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OCCASIONAL PAPER

Getting the knowledge–skills mix right in high-level vocational education and training qualifications

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NCVER NEW RESEARCHER AWARD RECIPIENT

The National Centre for Vocational Education Research (NCVER) New Researcher Award has been created to encourage new researchers (either established researchers new to the vocational education and training [VET] field or new career VET researchers) to present their research at NCVER's 'No Frills' conference. The award also provides new researchers with an opportunity to have their research peer-reviewed and published by NCVER.

In 2008, NCVER awarded four New Researcher Awards. The recipients were:

✧ Annie Priest, Southbank Institute of Technology

✧ Catherine Curry, The Cultural Recreation and Tourism Training Advisory Council

✧ Fiona Shewring, TAFE NSW, Illawarra Institute

✧ Mary Cushnahan, Kangan Batman TAFE.

About the research

Getting the knowledge–skills mix right in high-level vocational education and training qualifications

Annie Priest

One of the main research objectives of the National Centre for Vocational Education Research (NCVER) is to build the research capacity of the vocational education and training (VET) sector. To assist this objective, NCVER has developed a program whereby new researchers are sponsored to attend its annual 'No Frills' conference. Four new researchers were supported to attend this year's conference in Launceston. One of these awards went to Annie Priest. This paper is based on her presentation at the conference.

Vocational education and trade qualifications on a par with university graduate certificates and graduate diplomas are a relatively recent addition to the VET sector's stable of offerings. They have emerged as industry demands workers with more than just technical skills and more than just theoretical knowledge.

This paper uses the Vocational Graduate Certificate and the Vocational Graduate Diploma in Educational Design in a Queensland technical and further education (TAFE) institute to examine how the 'traditional' knowledge and theory associated with higher-level qualifications can be accommodated within the framework of competency-based training and assessment. The paper raises some interesting, and provocative, questions about the status and value of these qualifications by comparison with their university counterparts.

Key messages

✧ Universities have been traditionally viewed as providing a theoretical education as a precursor to training for employment, while the VET sector is perceived as offering a practical, work-based education.

✧ The advent of higher-level vocational qualifications equivalent to some university postgraduate qualifications raises the issue of the inclusion of theoretical knowledge in the competency-based format of the vocational qualification.

✧ Getting the mix of applied and complex knowledge in higher-level VET qualifications is one of the big challenges of the curriculum development process. Careful attention to the language used in the competencies can ensure that the higher-order thinking and theoretical (underpinning) knowledge is successfully embedded in the qualification.

Tom Karmel
Managing Director, NCVER

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Background

Introduction

This paper aims to contribute to the discussion on the quality and accessibility of underpinning knowledge in competency-based training, with particular reference to the Vocational Graduate Certificate and the Vocational Graduate Diploma in Educational Design. Equating these qualifications to postgraduate qualifications in the Australian Qualifications Framework (AQF) has highlighted once again certain assumptions about the relative status of knowledge in vocational education and higher education, the very nature of knowledge, and how it can be adequately framed in competency-based training and assessment.

In 2007, Southbank Institute of Technology in Queensland, as part of a suite of higher-level qualifications, began research and development of a Vocational Graduate Certificate and Vocational Graduate Diploma in Educational Design. This process represented an element in the drive to meet the shortage of qualified professionals and associate professionals in a range of industries and to provide more flexible pathways between the vocational education and training (VET) and the higher education sectors (Queensland Department of Employment and Training 2005). The qualifications were also intended to provide more flexible entry requirements, with a range of relevant professional and life experience being considered as alternatives to a first degree.

Until the last few years, the VET sector had operated in a separate domain from universities, providing training at AQF levels 1–7. With the advent of the vocational graduate certificate and the vocational graduate diploma, VET qualifications sit side by side with higher education at AQF graduate certificate and graduate diploma (commonly referred to as AQF levels 8 and 9) levels. The two sectors now meet in the middle of an historical academic and vocational divide at a level traditionally dominated by universities.

