

Critical Issues.

**A draft literature review on critical issues in
teaching, learning and assessment in
vocational education and training, version 26
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Preamble: the future environment for VET

This preamble provides a context for the literature review by briefly describing the expected future environment for the vocational education and training (VET) sector – an environment of significant change.

Purpose and focus of the review

The purpose of this literature review is to highlight recent thinking and research at the national and international level that can inform the development of teaching, learning and assessment practices in the VET sector. The review may encourage VET practitioners to develop enhanced services to meet the increasingly varied demands of individuals, employers and industry. The review may also encourage VET organisations and systems to identify resources required to support the provision of these new services.

Chappell, Hawke, Rhodes and Solomon (2003) note that much of the contemporary discussion in the sector emphasises the value of a VET pedagogy that is more learner-centred and work-centred. They also note that this view about VET pedagogy is based on a number of significant changes in the world of work. All these changes present challenges to organisations and professionals involved in the delivery and management of VET services.

The review begins by indicating what the literature is saying about the environmental factors that are driving the changes and creating challenges in VET teaching, learning and assessment.

Future drivers of change

In a major study that addressed the future European provision of vocational education and training, Moynagh and Worsley (2003) identified a number of drivers of change that were likely to impact considerably on VET provision. These drivers included:

- **Technological developments.** Rapid developments in information and communications technology (ICT) including the mass social uptake of broadband technology will create a new context in which learning opportunities can be managed, delivered and experienced.
- **Consumerism.** Future learners steeped in consumer culture will expect learning products tailored to their individual needs, including utilising the new media increasingly available to learners. Customised and personalised learning will become a widely held expectation of individuals and employers using VET.
- **Staff shortages.** A looming shortage of teachers is a major issue for many education and training systems worldwide. Competition for highly skilled graduates will intensify in the global economy, creating difficulties in attracting and retaining teachers. This will increase pressure to raise the productivity of existing VET staff and will lead to dramatic changes in the way VET work is organised.
- **Engaging more learners.** General skill shortages in the economy will lead to calls for vocational education and training to re-engage older learners and those who have left education and training with few vocational skills. These learner groups require quite different approaches to teaching, learning and assessment.
- **Competition.** Skill shortages are also likely to increase competition between existing providers. Large employers and groups of employers may invest heavily in their own training capacity to secure essential skills and to compete with external providers for government funding for this purpose.

These future drivers of change for Europe are similar to the drivers of change in Australian VET, identified by Mitchell, Clayton, Hedberg and Paine (2003): the rising complexity and uncertainty in society and the economy; the changing structures of work; the changing structures of industry and employment; an appreciation of the value of generating and applying knowledge; the aggressive spread of the proposition that workers need to add value; public policy; new technology; shrinking time horizons; and the shift from mass production to market segmentation (p.14). The European drivers of change also fit with the findings of Dickie, Eccles, FitzGerald and McDonald (2004) who found considerable consensus in Australia about the features of the environment VET professionals will be expected to work in the future:

an environment characterised by increasing diversity in the client base; increasing sophistication in client expectations; change in products and expansion of options for training delivery; changes in employment, work roles, team structures and places of work; increasing competition and increasing demand; and globalisation of the training market. (p.4)

Dawe and Guthrie (2004) provide an example of this future environment in discussing the new roles VET providers can play in providing training for innovative enterprises. They find that assisting innovative enterprises requires the use of different strategies by VET practitioners and the development of additional capabilities by VET providers:

...this may require working more effectively across disciplines and developing more personalised arrangements for delivery. VET providers need to identify where their strengths lie and build industry partnerships in these areas. Close collaboration with industry partners will enable VET providers to ensure the appropriate balance of practical and theoretical skills. (p.19)

Harris, Simons and Clayton (2005) asked VET practitioners to identify drivers of change. Practitioners perceived that drivers for change were largely attributable to influences outside their place of employment. They named government policy as having the most marked effect, influencing curriculum practices and the way training is provided. The second major driver was the expectations of industry and the community, and the third was economics/finances. These three factors were judged to be closely interrelated and to drive each other, with policy being the prime driver of change affecting VET practitioners, especially at this time of transition to training packages. Internal drivers included increased expectations for responsiveness, pressure for greater accountability, rethinking approaches to teaching and learning and access to learning opportunities, changing workloads, and student characteristics.

Questions framing the review

Although there is broad agreement in the literature concerning the drivers of change in vocational education, there are diverse suggestions regarding appropriate responses. In order to make sense of the diversity of suggested responses provided in the literature, this review poses a number of questions. The questions are:

1. What do individual learners and industry clients want from VET in terms of teaching and learning experiences, and services and support, and how can these best be met?
2. What skills are needed by VET practitioners in the design of learning programs and resources and in the provision of assessment services to meet the needs of different client groups, and how might these be developed most effectively?
3. What are the critical success factors – individual, organisational and systemic – for VET providers in developing and implementing innovative approaches to teaching, learning and assessment, and how might models about good practice be most effectively transmitted?

