Winterton (2005) argue that such multi-dimensional and holistic models of competence are becoming more widespread. They also argue that the various models of competence evident in Europe (and which their paper and that of Mulder, Weigel and Collins [2007] describe) are coming together and drawing on the respective strengths of the other dominant approaches: the United States' behaviourist tradition; the United Kingdom's (and Australia's) functional approach; and the more multi-dimensional and holistic approaches of France and the Germanic states (Germany and Austria). This offers the chance to develop a more shared and 'global' understanding of competence.

Figure 2 A typology of competence



Source: Le Deist and Winterton (2005).

Torr (2008) develops a model of professional competence that takes into account the complexity associated with pharmacy practice in New Zealand. She suggests that the five domains of competence are:

- ✧ the cognitive domain
- ✧ the technical domain
- ✧ the legal/ethical domain
- ✧ the organisational domain
- ✧ the inter/intra-personal domain.

Competence develops as people develop their capability to integrate the skills, knowledge and behaviours associated with each of these domains to the point where the domains and their skills and knowledge are fully integrated. At this point, they are classed as competent. If a person cannot fully integrate any one of the domains then they are not yet competent. As a person gains more experience and confidence in their ability, they are able to integrate the knowledge, skills and behaviours associated with the domains more consistently and to a greater extent, and thus exhibit the characteristics associated with expertise.

Torr also suggests that professional competence, and indeed expertise, develops as people cultivate their ability to use the skills and knowledge contained in the five domains of competence in a fully integrated and seamless manner. The learning programs designed to support the development of competent professionals should therefore deliver not only the requisite skills and knowledge for proficient practice but should also develop the practitioner's capacity to use those skills and knowledge in a consistent, seamless and integrated manner.

Therefore, a competent person shifts from being a person who can perform a range of individual tasks competently to a more holistic concept of one who is able to integrate a range of skills, knowledge and attitudes to perform a technical role. Thus, it shifts the focus of competence assessment from the *task* to the *person*.

Given the diversity of potential models there is little value in describing the strengths and weaknesses of particular conceptions of competence. Rather, it may be worthwhile to determine a broadly and internationally accepted holistic model which might form the basis for a re-conceptualised view of competence for use in Australia.

Another view of competence, including qualifications and the importance of context

On the other hand, competence may be conceived as a virtue of an organisation, which recognises the complex interaction of people, skills and technologies that drives company performance (Le Deist & Winterton 2005). In other words, competence is context dependent, and the competencies that people display and/or value vary in these different contexts. Equally, we might apply the concept of 'competence' to a business unit or work team, not just an individual.

This more organisational view has a value in that it shows that the particular knowledge, skills and attributes of an individual may be valued differently in different organisations and contexts. While broad descriptions of competence may hold up, the relative emphasis put on their component parts will vary across organisations and for particular individuals, given the pool of competences within the organisation. Thus, while there are standards, they are not uniformly applied, and their various components have different emphases dependent upon circumstance. This makes it particularly important to understand not only an individual's competence in relation to a work function, but also the particular balance and level of skills, knowledge and attributes they can bring to a particular workplace.

Key issues

This literature review is designed to support the development of a proposed policy framework for future VET training products required to respond to changing labour market demand for the skills needed by businesses, industry and individuals for the 21st century. The nature of these products is informed by the following the Council of Australian Governments' objectives that:

- ✧ the working age population have gaps in foundation skills levels reduced to enable effective educational, labour market and social participation
- ✧ the working age population has the depth and breadth of skills and capabilities required for the 21st century labour market
- ✧ the supply of skills provided by the national training system responds to meet changing labour market demand
- ✧ skills are used effectively to increase labour market efficiency, productivity, innovation, and ensure increased utilisation of human capital.

For VET, these objectives recognise the continuing importance of the sector in providing industry with the trained personnel it needs. However, there is a wider role envisioned. This is that people need to have the basic skills to participate in work, the labour market and society more generally. In addition, they need a broad range of skills and abilities to meet labour market needs now and into the future. This helps to ensure that the labour market is as efficient as possible and that human capital is effectively utilised.