With the positioning of high-level qualifications side by side but located in different sectors, two questions emerge. First of all, how will vocational education and training provide an alternative to university in a culture in which universities have traditionally been the source and giver of higher knowledge? Secondly, how will the competency-based framework deliver not only skills but also effective access to bodies of knowledge and learning that are normally encapsulated in a theory-first subject-based curriculum?

Educational design is an emerging profession, where the various roles have not yet been clearly identified. This area therefore provides an opportunity to illustrate the process associated with identifying job roles, tasks and underpinning knowledge and skills for the purpose of applying the competency-based format.

Research method

The first section of this paper draws on research literature to set the context for questions of knowledge. It discusses the background of the role of universities in the field of knowledge and learning, relating this to historical understandings of knowledge and the status of vocational

education relative to those understandings. Drawing on the literature and on anecdotal evidence from workplace meetings and discussions, the paper aims to demonstrate how ideas of the relative value of theoretical and practical knowledge are still played out in preconceived ideas about the status of vocational education and training in relation to higher education.

The paper explores how vocational education might fit into contemporary interpretations of intelligence and knowledge and uses the development process of the new educational design qualifications to illustrate the notions of knowledge explored. The paper examines key aspects of the debate in vocational education research concerned with the capacity of competency-based training to provide access to theoretical knowledge. An analysis of the competency documents of the Vocational Graduate Certificate and the Vocational Graduate Diploma in Educational Design provides a basis for arguing that: firstly, a high level of thinking is embedded in the language choices themselves; and, secondly, key sections of the document firmly anchor the job tasks in a mandatory foundation of theoretical knowledge.

Other qualitative data gathered during the curriculum development project have been used to further discussion. These include telephone and face-to-face conversations with educational design managers, university lecturers and graduates from university postgraduate programs in related fields and meetings between the Curriculum Development Advisory Committee and an educational designer. While this information was not specifically sought for the purpose of writing this paper, it became apparent that, along with other sources, it helped to build a broader picture of the issues to be explored.

Finally, the paper draws on feedback from the six members of the Curriculum Development Advisory Committee about the development process, including their reflections on how suitable the qualification is likely to be as an alternative graduate pathway and how well the skills–knowledge mix in the qualifications has been achieved. This feedback was given in semi-formal interviews and was based on prepared questions. The interviews were not tightly structured in order to enable the participants to express ideas as they emerged without being controlled by a question-and-answer format.

Setting the historical context for questions of knowledge

The background to the supremacy of universities as the 'holders and controllers of knowledge' (Phillips 2005) dates back to before 1000. Aristotle conceptualised different types of knowledge existing in quite distinct spheres, with each having different values. The first category, which was universal and theoretical knowledge, was accorded the highest value, and practical, context-bound knowledge, the lowest. This has resulted in the dualism of mental versus manual, theoretical versus practical, and doing versus thinking, which still dominates all sectors of education. Universities have traditionally assumed the role of maintaining, producing and transmitting 'universal and theoretical' knowledge, while vocational education and training has taught 'skills' (Pring 2004).

Technical and further education (TAFE) institutes offering vocational education and training have historically occupied a lower status than higher education institutions. Vocational education and training has traditionally been viewed a 'second best' to a university education, requiring a lower Year 12 entrance score for post-secondary entry and providing largely skills training for the trades (James 2000; Keating 2007; Abela, Chenoweth & Ozog 2002). Within the training package framework qualifications are competency-based and performance has largely been assessed as pass/fail (competent/not yet competent), contrasting with the broad subject-based offerings of universities and assessments given according to a number of levels of achievement. These differences, alongside perceptions of unequal status, have all contributed to deepening in the public consciousness the status divide between vocational education and training and higher education offered by universities.

The assumed superiority of the knowledge imparted by universities surfaced at several points during the development of and discussions about the Vocational Graduate Certificate and Vocational Graduate Diploma in Educational Design. Notes taken at various meetings in which the qualifications were discussed record the following comments made by a multimedia designer and an educational designer:

> But how could it be AQF 8 and equivalent to a post grad certificate at uni? It's competency-based.