Qualifications

Each of these questions is addressed in a separate section below, with the following qualification. This review identifies a range of views in the literature in response to these questions but does not attempt to summarise every issue raised by these questions, as many of the issues discussed in the review – such as client needs, pedagogy, learning styles, assessment, innovation and workbased learning – are themselves the subject of extensive research.

The term ‘critical issues’ is used in this review in the sense of significant or substantial or serious issues for VET practice.

For brevity, the term ‘teacher’ is used in this document to describe all those VET practitioners who might be called teachers or trainers.

1. What learners and clients want

This section of the literature review addresses the following question: What do individual learners and industry clients want from VET in terms of teaching and learning experiences, and services and support, and how can these best be met?

Introduction

The move from mass production to mass customisation is now an established feature of the service economy in the Western world, with VET service provision being no exception. VET industry clients and individual learners increasingly expect that products and services will fit their particular needs and that customised programs and even personalised services will become standard offerings. Hence, this section of the literature review examines the development of key concepts in VET such as customisation and personalisation, leading to the current situation where customising services for groups is often not enough: learners want services personalised, ‘just for me’.

The rise of personalised services

In today’s VET sector, many participants are expressing their needs for customised learning experiences and services – designed just for them, to suit their preferred time frame, work situations and lifestyles, as well as their preferred approaches to learning. For instance, Mitchell et al. (2003) describe VET providers catering for the following types of learners, groups and learning styles: different types of individual learners including equity groups such as disability, Indigenous, ethnic, literacy and 15-19 year olds; different learner groups such as mature-aged workers and trainees; and learners with different learning styles, including verbal and non-verbal. The case studies show that ‘customised workplace training demands on VET are potentially as varied as there are enterprises in Australia’ (p.1):

These conditions suggest almost limitless scope for innovation in teaching and learning functions at individual, group and organisational levels in VET. Additional possibilities for innovation are created by new relationships between VET practitioners, industry representatives and the wider community. (Mitchell et al. 2003, p.1)

Groups of learners, myriad enterprises, multiple industry associations and new combinations of VET clients are now expecting to be able to access customised training as a standard offering.

The concept of personalised services has been a focus of attention overseas for some time. The UK Minister of State for School Standards Miliband says the trend to personalised services was forecast in the late 1980s by Sabel and Piore in *The Second Industrial Divide* (1989) and is now winning support within the public services:

Its argument was simple: the era of mass production would be superseded in the advanced economies by the age of flexible specialisation, products previously produced for a mass market now to be tuned to personal need. That revolution in business, fuelled by rising affluence and expectations, has not been confined to the world of business. It has found its way into social norms through the end of deference; its manifestation in public services is the demand for high standards suited to individual need. (Miliband 2004, p.3)

Personalised service is a step on from customising services for groups, suggests Miliband (2004, p.11): ‘The new frontier in business is not flexible specialisation but personal

experience. We (in education) must not get left behind’.

The concept of personalised services is supported by the ideas and practices of e-business says Mitchell (2003), who notes the attraction of e-business for customers:

...from a customer’s point of view, contemporary e-business may be symbolised by ATMs, the world wide web and online banking, meaning that e-business is about user choice and instantaneous, just-for-me, personalised service. In the Information Age, increasingly customers may want learning materials to be available in digital format, to be accessed electronically. Customers may want more self-service, by being able to ‘personalise’ the digital information and customers may want service right now and at anytime over a 24 hour period. (Mitchell 2003, p.55)

Mitchell (2003) examines the connections between e-business and online learning and considers the opportunities for the VET sector arising from these connections. The report shows that, historically, e-business and online learning evolved separately within VET, although examples of convergence between the two fields are now emerging. The report argues that encouraging this convergence will benefit VET customers. However, using e-business practices and technologies to provide personalised services is not straightforward: the barriers to VET providers include costs, user resistance, technology availability and limited staff skills and inexperience.

As distinct from personalised services, the concept of ‘personalised learning’ (<http://www.standards.dfes.gov.uk/personalisedlearning/> accessed 12 May 2005) is actively promoted by the British Government and by organisations such as the Demos think-tank (Leadbeater 2004), as a timely response to meet the specific needs of all students. The promotion of personalised learning stems from the belief that every student can benefit from individualised attention and support. Personalised learning entails collaborative approaches to learning combined with rigorous use of assessment information to set targets for achievement, based on an understanding of a student’s current skills and capacity. Speaking in relation to schools, not vocational education, Miliband sees personalised learning as being about the need to embrace individual empowerment:

...we need to embrace individual empowerment within as well as between schools.

This leads straight to the promise of personalised learning. It means building the organisation of schooling around the needs, interests and aptitudes of individual pupils; it means shaping teaching around the way different youngsters learn; it means taking the care to nurture the unique talents of every pupil. I believe it is the debate in education today. (Miliband 2004, p.3)

While most UK initiatives in personalised learning are applied in schools, there is a new recognition that the approach is applicable within the Australian VET sector. The NSW Board of Vocational Education and Training (BVET) and the NSW Department of Education and Training (DET) are currently undertaking research on personalised learning (Mitchell 2004b).