This chapter draws together a range of the issues raised about CBT and notions of competence. These issues include how competency is conceived, and whether or not concepts of expertise and excellence should be part of this conception. They also consider the balance between the broad acceptance within the sector of CBT, while acknowledging some concerns about both CBT and training packages. However, whatever changes are proposed need to be supported by effective change management and a professional and skilled VET workforce.

Conceptions of competence and competency

As we have seen, conceptions of competence vary and the way in which they are manifested in various countries differs. However, there appear to be a common set of conclusions emerging:

- ✧ Most examples embrace a version of the knowledge, skills and personal attributes and attitudes approach.
- ✧ There are many conceptual definitions of competence and competency. Competence cannot readily be captured through generic descriptions and there is an over-reliance on standardisation of competences. They are strongly dependent on context (Mulder, Weigel & Collins 2007). However, an integrated approach to the competency concept opens the opportunities to learning approaches such as problem-based curricula, authentic learning and similar approaches (Gonczi 1999; Torr 2008) which have a long history in the higher education sector. More recently Figgis (2009) has highlighted the use of such problem-based and authentic learning approaches in the VET sector.

- ✧ It can be hard to integrate institutional and workplace learning, and the competence concept does not solve this automatically—although both settings may contribute significantly to competence development (Mulder, Weigel & Collins 2007).
- ✧ The emphasis on assessment in competency standards can be unbalanced and too dependent on the link between performance and the inference of competence. Key generative components of competence—the key criteria—need to be identified to help discriminate between individuals. However, the assessment of competence is a labour intensive and time-consuming process (Mulder, Weigel & Collins 2007).
- ✧ Knowledge and generic/employability skills may be underemphasised because they are seen in the statement of competency as an underpinning or enabling requirement of an action oriented task statement. More recently, conceptions of competence emphasise the importance of learning-to-learn and ‘personal reflection’ skills.
- ✧ Competence is a journey, not an end point; that is, competencies go beyond formal education and training and experience. They are developed through the integration of all that has been learnt or experienced formally and informally, and in some cases relate to capacities which have been developed over a life span. Thus, this is a persuasive justification for the provision of opportunities for adults to develop and learn throughout life.
- ✧ Qualifications represent a formal judgement point about particular sets of competencies.

In summary, and based on the literature, an individual’s competence is the sum total of the:

- ✧ formal and informal training and learning they have undertaken
- ✧ range, depth and quality of experiences they have had both in work and in life more generally (and the extent to which it has been possible to reflect and learn from them)
- ✧ nature, level and balance of knowledge and skills attained and used. This also includes their tacit knowledge
- ✧ personal attributes and value sets they hold and use
- ✧ range of contexts in which their competencies have been acquired because what may be regarded as competent in one context may not in another. In simple terms, the standard of performance expected in the workplace is variable, not uniform. It emphasises different aspects of competence, while possibly broadly agreeing with the description enshrined in the standards.

This suggests that there is a need to balance conceptions of personal and occupational competence. For an individual, personal competence is the greater construct, and occupational competence necessarily a sub-set. How effectively an individual’s total competence is deployed as part of their occupational competence will depend on the workplace context. Some workplaces and work roles will make use of a wider range of the total competencies of an individual than others.

Any competence model has to accommodate a variety of views of what competence is and how it develops, changes, grows and matures throughout an individual’s career and life. Thus, any model of competence needs to take into consideration a balance between the functional needs of industry and the employer on the one hand and the individual on the other. It would also be worthwhile if an accord could be reached on what competency-based education and training is between education sectors to facilitate pathways and recognise the value of an individual’s formal and informal learning in whatever context.

It is important to examine and debate the view of competence as widely as possible. There are three reasons for this, as described below.

Firstly, in a more open and contestable VET system, individuals will be given more choice over their purchasing decisions. In such circumstances they are the customer and have the right to have their needs met and not have them determined by either industry or providers. In a democratic society the fundamental imperative is the empowerment of individuals (Tarrant 2000).