> I don't believe that a vocational graduate certificate can offer the intellectual rigour of a university course.

> If I had the choice, I'd do a university course any day. It would look better on my CV.

While these perspectives articulate an historical and deeply ingrained sense of what knowledge is and where it resides, they don't take into account current understandings of intelligence, learning and the nature of knowledge, which are having a major impact on educational developments and new industry requirements. Theories of multiple intelligences (Gardner 1983) and emotional intelligence (Goleman 1997) have highlighted the value of attributes such as self-awareness, empathy and creativity. It is now becoming increasingly recognised that 'lifelong learning' needs to replace the idea that learning is complete after secondary or tertiary education (Watson 2003; Field 2006). Drucker's concept of 'knowledge work' has placed new value on the development of new knowledge and its application to production (Drucker 1993 cited in Johnston 1998). In addition, 'tacit knowledge' or knowledge we are unaware we possess and therefore find difficult to access and explain (Polanyi 1966) has been found to have an important role in innovation and in passing on skills in organisations. As well, the concepts of Mode 1 and Mode 2 knowledge developed by Gibbons et al. (1994) have had a huge influence on the ways of understanding knowledge. Here disciplinary, 'universal knowledge' is reinterpreted as Mode 1, and interdisciplinary, flexible and contextualised knowledge as Mode 2, a new dynamic form of knowledge on which we draw for contemporary work and daily life.

These developments have emerged as industry demands workers with more than just technical skills and more than just theoretical knowledge. With the growing emphasis on the role of knowledge in economic development, industry is seeking workers who can identify and work creatively, solve problems, drive innovation and work across skills areas to create new bodies of knowledge. And vocational education is seen as the potential provider of these skills, implying that current definitions of competence need to take account of these broader learning outcomes (Kearns 2004; Schofield & McDonald 2004).

Changes like these have, according to Johnston (1998), decreased universities' hold over knowledge, which is now 'open to erosion'. However, universities have changed considerably as notions of knowledge change and industry needs dictate more and more what is taught. The Queensland University of Technology coined the slogan 'University for the Real World', offering professional courses related to contemporary practice and providing work placement as part of their degrees. Increasingly, universities are espousing the idea of work-based learning. Descriptions of university courses show the influence of an increased emphasis on work-related learning. For example, the applied science degree at the University of Queensland advertises itself so:

> Applied Science is the science of applying knowledge from one or more natural scientific fields to practical problems. The study of Applied Science at the University of Queensland will provide you with not only a broad understanding of a variety of scientific principles but also the skill to apply your knowledge to solve problems and provide solutions to a variety of situations—vital skills sought by employers and therefore a particular advantage when entering the workforce.

Nevertheless, the emphasis is still weighted towards theory. The description of the applied science degree, given above, places knowledge first and its application second. Phillips (2005) in his study of the traditional teaching approach of universities claims that, while universities pay lip

service to new conceptions of knowledge, traditional attitudes have changed little. Conversations during the research phase in the development of the educational design qualifications between the researcher of this paper and eight graduates of higher education postgraduate courses supported this, with all respondents reporting a strong emphasis on theory, with academic essays as assessment tasks being the norm. As already described, the entire focus of a vocational qualification is the converse: the job tasks are described first and are informed by knowledge and high-order thinking.

The debate about competency-based training and access to knowledge

For some, the way that the underpinning knowledge or theory is framed in vocational education and training qualifications is the object of scepticism—or whether it should be included at all is often questioned. A common thread in the debate about VET qualifications is that there has been an 'insufficient specification of underpinning knowledge in performance based competencies' (TAFE Directors Australia 2001). Its critics have pointed to the breaking-down of underpinning knowledge into minutely specified and over-contextualised tasks, which results in reducing learning to a simplistic product rather than a complex process of acquiring and transferring skills and knowledge. They also decry the tendency that this oversimplification leads to in delivery and assessment, where tasks are simply ticked off on a checklist of actions, with no monitoring of underpinning knowledge and its transfer to other contexts (Gonczi 2004; Hunter 2001; Hager 2004). It has been argued even more vehemently that the competency-based framework, with its frequent focus on highly contextualised workplace knowledge, denies the learner access to the theoretical knowledge and debate of the field (Wheelahan 2008).