In the future, VET customers may seek from personalisation what Engestrom (2004) calls ‘co-configuration’. Co-configuration means that the customer becomes a real partner with the provider of the product or service. In co-configuration the client and provider actively work together to conceptualise, develop, monitor, change and evaluate the product or service being provided. This kind of relationship between customers and providers produces ‘customer-intelligent’ products or services. Co-configuration also encourages the development of a continuous relationship and often requires collaboration between multiple providers operating in networks.

As an alternative to the term co-configuration, Miliband (2004) talks about ‘co-producers’, that is students and other stakeholders such as teachers and parents engaging in the co-production of learning. He advocates that students not only deserve to be given choices, but also their voices deserve to be heard:

Aneurin Bevan used to say that the freedom to choose was worthless without the power to choose. This is the power of personalised learning. Not a false dichotomy between choice and voice but an acceptance that if we are to truly revolutionise public services then people need to have both. Because students are not merely educational shoppers in the marketplace; they are creators of their own educational experience; and their voice can help shape provision. Both as a means of engaging students in their own learning – the co-producers of education. And as a means of developing their talents – using their voice to help create choices. (p.10)

Miliband believes that the education system should be moulded around the student, not the student around the system; and that the education system should identify the true potential of every student and give them the means to achieve it (p.11). While this sounds ambitious and idealistic, a partnership between service provider and customer is the direction being taken by other service industries such as banks, airlines and hotels (Mitchell 2004b), so Miliband's vision could be seen as bringing education in line with developments in these other service industries.

Individual learners' preferences for teaching and learning experiences

Ideally, innovative teaching takes account of individual learners' differences, responding to the contemporary push for all organisations, including educational ones, to be customer-centred:

Innovative teaching fosters lifelong learning, moving VET away from the 'content model of education', based on a teacher-designed curriculum and to more fluid and interactive learning processes which move both student and staff members into a new and different experience of VET. (Mitchell et al. 2003, p.2)

However, catering for individual differences in VET is a major undertaking, given the vast range of learners and settings:

...teaching and training staff need to move beyond their own habitual or acquired personal and professional learning styles to satisfy the diversity of student cohorts. These can range from 15-19 year olds, to Indigenous students, to mature-aged students, to busy professionals with limited time, to parents returning to study after raising a family. (Mitchell et al. 2003, p.32)

While the ideal may be to satisfy individual learners' needs in VET, there are many different ways to interpret the differences between learners. Burns (2000, pp. 43-78) suggests that four different schema can be used to analyse students' individual differences: theories related to the study of personality traits and the effects of personality on behaviour, for example theories about introverts and extroverts; theories related to values and preferences, for example a student used to teacher-dominant classroom settings may resist self-directed learning opportunities; theories related to styles of thinking, for example Sternberg's theories about legislative, executive and judicial styles of thinking; and theories about the effect of memories on goal achievement.

To cater for individual learners' differences, Mitchell et al. (2003) note the popularity among Australian VET practitioners of the Learning Style Inventory developed by Kolb, with its categories of accommodating, diverging, assimilating and converging, and the Learning Styles Questionnaire of Peter Honey and Alan Mumford, with its categories of activist, theorist, pragmatist and reflector. Smith (2005) finds that VET teachers typically develop their own theories of learning style – largely seen as preferences – either without reference to established theory, or on a basis of a theory they were aware of and that had appeal to them (p.8). Smith suggests that further investigation in VET would be useful in establishing the effectiveness of teacher-generated pragmatic notions of learning style and forms of response to learning enhancement or learner experience (p.6). Smith and Dalton (2005) recommend that professional development for VET practitioners should include an examination of learning style theories, but ultimately should be focused on good practice:

Professional development in the area of style is likely best contextualised into good practice by

teachers rather than placed in a context of learning styles theory. Notwithstanding that, there is value in a theoretical understanding where the opportunity for observation of students is more limited, and to provide the teacher with the ideas to more systematically observe and respond to style. There is value in encouraging teachers, through PD (professional development), to adopt a theory of style that they understand, can relate to, and that they can use in their teaching. The actual theory chosen matters little – what does matter is that the teacher feels comfortable with the theory and finds it useful in teaching. (p.2)

Despite the popularity in some quarters of Kolb, Honey and Mumford, debate continues around the world about the validity of these and other theories (Coffield, Moseley, Hall and Ecclestone 2004). In their recent systematic review of the literature on learning styles in the UK, Coffield et al. (2004) cast doubt on the validity of any theory of learning styles and question the value of pursuing a perfect tool for identifying learning styles, when there are more important questions for vocational education:

Why should politicians, policy-makers, senior managers and practitioners in post-16 learning concern themselves with learning styles, when the really big issues concern the large percentages of students within the sector who either drop out or end up without any qualifications? Should not the focus of our collective attention be on asking and answering the following questions?