Secondly, there seems to be no comprehensive national research on who is currently making the decisions to enrol in programs. If it is employers who are deciding on and funding their employees to attend programs, there is no question that functional and employer-relevant training is called for. On the other hand, if individuals are making the decision then the education and training needs to have industry credibility to be sure, but meeting an individual's personal needs and aspirations also carries significant weight

Thirdly, Karmel, Mlotkowski and Awodeyi (2008) investigated the relevance of training to the occupations of VET graduates through a comparison of what VET graduates study and the jobs they get. They found that the match between what people study and the jobs they get is high for the technicians and trades group of occupations, but relatively low for most other courses. Most of the mismatch between intended and destination occupations reflects the generic aspect of vocational education and training with graduates mostly reporting their training as relevant to their job, despite not ending up in the 'matched' occupation. This suggests that, in thinking about the role the VET system's role in addressing the needs of the labour market, there is no neat match between courses and the occupations in which most people end up working, with the exception of the trades. Second, those developing training packages need to be aware that many graduates may not work in their 'intended' occupation. Finally, potential students need to be realistic about the likely occupation that a particular course will lead to.

Recognising excellence and documenting competence

If the development of competence and new competencies is seen as an ongoing activity, formalising competency in a qualification or statement of attainment is a point-in-time decision. The present underpinning conception of competence assessment is that, in the first instance, one is either competent or not. However, one key issue from research spanning over a decade is whether the recognition of expertise (Torr 2008), excellence and CBT are compatible (Harris et al. 1995; Williams & Bateman 2003).

'Grading' as a mechanism of recognising excellence or expertise has been a contested issue since the introduction of competency-based training, and is currently being investigated by the National Quality Council. Grading is something that many people find valuable, whether they are students, employers or teachers. Essentially, many employers want better information to help them make decisions about employing people. It would appear that students would like their level of work and achievements recognised to help them to open doors and pathways to employment or further study, while teachers can see it as an incentive to encourage their students to learn as much as possible. Providers indicate that it could be used for award recognition purposes, whilst other learning institutions (for example, universities) would like this sort of information to assist the selection process (see Williams & Bateman 2003). It could also be valuable where partnership and articulation arrangements do not exist. In many cases it boils down to how more comprehensive information and feedback can be provided to those who need it on levels of performance and individual characteristics rather than just competent or not competent.

Competence and judgements about it need to be supported by sufficient documentary evidence. Not only is this needed to support better recognition of prior learning, it also represents a way of ensuring that evidence of competence is gathered and documented from a wide range of sources. There is increasing support for the use of portfolios to facilitate this process.

Support for CBT

There was criticism of the CBT-based approaches (see Blachford 1986) in use well before its more 'formal' introduction in the late 1980s and early 1990s. The nature of that criticism was not

dissimilar to that found in more recent literature. On the whole, though, no strong case has been put forward for an alternative approach.

In its summary of the literature, NCVET (1999) suggests CBT has significant support from Australian industry and industry training advisory bodies (now the industry skills councils). Competency-based training, together with other related initiatives, has brought providers and industry, through enterprises, closer together and there has been mutual recognition of the value of this by both parties, especially through partnership arrangements (Callan & Ashworth 2004) and skills ecosystems (Loble & Williams 2004). There is some doubt still about how well CBT as a concept is understood. There are a range of understandings within and outside the VET sector of what it is and what it involves: some supportive, some less so.

There is also a large measure of support, but still some lingering disquiet, among providers using CBT and amongst a number of academics. Nevertheless, there is certainly not a strong or strident body of support for any alternative to CBT. What the research supports is a refined model of CBT which addresses some of the issues with the conception of competence and the ways training packages and the training system operate. In short, what seems to be called for is a refining of the underpinning concepts, the products and processes and the operating milieu. It is also about trying to balance the needs of industry and individuals in competence development.

Billett et al. (1999) make the additional point that CBT is but one of the factors associated with the development of a more skilful and adaptable workforce. They cast doubt on whether it is even a major one. A range of authors (for example, Stevenson [1992], Hager [1993] and Blunden [1996]) argue about the fragmentation brought about by ignoring the importance of the relationships between tasks performed in an occupation. More recently, Wheelahan (2005; 2008) has argued that we must go beyond work, or learning for work, and privileging only the knowledge needed for work at the expense of other less immediate but potentially significant knowledge which may benefit the learner.