These and other concerns were acknowledged as an urgent area for development and improvement by the now defunct Australian National Training Authority[1] in its review of training packages (Schofield & McDonald 2004).

The perceptions of members of the Curriculum Development Advisory Committee also reflected these concerns. (These are detailed in the section, Feedback from the members of the Curriculum Development Advisory Committee.)

It was in this cultural context of largely traditional views of where knowledge sits and the priority it should take in a qualification, particularly in the new positions at AQF levels 8 and 9, that the Curriculum Development Advisory Committee undertook the development of the Vocational Graduate Certificate and Vocational Graduate Diploma in Educational Design. The committee was also working within the changed climate of new interpretations of knowledge and work.

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1   The Australian National Training Authority (ANTA) was abolished in 2005 and its responsibilities assumed by the Department of Education, Science and Training (now the Department of Education, Employment and Workplace Relations).

The project

This section explores how both the process and the product of the curriculum development of the Vocational Graduate Certificate and Vocational Graduate Diploma in Educational Design reflect these new interpretations of knowledge and work and the relationship between knowing and doing.

Defining the job and articulating the knowledge and skills used to do it

Educational design is at the interface of teaching and learning, writing, information technology and multimedia design. As a consequence, this process requires a complex and particular blend of skills and knowledge. Conversations with educational design managers that explored what educational designers did and where they came from revealed that most educational designers have come to the job or apply for positions by chance, usually from one of the backgrounds described. According to many of the managers, educational designers tend to acquire knowledge on the job and seek qualifications later. All managers agreed that it was difficult to find educational designers with the right mix of experience, knowledge and qualifications across the multidisciplinary range of skills and knowledge required in this changing field.

The development of these qualifications was seen both by the range of educational design managers consulted and the Curriculum Development Advisory Committee as an important step in defining and professionalising a relatively new field, which suffers from lack of definition and sense of professional identity (Ekland, Kay & Lynch 2003; Sims 2004; Schwier, Campbell & Kenny 2004). Most people outside an educational design unit have very little idea about what an instructional or educational designer is or does. Moreover, within the industry, roles and responsibilities of educational designers can vary markedly across different sectors.

It was therefore important to capture the diversity of knowledge and skills, as well as the multidisciplinary nature of the knowledge used. Accordingly, the Curriculum Development Advisory Committee constituted a mix of designers from private industry, university and TAFE institutes and a government registered training organisation.

Consolidating the diverse job tasks and knowledge into competencies hadn't been undertaken, and the process was driven by the questions, 'How can we articulate what we all do?' and 'What knowledge do we all have in order to do it?'

Actually articulating what educational designers do was expressed in the form of a matrix of tasks, drawn from an analysis of job advertisements, telephone conversations with educational design managers and discussions with the Curriculum Development Advisory Committee. Discussions teased out generic groupings and identified in all areas what was vital and what was additional to the role. These decisions were not determined during a single event, but through a series of discussions during which roles and responsibilities were reformulated and redrafted, with a new awareness emerging of what designers do in different sectors and how the various activities are consolidated. Identifying the necessary tacit knowledge referred to earlier in the paper was embedded in the development process of defining the tasks of a relatively new and evolving profession. It was quite common in this process for new and undiscussed knowledge to

surface, as described later in the competency analysis. As the consultant educational designer on the project put it: 'It's so hard to identify what I do and know because I just do it, without knowing that I'm doing it and using all this knowledge as well.'

She added later that articulating what she didn't know she knew had increased her sense of professional identity. This was corroborated by two members of the Curriculum Development Advisory Committee in the interviews. The educational designer commented that the process had enabled her to see the complexities of the skills and knowledge she combined in doing the job and which she would need to help others to learn it.