- Are the institutions in further, adult and community education in reality centres of learning for all their staff and students?
- Do some institutions constitute in themselves barriers to learning for certain groups of staff and students? (p.144)

In addition to the debates and issues raised by learning styles, VET practitioners are being challenged by the use of the workplace as a common learning environment and the different ways learning can occur in the workplace. Tynjala, Valimaa and Sarja (2003) note that learning in workplaces is different from learning in educational institutions: it is often group-based, not individual, practical not mental, involves contextual reasoning more than symbol manipulation, and is situation-specific and not focused on generalised skills and principles. Appropriate learning and teaching strategies in workplace settings are discussed further below.

Individual learners' preferences for services and support

Much recent research in Australian VET about learners' preferences for services and support has focused on two areas: learners from equity groups and learners that use online learning. Diversity in the VET client base will always include equity groups. Bowman (ed. 2004) discusses approaches and frameworks that need to be developed to bring about further improvements in equity in VET. If adopted, some of these approaches and frameworks will require practitioners to develop additional skills. McIntyre, Volkoff, Egg and Solomon (2004) provide an understanding of the equity strategies of training providers. They note that limited research has been undertaken to identify and examine systemic issues associated with the provision of vocational education and training to equity groups.

Educational issues surrounding online learning such as quality, instructional design and teacher support systems are analysed by Harper, Hedberg, Bennet and Lockyer (2000), Brennan, McFadden and Law (2001) and Cashion and Palmieri (2002). This research indicates that learners participating in online courses will increasingly require considerable support and guidance from training providers supplying the online products and services.

Brennan et al. (2001) believe that a number of preconditions are necessary if the goal of improved learning outcomes for students in an online environment is to be achieved. The preconditions include taking into account differences in student backgrounds in every phase of the design and delivery of online materials and support and catering for the differences in learning styles and preferences of students. Other preconditions include a focus on the

communicative and interactive dimensions of the new environments and not expecting technology to solve all the hard problems. Brennan et al. (2001) suggest that teachers and trainers can be prepared to use new technologies flexibly and beyond minimum levels of competence and that teachers can focus on explicitly enhancing information literacy skills in students.

Moving beyond online learners, Misko (2000) identifies the following forms of support and guidance, believing them to be essential to the success of student participation in any form of learning: the need for supportive instructional activities; clear instructional materials; opportunities to discuss problems or issues with teachers and peers; availability of teacher support; timely feedback; practical examples; and enough time and willingness to practise skills and meet requirements.

Moynagh and Worseley (2003) suggest that, due to teacher shortages, future learning environments for post-16 learning will be tailored for individuals and small groups and could include virtual reality, intuitive modes of thought, larger learner-teacher ratios, more teacher assistants, self-directed learning, collaborative learning online, new forms of continuous on-line assessment, automated record keeping, and peer-led group work. Moynagh and Worseley (2003) predict that to overcome skill shortages in industry, and to equip older workers to stay longer in employment and to upgrade skills of the unemployed, learning will not be managed as in educational institutions, but will be managed in social centres and will be more like 'edutainment'. They also suggest that public providers will face increasing competition from private providers that are more orientated to the learner as a customer and that more training will be employer-led, designed to lead directly to jobs.

Preferences for teaching and learning experiences of industry clients

How employers perceive, use and value vocational education and training qualifications is an important, but also complex, issue, investigated by Townsend, Waterhouse and Malloch (2005). Their report captures the views of a small number of employers within fourteen different companies, over eight industries. The broad conclusion is that employers place high value on learning and capability and competence, irrespective of whether this leads to, or is reflected in, qualifications held.

Why and how enterprises use the nationally recognised type of training is examined by Smith, Pickersgill, Smith and Rushbrook (2005). They find that an enterprise's decision to engage in recognised training is not made lightly and decisions are made afresh each time a new training need arises. Successfully embedding training in enterprises involves a three-phase process - engagement, extension and integration. In most cases, it is dependent on positive initial engagement; extension of training through a 'VET evangelist' who 'sells' the benefits of recognised training and persuades management; and, integration of competency standards associated with recognised training into many human resource processes. The availability of funding strongly influences whether enterprises use recognised training. However, one of the key reasons why more enterprises have not taken up this training is lack of awareness.

As noted above, there is an increasing trend towards formally acknowledging learning in the workplace. Wood (2004) finds that fully on-the-job training, the majority of which is conducted in the workplace as part of the normal experience of the employee, is perceived to offer benefits to apprentices/trainees, employers and registered training organisations (RTOs). Wood finds that fully on-the-job training is viewed by learners and registered training organisations as a good way to learn as it provides flexibility for all concerned and financial incentives to employers. With appropriate support for learners, benefits of this type of training include learning that is customised, and learning that encompasses real work experiences and is relevant to the individual and the enterprise. On-the-job training also helps to identify ongoing employment opportunities for the learners and employers. Suggested areas for changes to on-the-job training include improving the following: the level of networking among students, the

levels of time management skills of learners, the balance between work and study requirements, the level of theory training, and the way trainees are valued in the workplace.