In addition, while there is also a growing practice of extending assessment to include skills, underpinning knowledge, attitudes and ethics to achieve more holistic and less fragmented assessments, CBT assessment strategies continue to be disputed. This is not surprising as both the CBT and training package concepts promote assessment-led approaches to teaching and learning. Therefore, the quality of the teaching can be dictated in part by the rigidity or relative freedom of the mandated (and hence auditable) assessment guidelines of the training packages. It will also depend on what is, and is not, assessed and certified. It is argued that there is an inadequate assessment and certification of both underpinning knowledge and generic, employability skills and attributes. There is also some debate over the extent to which the professional judgements of skilled assessors are valued, especially through the auditing process (Smith 2004).

There are still concerns by both providers and industry over the standards of what others provide. Industry is particularly sceptical of the standard and quality of training if they have no direct experience of it. There are therefore calls for greater consistency of standards on the one hand, as well as demands for greater flexibility and for programs which meet particular needs on the other. It is hard to have both.

The value of training packages

AVETMISS⁷ data indicate that training packages now account for an increasing share of the students formally enrolled, going from 9% in 1999 to 57% by 2006. At the same time, the proportion enrolled in accredited courses has dropped from 86% to 37%. Subject-only enrolments have remained static throughout this period at around 6%.

⁷ Australian Vocational Education and Training Management Information Statistical Standard.

Training packages facilitate national recognition, national consistency and portability. They also provide an important basis for registration and licensing and regulatory compliance in a number of industries, and have also been used by industries and enterprises for purposes other than training, including job descriptions for recruitment and classifications, and to define career structures. Therefore, they have a variety of uses beyond a role in training. While many are positive about training packages, others are less so, and the issue seems to be about how they have been introduced and the extent to which their purposes and how they can best be used is widely enough understood.

A few issues have emerged from the literature:

- ✧ Hoeckel et al. (2008) have pointed out that a small proportion of qualifications (about 180) account for the bulk of the publically funded enrolments. The underutilisation suggests that qualifications may not be fit for purpose, or are only meeting a limited market need. However, this may be related to the funding models in use.
- ✧ Hoeckel et al. (2008) have also suggested it is time to review training packages and to reduce their length and complexity. The essential issue is that in trying to be ‘all things to all people’, they may not be meeting particular needs well and perhaps a different form of product mix is needed. There are also relatively high non-completion rates, suggesting that many consumers are looking to complete modules or skill sets rather than qualifications.
- ✧ Mulder, Weigel & Collins (2007) note that specifying the competences to be acquired do not necessarily automatically result in the design of effective learning activities. The responsibility for translating training packages into teaching, learning and assessment strategies and programs clearly rests with providers. A range of approaches have been used to do this. New South Wales maintained a central curriculum development function to do that for its providers (Gonczi 2000). Other systems used lead providers to fulfil a similar function. However, translation is a significant issue for private providers as they are not part of a system nor do they have large levels of support infrastructure. They therefore do it themselves or draw on the expertise of consultants to help them with the development process. The translation process from a training package to a competency-based education and training program can be time consuming and not necessarily straight forward. Therefore, there are additional delays in package implementation until new education and training programs are developed and put in use. At its worst, time pressure and poor practice can mean compromises in implementation and in the quality of the teaching and learning programs developed. At its best it bestows considerable freedom for good innovative practice. There is a mixture of practice in the system and the guidelines provided and the auditing systems are unable in themselves to regularise the quality of practices. Professional development, communities of practice, networks, benchmarking and moderation processes offer additional tools in the armoury aiming at improvements.
- ✧ Schofield and McDonald (2004) note that even after a number of years some educators still did not understand the purpose of training packages and the relationship between them and teaching, learning and assessment processes. There are also misunderstandings about what competency-based education and training is. Grace (2005) notes that there are differences in the ways end-users of both training packages and the requirements of the AQTF interpret them, with some finding them liberating and useful, while others find them constraining. The issue seems to be variation in their understanding of the intents of the documents and processes, and their experiences of them in use. Often, and particularly in larger providers, some workgroups may see things differently than others, so there can be a variety of views about what training packages and CBT are about, what is possible and what is not. Perhaps too little attention has been devoted to developing shared understandings and too much to trying to perfect documentation. Perhaps greater attention is also needed to the way auditors are trained and audits conducted. If their auditing practices are not in harmony with the intents of the system, they are powerful and potent influencers and conveyers of the wrong information. Thus the audit process can potentially stifle the flexibility, innovation and responsiveness that industry says it wants of VET.
- ✧ Finally, Hager (2004) notes that training packages are output or product oriented and assessment led. He suggests learning is a process—or at least an interplay—between process and product. It