These comments illustrate the value of industry experts attempting, during the curriculum development process, to identify and articulate their unconscious knowledge, both in order to define their professional identities and to pass on expertise in the form of curriculum that embodies the specific work (Polanyi 1966).

How higher-order thinking and theoretical knowledge is embedded in the competencies

The following structure for the core competencies[2] of the vocational graduate certificate and the vocational graduate diploma details the initial identification of the educational design tasks at the junior and senior levels of the job. (Eight electives were devised for each qualification to provide for the diverse demands across sectors and to cater for the needs of a broad target audience from different professional backgrounds with a range of knowledge and prior experience.)

Table 1   Core units of competency of the Vocational Graduate Certificate and the Vocational Graduate Diploma in Educational Design

Vocational graduate certificate	Vocational graduate diploma
EDD801A: Scope the design of a learning resource in consultation with a client	EDD901A: Identify and implement innovative learning solutions
EDD802A: Develop the instructional design plan and prototype for a learning resource	EDD902A: Research and implement professional development strategies
EDD803A: Develop learner-focused content for a learning resource	EDD903A: Plan and manage concurrent educational design projects
EDD804A: Develop and evaluate a learning resource	

As in any competency-based qualification, the level of cognitive skill is expressed in terms of actions and, as such, differs fairly radically from a higher education qualification in a similar discipline. In this case, the above actions would follow descriptions of the bodies of knowledge required to carry out the tasks.

But these aren't simply descriptions of job tasks that sit at two levels of seniority. The skills and knowledge are embedded in the language and align to the cognitive requirements of their position on the Australian Qualifications Framework.

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2   A unit of competency is structured as follows: *Elements of competency* are the main sub-divisions of the unit of competency and describe what a person must be able to do to be deemed competent; *performance criteria* describe what someone must do to demonstrate competence for a particular element and the required level of performance; *essential knowledge and/or skills* are underpinning knowledge and/or the skills a person must have to perform the tasks competently; the *range statement* lists the range of contexts and conditions in which assessment can take place; the *evidence guide* is to guide assessment of the unit of competency, but it can also be used for planning training. It comprises a) critical aspects of evidence to be considered—particular knowledge or skill that is essential to performance b) specific resources and context required for the assessment to be valid and c) suggested method of assessment

Thinking and knowledge—it's in the verbs

According to the Toolkit for Developers of Vocational Graduate Certificates and Vocational Graduate Diplomas (Queensland Department of Education, Training and the Arts 2006), both the vocational graduate certificate and the vocational graduate diploma require high levels of self-direction and specialisation in areas of skills and knowledge. They are also both characterised by 'breadth, depth and complexity' of 'initiation analysis, design and evaluation activities in highly varied and highly specialised contexts'. In addition, both require a high level of independent judgement in the above activities. The vocational graduate diploma requires additional further specialisation in a body of knowledge and adds a layer of independence and complexity to the description of vocational graduate certificate characteristics.

Firstly, the verbs chosen to define the competencies, based on the advised selection from Bloom's Taxonomy in table 2, are an indicator of higher-order thinking at graduate certificate and diploma level, as required by the Australian Qualifications Framework specifications.

Table 2   Bloom's taxonomy for vocational graduate qualifications

Analyse	Implement
Apply principles of ...	Initiate
Design and plan ...	Manage
Develop a strategy for ...	Plan and manage
Evaluate	Provide leadership to …
Execute and evaluate	Research and apply
Formulate	Research and design
Identify	Research and present

Source: Queensland Government Department of Education, Training and the Arts (2006).

It can be seen here that the mental processes of learning are reflected in the meaning of the verb, for example, 'research and design' and 'evaluate'. So although, as readers, we are in the realm of action by virtue of the use of a verb rather than a noun, we get a clear idea of the level of cognitive work required to occur at these levels.

✧ '*Scope* the design of a learning resource in consultation with the client' (italics used to highlight verbs) points to a creative and analytical cognitive process.