Despite the popular promotion of self-directed learning in VET, Smith (2000) shows that it is not suitable for all learners, including in the workplace. Apprentices are thought to generally prefer learning in structured environments that provide opportunity for direct social interaction with their fellow learners and with their instructors. These learners may exhibit lower preferences for learning through verbal means such as reading or listening. The strong preference of apprentices, as non-verbal learners, is for learning through hands-on experience, demonstrations and practice.

Boud (2003) suggests that vocational educators need to move away from seeing learning in and at work through the lens of traditional educational practice. Educators at the interface of education and work must look to the practices of work, and not attempt to force industry-based learners into a conventional educational view of the world (see also Harris, Simons and Moore 2005). But what educators do at the interface between educational institutions and workplaces will change substantially and there are and will be even more changes in practices in work involving new kinds of training practitioners.

An appreciation of different work experiences will have an impact on VET pedagogy, argues Griffiths (2003), who identifies different models of work experience. The traditional model of work experience involves launching students into the world of work, the generic model provides an opportunity for key skill assessment, the work process model involves assisting students in attuning to the context of work, and the connective model involves seeing work experience as a form of reflexive learning. Given these different models of work experience, Griffiths (2003) suggests that increasingly the connective model of pedagogy and learning in work based contexts should be developed. Businesses, educational and vocational institutions should respond by using and developing the connective model of learning through work experience by connecting formal and informal contexts of learning. These institutions can also provide mediation between formal and informal contexts of learning to achieve an effective relationship between institutional learning and workplace learning developed in a partnership between teachers and workplace trainers.

Preferences for services and support of individual learners in industry

As VET providers pursue the goal of providing customised learning services for each enterprise, practitioners are becoming more aware of the specific preferences of individual learners within enterprises for services and support. Mitchell et al. (2003) find that learners want services and support that lead to better outcomes and have the following characteristics:

Ensuring relevance. VET clients and customers increasingly want knowledge and skills that are marketable or relevant, either for organisations and their staffing demands, or for individuals to secure greater employability and choice in paid or unpaid work and lifestyle.

Ensuring personal service. VET clients also want skills to meet the growing demands for customising and personalising services.

Providing 'just for me' training. Increasingly, VET clients and customers want to develop these skills at times, in ways and at locations that suit them, not the VET provider.

Supporting 'learning in context'. Industry and enterprise clients want training designed in ways that suit their settings and needs.

Supporting performance support systems. With the use of technology and the speed of change, often formal training is deemed too slow or expensive. Semi-structured and informal workplace learning can and does fill much of this void. For example, large companies can design online systems to support the learning and performance when required, by providing step-by-step online help or support or redesigning the task to make formal training and learning redundant. (Mitchell et

al. 2003, pp.30-31)

Svensson (2003) suggests that learning environments in enterprises increasingly will be a responsibility of line managers, who will also provide individual workers/learners with access to mentors. The most important factors for learning environments are as follows: work and the organisation of work; an open culture for sharing information and knowledge through mentoring; collaboration in teams and projects; and networks that are face-to-face or conducted through ICT.

Stephenson (2001) examines a holistic approach to workbased learning, based on the concepts of individual and corporate capability. He argues that capable individuals, and the organisations within which they work, have a mutual interest in continuous development within changing environments which can best be served by a shared commitment to autonomous learning (p.86). However, Stephenson finds that the ideal of a holistic approach to workbased learning presents many difficulties:

The implications of giving learners greater responsibility for their learning through work, and providing the necessary support for them to do it well, require teachers, line managers and external agencies to adjust the way they operate and the services they offer. (p.100)

One way to provide support for learning in the workplace is to encourage the development of communities of practice among the learners. Communities of practice are defined as:

groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis. (Wenger, McDermott and Snyder 2002, p.4)

VET practitioners as learners have demonstrated the usefulness of communities of practice:

International experience suggests that benefits of Communities of Practice for individuals include the fostering of trust, improvements to their professional lives, access to new knowledge and an increased ability to manage change. The analysis of the VET 2001 Communities of Practice showed that the benefits matched the theory: the communities fostered communication and sharing and linked the members to new knowledge, while also concretely enhancing the work of the VET professional. (Mitchell 2002, p.7)

Sounding a cautionary note, Hodkinson and Hodkinson (2004) acknowledge that the community of practice is an important theory in terms of workplace learning, but it tends to downplay the role of off-the-job learning, overlooks issues of social power and inequality, ignores the possibility that workplace learning can be effective in promoting poor or unethical practice, and tends to see on and off the job learning as different forms of learning. Huysman (in Tsoukas and Mylonopoulos 2004) accepts that communities of practice foster social learning within an organisation by providing “a suitable ‘non-canonical’, non-hierarchical, informal and flexible surrounding” (p.68), although communities of practice sometimes obstruct or frustrate organisational learning, that is, learning by organisations.