is contextualised, and it needs to be holistic. In his view, what is needed is for training packages to incorporate de-facto curricula as one of their elements. At present the teaching and learning 'curriculum' is a black box which is bookended between the specification of the work function in the competency standards at one end and the assessment guidelines at the other.

Whatever changes are made to conceptions of competence and the design of training products, the literature suggests that adequate consultation is needed with those directly involved in their implementation and use.

The need for inclusive consultation and effective change management

As far back as 1994, the Allen Consulting Group (1994) pointed out that key elements of reform are not working well together and suggested that change management was poor. There was a need for an overall strategy rather than a loosely connected set of relevant policies. Arguably, this criticism remained true after this and is a lesson to guide the coming raft of proposed reforms.

One of the key messages from the introduction of training packages is for inclusive consultation and involvement. Educators, whether academics or from training providers, felt themselves cut out of the change process (ANTA 2002). It is dangerous to exclude those who, ultimately, are key to the success of proposed changes. Gilling and Graham (2000) point to Peter Noonan's comment in the Campus Review of 12–18 April 2000, noting that 'the change management process had not been well handled' and that there was too much attention to driving 'front-end' reform at the expense of the 'back-end' courting of those most directly affected: staff in providers.

It is also important not to set unreasonable deadlines when changes are introduced. Building a broadly-based willingness to look at new ways of doing things in the VET sector will be important to underpin any initiatives proposed. This may be hard in a sector which has seen considerable change, and which has complex change management processes. A common complaint is that a new set of changes is imposed while the previous set, into which so much time and effort had been poured, is forgotten (Guthrie 2008).

There are always the ready and early adopters of change. The secret will be to focus attention on those who are sceptical about training products and processes to convince them of the change required. Given the VET sector operates in an environment of constant change, proposed changes need to be seen as part of a sustained and comprehensive strategy. Much change management in the sector has been piecemeal, and sometimes with too little considered thought to the downstream effects. One example which is mentioned in the literature extensively is the move to give provider staff the major role in designing and implementing VET courses while at the same time seeming to reduce the basic skills and knowledge requirements of those required to undertake this work. This means paying particular attention to the skills teachers, trainers and other VET professionals need to have to work effectively.

Re-emphasising and enhancing the professionalism of VET staff

Mulder, Weigel & Collins (2007) note how the extent to which the role of the teacher/trainer and the learner changes can be easily overlooked when competency-based education is introduced. In addition, they commented upon the need to pay structural attention to the development of teachers/trainers and managers in developing competency-based education.

Gonczi (2000) and others (ANTA 2002) have noted the controversy over the minimum standards in educational background now required of those teaching and training in VET. It has been

suggested that both the current and former Certificate IV are inadequate.⁸ In addition, casual staff have not had sufficient access to the development they need to help them teach more effectively, and make the best use of the training and organisational resources at their disposal. This is partly due to the difficulty involved in helping them to be part of the shared culture within a provider or teaching team, but some providers and work teams do this better than others. Perhaps it is time to revisit the nature and level of training (and qualifications) required to be a VET professional, and to better acknowledge the complexity of the work these professionals do.

Guthrie, Perkins and Nguyen (2006) describes the impact on VET professionals of an increasingly diverse client base and the demands of training packages. They suggest that VET professionals need, amongst other things, to:

- ✧ move beyond a focus on AQTF compliance to an emphasis on embedding quality practices in every day activity
- ✧ address fundamental issues surrounding the concepts of industry expert and learning facilitator
- ✧ increase the focus on transferable generic skills, including literacy and numeracy, and ensure that these are a clearly articulated part of a student's program
- ✧ redesign strategies, systems, structures and mind sets that currently work against the adoption by VET professionals of new ideas and new ways of working.