✧ '*Identify and implement* innovative learning solutions' implies a process of problem-solving, judgement and evaluation at a high level, decision-making, and acting on decisions in complex ways.

Other important language choices that reflect levels of thinking and knowledge

The other language choices in each competency fill out the scope of thinking and knowledge required. In the first of the above competencies, the *design of a learning resource* brings into focus the need for significant knowledge of what learning resources do, how they do it and why. *In consultation with a client* adds another dimension of ongoing communication, involving negotiation, distilling specialist information and advising.

In the second competency, *innovative learning solutions* expands the complexity of the task of identifying and implementing, bringing the activity into the realm of specialised knowledge in both education and technology.

At the element and performance criteria level, members of the Curriculum Development Advisory Committee collaborated to come up with an agreed expression to convey the integration of work task, and other skills and knowledge. Below is an example of an expanded

element of the vocational graduate diploma—EDD901A: Identify and implement innovative learning solutions.

Figure 1   Example of an element and performance criteria

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1   Analyse and evaluate new and emerging educational practices and technologies

    1.1   *Analyse*[3] new and emerging educational practices and the use of technologies to *determine the potential* for application as teaching and learning tools in an organisation (**Planning and organising**)

    1.2   *Research* knowledge management strategies to *collaborate in a professional exchange of views* and information (**Planning and organising**)

    1.3   *Determine the potential* of new and emerging educational practices and technologies for application as teaching and learning tools in an organisation (**Problem solving, planning and organising**)

    1.4   *Select and research* the use of a new technology appropriate to a learning context within the organisation (**Planning and organising, technology**)

    1.5   *Analyse* the organisation's resources and learning environment to *determine the capability and constraints of the existing IT [information technology] infrastructure* with respect to new technologies (**Planning and organising, problem solving**)

The italics are used in figure 1 to highlight the language choices that show the complex level of thinking required. Bolded phrases elaborated on further in the range statement indicate the broad areas of theoretical knowledge required.

The content of the criteria shows the interdisciplinary nature of the tasks, covering teaching and learning, information technology systems and global thinking across organisational strategies.

Furthermore, the choice of mental process words indicates 'a workable account of competence' (Hager 2004), providing access to learning, as Hager terms it: 'a dialectical interplay of process and product'. In other words, while performance of the activity or task is observable and measurable, carrying it out involves the application of skills learned and developed through highly individual variable cognitive processes which have to be inferred.

Ensuring that knowledge is embedded in the learning process

With competencies couched in terms of action containing implicit knowledge and cognitive skills, rather than in terms of explicit concepts to be learned, how do curriculum developers ensure that learners will have access to theoretical knowledge and debate in their fields when the qualification is delivered, particularly in higher-level qualifications?

Firstly, the Essential skills and knowledge and, secondly, the Critical aspects of assessment and evidence sections of the curriculum document provided key mechanisms for the curriculum developers to highlight the vital nature of the theoretical components of the qualification. These were means of gathering and emphasising the major characteristics and theoretical demands of the competency.

Here is an example of how the structure of the curriculum document allowed the development process to take a key aspect of knowledge in educational design from implicit to explicit requirement. The competency under development was EDD901A Identify and implement innovative learning solutions and the element *Plan strategies for integrating new and emerging practices and technologies into the instructional design programs.*

The process is summarised in the following steps.

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3   The current TAFE Queensland standard for writing competencies prescribes the use of active voice for writing performance criteria. This may differ in other contexts.

Step one

A committee member observed that it was important for an educational designer to have a working knowledge of the concepts of information technology in order to communicate with specialists in the area. Based on this contribution, the committee worked on building it into the competency. A performance criteria was modified under the element *Plan strategies for integrating new and emerging practices and technologies into the instructional design programs* to produce the following:

> Negotiate the integration of a new technology with the IT service personnel, drawing on IT concepts and terminology.

(At this stage, the knowledge aspect is secondary to the job task.)