Summary

A number of the critical issues identified in this section are as follows. One critical issue for contemporary VET is meeting the increasing demand for the customisation and personalisation of training services. A second critical issue for the teacher is developing a position on learning styles, including gaining the following: a deeper understanding of individuals' learning styles and preferences; an improved awareness of his/her own approach to learning styles, as a teacher; and a clear appreciation of the debates around learning styles. A third critical issue is effectively providing services and support for different learner groups such as learners from equity groups and learners in the online learning environment. A fourth critical issue is practitioners understanding the many different ways learning can occur in workplaces, especially when the training only occurs on-the-job and often in an informal manner. A fifth

critical issue is the development of partnerships between external teachers and enterprise based managers and trainers, to address the needs of both the employer and the employee. This brief summary of critical issues demonstrates that the environment in which VET practitioners operate is becoming increasingly complex.

2. Skills and resources needed by VET practitioners

This section of the literature review addresses the following question: What skills are needed by VET practitioners in the design of learning programs and resources and in the provision of assessment services to meet the needs of different client groups, and how might these be developed most effectively?

Introduction

New skills and resources are needed in VET to implement creatively competency-based Training Packages, particularly by teachers and trainers schooled in the previous paradigm of teacher-dominant, classroom-based instruction. New skills and resources are needed to take advantage of the options created by new digital technologies, such as broadband transmission and mobile telephony. New skills and resources are needed to meet the challenges of teaching, learning and assessing in each and every workplace.

New skills and resources are needed because there are different types of learning, for example: deep versus surface level learning, informal and formal learning, self-directed and structured learning, and learning focused on technical skills and learning focused on generic skills. Each of the different types of learning has implications for program design and for the skills required by teachers and trainers. Each of the different types of learning impacts on VET providers and systems.

New skills and resources needed to implement Training Packages

Schofield and McDonald (2004) argue that RTO staff still face confusion about how to work with competency-based Training Packages even though the Packages are the basic building blocks of the national training system. They highlight the need for more skills for practitioners in the design of VET learning and assessment strategies:

Training Packages assume a high level of competence within an RTO to facilitate valid training delivery and assessment, as the implementation of Training Packages is even more important than improving them as 'products'. However, we find an unacceptably high level of confusion amongst educators in particular about the relationship between Training Packages and teaching, learning and assessment. Even after six years, many do not seem to understand how Training Packages work, or how to work with them. This is a key issue that demands attention in order to achieve improvements in the quality of teaching, learning and assessment practice. (p.5)

Further, Schofield and McDonald (2004) find that the current compliance framework of the Australian Quality Training Framework (AQTF) is a necessary but not sufficient means of ensuring good quality teaching, learning and assessment. They argue that what is needed is 'a capacity-building approach that emphasises quality, creativity, professional judgement and growth rather than simply compliance' (p.5).

Mitchell, McKenna, Perry and Bald (2005) respond to the concerns expressed by Schofield and McDonald (2004) by identifying teams of VET practitioners who apply professional judgment in implementing Training Packages, leading to the enhancement of teaching, learning and assessment in the sector. Project teams analysed by Mitchell et al. (2005) provide examples of creativity in the following ways: implementing a qualification not previously offered in a local region; embedding sustainability principles in the delivery of Training Packages; integrating employability skills in training; and establishing a simulated working production company for

the delivery and assessment of a Training Package. Many similar work-based learning teams around Australia also demonstrated creativity in analysing assessment issues, in developing new approaches to the recognition of prior learning and in designing new assessment instruments.

Waterhouse and Virgona (2004) note that generic skills play a very significant role in the transfer of skills and successful employment in the industry areas they studied. However, they observe that VET sector trainers need new skills, understandings and resources to work with generic skills in ways that will empower their learners. In enterprise workplaces, VET practitioners need to be more flexible, take the initiative and undertake a range of different tasks, particularly as there is a stronger emphasis in workplaces on both information and social skills (Gibb and Curtin 2004). Some of these skills can be developed in formal training programs, but other skills can be developed more effectively by VET practitioners' immersion in various workplaces.

New skills and resources needed to use ICT

In addition to the challenges raised by the implementation of Training Packages, multiple challenges are posed by the possibilities created by information and communication technologies (ICT). Rapid innovations in ICT have led a number of commentators to propose that the age of virtual learning environments has arrived. The increasing capacity of digital technology to deliver large amounts of visual and text based information to consumers at-home and on-demand will raise the expectations of learners for these technologies to be incorporated into learning programs.

A substantial European study of learning futures by Moynagh and Worsley (2003) proposed that although there will always be a place for teachers to have direct face-to-face engagement with learners, ICT will transform the context in which this engagement takes place. ICT developments will lead to collaborative and more independent learning among students. Learning will be more self-paced and personalised. New forms of assessment will be made possible as automated record keeping enables the effective and efficient use of continuous, self, group and peer assessment. Different learning styles will be more easily catered for. Visual learners, for example, will be able to access a greater richness of visual material. Different modes of thinking will be encouraged in virtual learning environments, including intuitive modes of thought and thinking in parallel rather than thinking sequentially. As ICT is a platform for both entertainment and education, in the future disaffected learners may well be more engaged with learning organised as 'edutainment'.