Guthrie Perkins and Nguyen (2006) also suggest that VET practitioners would need to become highly skilled professionals who:

- ✧ have a sophisticated pedagogical repertoire
- ✧ use more learner-centred, work-centred and attribute-focused approaches, rather than traditional pedagogies
- ✧ can work with a variety of clients, in multiple contexts and across a range of learning sites
- ✧ understand that the integration of learning and work is a major feature of the contemporary work environment.

Mitchell et al. (2006) note that many VET practitioners still need skills in implementing training packages, as well as being able to support workplace learning and take advantage of new learning technologies. The new demand-driven and outcomes-oriented VET system requires a 'new' professional who is better able to meet the expectations of industry clients and individual learners.

One of the areas for improved professional practice that always emerges is assessment. Schofield and McDonald (2004) suggest more reliance needs to be placed on the judgements of professional educators. Hager (2004) notes that performance is readily observable while a range of capabilities, abilities and skills are less so. Judging competence always involves inference and, therefore, professional judgement.

⁸ In fact the original Certificate IV in Assessment and Workplace Training (now the Certificate IV in Training and Assessment) was developed to certify workplace trainers and assessors rather than to become the surrogate qualification. Prior to that teachers in the TAFE system had been supported to acquire university level qualifications in teaching.

References

- ACCI (Australian Chamber of Commerce and Industry) 1992, *The Australian national training system: Guidelines for employers*, ACCI, Melbourne.
- ACCI & BCA (Australian Chamber of Commerce and Industry & Business Council of Australia) 2002, *Employability skills for the future*, Department of Education, Science and Training, Canberra.
- ACTU/TDC 1987, *Australia reconstructed*, Australian Council of Trade Unions/Trade Development Council report of the mission to Western Europe, Australian Council of Trade Unions, Melbourne.
- Allen Consulting Group 1994, *Successful reform: Competitive skills for Australians and Australian enterprises*, Allen Consulting Group, Melbourne.
- 1999, *Training to compete: The training needs of Australian industry—A report to the Australian Industry Group*, Australian Industry Group, North Sydney.
- 2006a, *Assessment and reporting of employability skills in training packages*, Department of Education, Science and Training, Melbourne.
- 2006b, *World class skills for world class industries: Employers' perspectives on skilling in Victoria*, Australian Industry Group, North Sydney.
- ANTA (Australian National Training Authority) 2002, *Training packages: Successes, issues and challenges in implementation*, ANTA, Melbourne.
- Australian Vice Chancellor's Committee (AVCC) 1992, *Competency-based education and training: The AVCC position*, AVCC, Canberra.
- Billett, S, McKavanagh, C, Beven, F, Hayes, S, Angus, L, Seddon, T, Gough, J & Robertson, I 1999, *The CBT decade: Teaching for flexibility and adaptability*, NCVET, Adelaide.
- Blachford, K 1986, *Orientations to curriculum in TAFE*, Victorian TAFE Board, Melbourne.
- Blunden, R 1996, *The mind dependency of vocational skills*, reprint no.5, University of Melbourne, Victoria.
- Callan, V & Ashworth, P 2004, *Working together: Industry and VET provider training partnerships*, NCVET, Adelaide.
- Cheetham, G & Chivers, G 1996, 'Towards a holistic model of professional competence', *Journal of European Industrial Training*, vol.20, no.5, pp.20–30.
- 1998, 'The reflective (and competent) practitioner: A model of professional competence which seeks to harmonise the reflective practitioner and competence-based approaches', *Journal of European Industrial Training*, vol.22, no.7, pp.267–76.
- Clayton, B, Blom, K, Meyers, D & Bateman, A 2003, *Assessing and certifying generic skills: What is happening in VET?*, NCVET, Adelaide.
- Collins, C (ed.) 1993, *Competencies: The competency debate in Australian education and training*, The Australian College of Education, Canberra.
- Dawkins, J 1989a, *Industry training in Australia: The need for change*, Australian Government Press Service, Canberra.
- DEEWR (Department of Education, Employment and Workplace Relations) 2007, *The training package development handbook for units of competency*, DEEWR, viewed 11 November 2008, <http://www.tpdh.deewr.gov.au/units_of_competency/default.htm>.
- Down, C 2004, 'Tackling emergent needs: The Applied Technology Framework project' in *Vocational education and training and innovation: Research readings*, ed. S Dawe, NCVET, Adelaide.
- 1989b, *Improving Australia's training system*, Australian Government Press Service, Canberra.
- Figgis, J 2009, *Regenerating the Australian landscape of professional VET practice: Practitioner-driven changes to teaching and learning*, NCVET, Adelaide.
- Gilling, J & Graham, D 2000, 'Making the difference: Competency-based education and training in the Australian manufacturing industry' in *Competency-based education and training: A world perspective*, eds A Arguelles & A Gonczi, Editorial Limusa, Mexico.
- Gonczi, A 1999, 'Competency-based learning: A dubious past—An assured future?' in *Understanding learning at work*, eds D Boud & J Garrick, Routledge, London.
- 2000, 'Review of international trends and developments in competency-based education and training' in *Competency-based education and training: A world perspective*, eds A Arguelles & A Gonczi, Editorial Limusa, Mexico.