Step two

This was threaded through the essential skills and knowledge to ensure its inclusion in assessment (see figure 2) and expanded in the range statement to detail the concepts this might include.

Figure 2   Example of essential skills and knowledge

This section describes the essential skills and knowledge, and their level, required for this unit.

The following *skills* must be assessed as part of this unit:
- technology skills to access online resources
- independent research skills to locate information appropriate to purpose
- analytical skills to identify client and organisational needs
- problem solving skills to evaluate own teaching and identify reasons for improvement
- mentoring and teaching skills
- advanced literacy skills to develop evaluation tools, write a training plan and develop a concept proposal.

The following *knowledge* must be assessed as part of this unit:
- current innovations in technology and pedagogy
- concepts and methods of evaluation
- IT concepts and terminology adequate for negotiating and problem solving with IT support staff
- the theory and practice of knowledge management.

Step three

The 'IT concepts and knowledge' was then reinforced in the critical aspects of evidence to underline the importance of proof of this knowledge in the final assessment portfolio.

Further to this example, one of the members felt that the centrality of the learner in the educational design process needed to be better highlighted and that the active nature of the competencies made this a challenge. As a result of this observation, the evidence guide demands:

> a clear understanding of the centrality of the learner in the analysis of learning requirements and design of resources [must be demonstrated] through records of discussion with clients, case studies, evaluations or other research tasks.

By weaving the knowledge into the fabric of each section of the competency, the Curriculum Development Advisory Committee guaranteed that learners would have access to knowledge. Furthermore, references to drawing on appropriate learning theories to devise learning resources also provided access to a *range* of ideas and hence debate and, the committee hoped, avoided the situation referred to by Hager (2004) and Wheelahan (2008).

How the competency-based format facilitates new understandings of knowledge and learning

Like most jobs, educational design is about 'doing' while drawing on reserves of tacit and researched knowledge to apply problem-solving skills. The competency format allows for

facilitation of the tacit and prior knowledge referred to earlier. Performance criteria that bring together skills and knowledge in action lend themselves to building on learners' existing knowledge. They allow for examples of work situations that reflect the tasks from the competencies and the authentic work situations in which learners use tacit or prior knowledge, before deepening this with further research to solve the problem posed by the workplace tasks.

Hence competencies cater for the diverse range of experience and knowledge held by the potential learner cohort for this qualification, which can be taken by unqualified educational designers, multimedia designers, writers, trainers, teachers or information technology specialists wanting to move into a related but different field. This competency-based approach allows for learners accessing the knowledge of people in their own learning group to complete tasks, and learners working at speeds determined by their knowledge and learning needs, thus incorporating notions of lifelong learning (Watson 2003). The emphasis is not on the transmission of knowledge to empty vessels, but rather on vessels topping up or acquiring sufficient knowledge to be able to carry out tasks effectively.

Moreover, by integrating and contextualising knowledge within workplace tasks that demand working across disciplines (for example, *Analyse new and emerging educational practices and the use of technologies to determine the potential for application as teaching and learning tools in an organisation*), competencies embody Mode 2 learning in their interdisciplinary and contextualised nature (Gibbons et al. 1994).

This creates quite a different scenario from a traditional university approach, which teaches the theory first, to be applied afterwards, thus separating the thinking from the doing, both in the curriculum and the delivery (Phillips 2005).

The argument for and against theory first

There has, however, been some discussion about the efficacy and appropriateness of higher-level qualifications that focus on practice and are underpinned by theory. Ruinard (2008) refers to it as 'hiding theory' and privileging the 'performing of skills to the detriment of acquiring higher order discipline knowledge', proposing evidence that, were it not for the constraints of the format, an introductory theoretical unit would be preferred by curriculum developers in the area, not least because the process of 'hiding' the theory is 'laborious' and 'time-consuming'. This would bring the model closer to the university and classical model, where theory and practice are divided. Moreover, anecdotal evidence suggests that amongst developers of high-level qualifications there are frequent comments indicating that they need to incorporate more explicit bodies of knowledge 'because this is a graduate qualification'.