With education influenced more and more by ICT, information management strategies will become increasingly important and teaching strategies will need to emphasise learning processes rather than learning outcomes and social learning rather than individual learning (Barajas 2003). Further social and self-management skills and other meta-cognitive abilities are more likely to be developed through ICT-based learning.

The increased use of ICT presents a raft of challenges for VET providers, not least in terms of the changing human resources required (Barajas 2003; Palmieri 2003). Specialist staff including courseware designers, call centre, multimedia, animation and technical staff will be needed in addition to teachers and trainers (Moynagh and Worsley 2003). ICT developments will also demand the full institutional integration of ICT by VET providers and the development of networked partnerships with community centres, libraries and museums (Moynagh and Worsley 2003). To function effectively in a changing environment that includes the convergence of online learning and e-business, VET managers will need an increasingly sophisticated conceptual framework and set of business skills that appropriately draw on contemporary business management theory and practice (Mitchell 2004c).

The increased use of ICT will also impact on educational resources. Local and regional multimedia resource centres will be needed to maximise access and support for learning outside

of institutions (Cullen 2003; Svensson 2003). Help desks and centralised call centres will also have an increasingly important role in terms of student support (Moynagh and Worsley 2003). This in turn will require greater collaboration between VET providers, particularly small to medium size RTOs, in order to cover the substantial costs involved in developing and maintaining ICT infrastructure and to alleviate the predicted shortage of qualified staff.

New skills and resources needed for workplace learning

Workplaces are contested domains, manifested in relationships between workers and management, within and between work teams, in the division of labour and among affiliated groups in the workplace, argues Billett (2001, p.7). There are also divisions premised on gender, age, affiliation and ethnicity. Billett finds that this contestation can result in the inequitable distribution of opportunities for learning and, to guide practice, he calls for the development of a 'pedagogy for the workplace' (p.5). For learning in the workplace to be viewed as worthwhile in its own right, this pedagogy 'needs to articulate how the long-valued contributions of workplace experiences can best be utilised.' (p.5)

While Wood (2004) notes that learning at work is attractive both for employers and learners, Boud (2003) is in agreement with the view of both Stephenson (2001) and Billett (2001) that learning at work represents a major challenge for teachers and trainers. Boud reports on a series of workshops he conducted with work-based learning advisers in Australia and UK to elicit the conceptual knowledge and skill base they used in their practice. The knowledge and skills included:

Learning consultancy - Educational consulting and supervision skills, including negotiating learning, fostering forms of support for worker-learners and demystification of academic discourses.

Work and context -Refers not only to understanding the culture and politics of workplaces, but being able to locate learning in the environments which actually are faced by worker-learners.

Transdisciplinarity -Being able to operate in knowledge environments in which disciplinary and professional knowledge is not dominant. This includes helping learners with the identification of appropriate communities of practice and drawing knowledge from experience.

Enquiry - The cluster of methods and methodologies that can be used for learning projects in work.

Reflexivity and reviewing - Refers not only to one's own reflexivity in learning but in helping others identify what constitutes good practice and find ways of judging their achievements and in documenting learning outcomes.

Boud (2003) also notes that there was a very strong emphasis from workshop participants on knowledge brokerage, on assisting others to plan and monitor and generally on promoting learning how to learn.

Faced with a more diverse range of learners, Dare (2001) suggests that teachers should embrace the idea of multiple intelligences. That is, learners are seen as having collections of aptitudes rather than single measures of intellectual capacity. This links to the suggestions by Chappell et al. (2003) that constructivist and contextual models of learning are more appropriate in work-centred learning environments.

In considering workplace learning, Hager (2003) promotes the benefits of viewing learning as a process, as opposed to a product. Viewing learning as a process enables 'productive learning', which has the following four dimensions: productive learning re-defines existing patterns and rules; productive learning involves the creation of new learning that simultaneously reshapes the environment in which the learning occurs; productive learning involves the social, cultural and political construction of individual identities; and productive learning centres on holistic, whole-person, embodied judgments. (p.7). Productive learning in the workplace encourages

practitioners to consider the construction metaphor, 'with its tripartite focus on the construction of learning, of learners, and of the environments in which they operate' (p.6). This view of workplace learning has implications for VET practice, requiring practitioners to be responsive to the three factors of learning, individual learners and contexts.

New skills and resources required for assessment services

Central concerns by the Australian VET sector about assessment remain largely unresolved, despite the extensive effort put into them over the last fifteen years (Booth 2003). Rather than a concentration on the broader issues relating to assessment quality and consistency, currently there is more reflection on specific aspects of the assessment process. Three issues in particular dominate current writing and research about assessment: the assessment of learning that takes place in the workplace, issues related to the recognition process, and the grading of performance within the context of a competency-based system. These issues are discussed below.

Assessment of workplace learning

A key issue in the assessment of learning in the workplace is the development of an agreed position about what 'ought' to be the focus of the assessment process. Within this broad question are a number of more specific issues that the literature raises.