- Grace, L 2005, 'Training packages and the AQTF: Freedom to move or components of a compliant-driven straightjacket?', presented at 8th annual Australian Vocational Education and Training Research Conference, Brisbane.
- Guthrie, H 2008, *Having your say: Views from the sector on enhancing vocational education and training provider capability*, NCVER, Adelaide.
- Guthrie, H, Perkins, K & Nguyen, N 2006, *VET teaching and learning: The future now 2006–10*, Western Australia Department of Education and Training, Perth.
- Hager, P 1993, 'Principles of competency-based assessment' in *Testing times: A national conference on assessment for competency-based training*, NCVER, Adelaide.
- 2004, 'The competence affair, or why the vocational education and training system urgently needs a new understanding of learning', *Journal of Vocational Education and Training*, vol.56, no.3, pp.409–33.
- Harris, R, Barnes, G, Haines, B & Hobart, B 1985, *Competency-based vocational education: an evaluation*, commissioned report no.9, TAFE National Centre for Research and Development, Adelaide.
- Harris, R, Guthrie, H, Hobart, B & Lundberg, D 1995, *Competency-based education and training: Between a rock and a whirlpool*, Macmillan, Melbourne.
- Hoeckel, K, Field, S, Justesen, T & Kim, M 2008, *Learning for jobs: OECD reviews of vocational education and training, Australia*, Organisation for Economic Cooperation and Development, Paris.
- Industry Skills Councils Forum 2008, *Training packages (A story less told)*, Industry Skills Councils, viewed 7 November 2008, <<http://www.isc.org.au>>.
- Karmel, T, Mlotkowski, P & Awodeyi, T 2008, *Is VET vocational? The relevance of training to the occupations of vocational education and training graduates*, NCVER, Adelaide.
- Kearns, P 2001, *Generic skills for the new economy: A review of research relating to generic skills*, NCVER, Adelaide.
- Keating, J 2008, 'Qualifications Systems and National Qualifications Frameworks', paper presented to the Monash University–ACER Centre for the Economics of Education and Training Annual Conference, Melbourne, October 2008, viewed 19 November, <<http://www.education.monash.edu.au/centres/ceet/publications/conferencepapers/2008.html>>.
- KPA Consulting 2004, *Review of the implementation of the AQTF standards*, Australian National Training Authority, Brisbane.
- Le Diest, F & Winterton, J 2005, 'What is competence?', *Human Resource Development International*, vol.8, no.1, pp.27–46
- Loble, L & Williams, P 2004, 'Stimulating the demand for skills within skillecosystems' in *Vocational education and training and innovation: Research readings*, ed. S Dawe, NCVER, Adelaide.
- Lowrie, T, Smith, E & Hill, D 1999, *Competency-based training: A staff development perspective*, NCVER, Adelaide.
- Lum, G 1999, 'Where's the competence in competence based education and training?', *Journal of Philosophy of Education*, vol.33, no.3, pp.403–18.
- Mayer Committee 1992, *Key competencies: Report of the committee to advise the Australian Education Council and Ministers of Vocational Education, Employment and Training on employment-related key competencies for post-compulsory education and training*, Australian Education Council and Ministers of Vocational Education, Employment and Training, Canberra.
- Misko, J 1999, *Competency-based training: Review of research*, NCVER, Adelaide.
- Misko, J & Robinson, C 2000, 'Competency-based training in Australia' in *Competency-based education and training: A world perspective*, eds A Arguelles & A Gonczi, Editorial Limusa, Mexico.
- Mitchell, J, Chappell, C, Bateman, A & Roy, S 2006, *Quality is the key: Critical issues in teaching, learning and assessment in vocational education and training*, NCVER, Adelaide.
- Monahan, G & Olliffe, B 2001, 'Competency-based education and training for law students', *UTS Law Review* 14, viewed 14 November 2008, <<http://www.austlii.edu.au/au/journals/UTSLRev/2001/14.html>>.
- Mulcahy, D & James, P 1999, *Evaluating the contribution of competency-based training*, NCVER, Adelaide.
- Mulder, M, Weigel, T & Collins, K 2007, 'The concept of competence in the development of vocational education and training in selected EU member states: A critical analysis', *Journal of Vocational Education and Training*, vol.59, no.1, pp.67–88.
- NCVER (National Centre for Vocational Education Research) 1999, *Competency-based training in Australia: Research at a glance*, NCVER, Adelaide.
- 2003, *Fostering generic skills in VET programs and workplaces: At a glance*, NCVER, Adelaide.
- 2004, *Profiling the national vocational education and training workforce*, NCVER, Adelaide.
- Priest, A 2009, *Getting the knowledge–skills mix right in high-level vocational education and training qualifications*, NCVER, Adelaide.
- Schofield, K & McDonald, R 2004, *Moving on ... Report of the high level review of training packages*, Australian National Training Authority, Melbourne.
- Spencer, L & Spencer, S 1993, *Competence at work: A model of superior performance*, Wiley, New York.
- Smith, A, Hayton, G, Roberts, P Thorne, E & Noble, C 1995, *Enterprise training: The factors that affect demand*, State Training Board of Victoria, Melbourne.