The argument put forward by this paper is that the competency-based framework brings together the two in a way that facilitates the articulation of tacit knowledge and the currently framed forms of knowledge required by industry.

Feedback from the members of the Curriculum Development Advisory Committee

At the end of the development process, interviews were carried out with the four members of the Curriculum Development Advisory Committee directly involved in the educational design industry, in order to gather their impressions of the qualification and the competency-based format. The interviews followed an informal format: questions were posed on the issue of theoretical knowledge and the status of TAFE qualifications vis-à-vis university equivalents and let the conversation evolve from there.

The expectation that a VET higher-level qualification was likely to have a greater emphasis on practice than an equivalent postgraduate qualification at a university was common to all members of the committee. Almost all of them talked about their strong commitment to creating a new qualification to develop job-ready educational designers. Yet at the same time they were convinced of the importance of the educational theory that was required for advising clients authoritatively and for developing courses based soundly in current thinking about teaching and learning.

There's clearly a paradox here, but as one of the Curriculum Development Advisory Committee members noted: 'It needs to be a useful qualification, providing solid, *useful* theory that a designer can use to explain choices and possibilities to the client. At uni, I learned a lot of interesting theory, but it wasn't necessarily useful when I got out.' However, all committee members agreed that getting this mix was one of the big challenges of the curriculum development process.

The traditional view of TAFE as a technical rather than academic institution and not 'up' to the university level held sway to a certain extent. Two people said they had some concerns that it might not reflect the theoretical rigour of the job, that it would be overly technical and undermine the professionalism of the job. One added that 'people don't understand what educational design is, and imagine that it's just "putting lessons on a computer", so it was important to stress the amount of knowledge required and "wave the flag" for the profession'.

However, this same respondent stressed that his mindset on this had moved considerably and that these qualifications would be 'important for developing an understanding in the community of what we do'.

While one member believed that we could not provide the 'intellectual rigour characteristic of universities', the others were strongly of the opinion that the qualification provided something different but equal, because as one educational design manager commented: 'it demands that the student knows a lot and is able to do quite a number of things with it, across different job skills and tasks. That's complex; it's not just about studying theory and writing an essay on it.'

On the subject of focused theoretical competencies, a suggestion was made that studying theory first in a separate unit could be 'less confusing' for the learner. However, there was agreement that the way it was written reflected the job. One said that the competencies described what needed to occur to achieve competence. Delivery, he said, was another question and educators could choose to teach the competencies in a less holistic way and still provide the means for learners to achieve job-focused outcomes.

All Curriculum Development Advisory Committee members said that it had been a fruitful professional development experience, with one claiming that it had helped him to better understand training packages. Two of the members added that this process had consolidated their sense of identity as educational designers and made them realise just how complex their jobs were.

Conclusion

This process of designing a qualification will be familiar to many curriculum developers within the VET sector. What made this process somewhat different was that the qualifications in question sit at the graduate level of the Australian Qualifications Framework and have therefore drawn comparisons with qualifications at this level in the higher education sector. This comparison has highlighted traditional attitudes and concerns about how access to knowledge and skills is best framed and taught.

What emerged from posing those questions was an understanding that the competency-based framework can harness dimensions of learning and contemporary ideas of working with knowledge. The competency development process has also worked particularly well in the process of defining and highlighting an emerging profession such as educational design, by articulating expert tacit knowledge in terms of what educational designers do and what kinds of knowledge they draw on to do it. Competencies mirror how people use knowledge in complex ways in their jobs and daily lives.

Consequently these qualifications can offer a distinctive alternative to universities. However, informal observations and comments rate high-level VET qualifications as poor cousins to their university counterparts, and general attitudes reinforce this relationship. A repositioning of vocational education and training in the arena of higher-level qualifications could change public attitudes and popularise contemporary understandings of knowledge and learning. Rather than try to imitate the university approach, this researcher proposes VET high-level qualifications as a strong alternative to university graduate qualifications, focusing on the high level of applied and complex knowledge for the new workplace.

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