- Smith, E, Hill, D, Smith, A, Perry, P, Roberts, P & Bush, A 1996, *The availability of competency-based training in TAFE and non-TAFE settings in 1994*, Australian Government Press Service, Canberra.
- Smith, E & Keating, J 2003, *From training reform to training packages*, Social Science Press, Tuggerah.
- Smith, L 2004, *Valuing recognition of prior learning: Selected case studies of Australian private providers of training*, NCVET, Adelaide.
- Stevenson, J 1992, 'Policies and practices in vocational education and training in Australia' in *What future for technical and vocational education and training?*, vol.1, NCVET, Adelaide.
- Tarrant, J 2000, 'What is wrong with competence?', *Journal of Further and Higher Education*, vol.24, no.1, pp.77–83.
- TDA (TAFE Directors Australia) 2001, *Training packages: A position paper*, TDA, Canberra.
- Thomson, P, Foyster, J, Turker, J, Toop, L & Dean, S 1990, *Competency-based training in TAFE*, TAFE National Centre for Research and Development, Adelaide.
- Torr, A 2008, 'A complex view of professional competence', presented at 17th National Vocational Education and Training Research Conference, NCVET, Adelaide.
- Whelehan, L 2000, *Bridging the divide: Developing the institutional structures that most effectively deliver cross-sectoral education and training*, NCVET, Adelaide.
- 2005, 'Theorising the relationship between the individual, knowledge and skill', presented at 8th Australian Vocational Education and Training Research Association Conference, AVETRA, Brisbane and Nowra.
- 2008, 'Can learning outcomes be divorced from the process of learning? Or why training packages make very bad curriculum', presented at 11th Australian Vocational Education and Training Research Association Conference, AVETRA, Adelaide and Crows Nest.
- Williams, M & Bateman, A 2003, *Graded assessment in vocational education and training: An analysis of national practice, drivers and areas for policy development*, NCVET, Adelaide.