The first of these issues is the balance to be struck between a focus on a holistic understanding of the competency to be assessed versus its more detailed explication in Training Packages or similar documents. An exploration of the situation in New Zealand by Hoy-Mack (2004), found that candidates tended towards a more holistic understanding of the competencies but that their assessors typically took a more 'atomistic' approach that focused on individual elements and criteria. This appears to apply also in Australia where CURVE and the University of Ballarat (2003) commented that there is an inadequate understanding amongst many practitioners of the basic principles of assessment practice and a lack of clear guidance in published curriculum materials.

A second issue is the extent to which the competencies defined within Training Packages are assessable only within actual workplace contexts. The consultants preparing the final phase of the High Level Review of Training Packages (Schofield, McDonald and Leary 2004a, p.7) identified the high level of dissatisfaction with the assumption in many specifications that the competence must be assessed only in the workplace and argue that practitioners needs to be given much clearer guidance about the conditions and outcomes that are actually needed as against those that might be ideal.

A third issue is raised by Hager (2004) who argues that assessment has become increasingly focused on product or outcome rather than being concerned with process. He argues that, especially in the context of contemporary work, the importance of process is such that it needs to be explicitly addressed by assessment regimes and that it is inappropriate to merely infer its presence. Other researchers also argue for a more broadly-focused conception of what is to be assessed and of the methods that ought to be applied. Poikela (2004) emphasises the importance of context and of contextual-knowing but acknowledges that these are often overlooked by current assessment practices. A different, but not inconsistent, view of assessment as a learning activity is presented by Boud and Hawke (2003). They call for an assessment approach that includes a greater emphasis on self-assessment but also requires the learners to become more critically aware of the standards that underpin their assessment and the reasons why those standards are being applied.

Clayton, Blom, Bateman and House (2004a), in their research into assessment confidence, note that assessors value opportunities for professional exchange with other assessors through a structured assessment validation process which they feel provides a viable means of achieving quality and consistency. Since the introduction of the Australian Quality Training Framework

(AQTF), RTOs have been required to establish processes for validating assessment which in many instances have included groups of assessors meeting and engaging in benchmarking or moderation processes. There has been no broad-based investigation into the impact of this increased activity – often perceived by assessors as valuable professional development – on the quality of assessment.

‘Professional conversation’ is a term used by Deveraux and adopted by Maxwell (2001) to describe one of the most commonly used methods of a participatory assessment validation process where assessors develop their reflective and analytical skills in reviewing their practice. Deveraux (1997, 1999) used the term ‘professional conversation’ to describe a participatory process between assessor and candidate where the student is more integrally involved in designing an effective means of providing the required evidence. If candidates are to be able to be engaged in this process, they need to have a clear understanding of the standards and what is required, but the reflective skills required would contribute to their lifelong learning.

More involvement of candidates in decision making and feedback on the assessment process is an obvious extension of the current interest in learner-centred approaches. According to Clayton et al. (2004a), assessors interviewed in their study believed that students need to be involved in the process of deciding what form of assessment is used. In addition, they felt it important that quality assurance involves a feedback loop, thus gathering information from candidates about the process.

Clayton, Blom, Meyers and Bateman (2003) looked at the issues involved in the assessment of generic skills. They felt that practitioners need clear directions as to which generic skills should be fostered and assessed, and how this should be accomplished. They advocated revision of the way that generic skills are incorporated into training packages, to make them more explicit. They also emphasised a need to improve the level of guidance to practitioners which would help to minimise inconsistent generic skills assessment.

Recognition of existing competence

Debates about the importance and application of the recognition of pre-existing competence have continued since the early 1990s with little agreement being reached within the sector. Blom, Clayton, Bateman, Bedggood and Hughes (2004) and Booth and Roy (2004) highlight that the initial expectation that recognition alone would significantly address Australia’s skills needs and equip the workforce for the needs of the contemporary workplace were misjudged. They argue that, while the opportunity for recognition is important, it should be seen as only one component of a more diversified strategy including improved access to training.

Blom et al. (2004) find that recognition of prior learning is a crucial element in lifelong learning, but note that limited information exists about skills recognition implementation and outcomes within Australian enterprises. This study examines the nature of skills recognition within individual enterprises, including the processes employed, strategies in place for promotion and support, and perceived benefits for enterprises and employees. It finds a ‘one-size-fits-all’ approach to recognition is rarely effective, but should be linked to the enterprise’s overall business and training plans, which ensures it evolves as part of the organisations’ needs. Notably, employees were happiest with the process when they were well supported:

Employees expressed strongest satisfaction with recognition where they had experienced good support throughout the process, especially where they had been matched with mentors, or where assessors had made themselves available for consultation prior to conducting the recognition assessment. (p.7)

In their study of the recognition of prior learning (RPL) within enterprises, Blom et al. (2004) reinforce the generally accepted view that effective RPL processes are complex and require ‘extensive infrastructure and a significant commitment to the process from all stakeholders’ (p. 4). For example, another researcher looking at RPL in the classroom context noted that ‘complexity, as well as the appearance of complexity, appear to be major disincentives for students seeking RPL’ (Smith 2004, p.5). After an extensive analysis of the advantages and

disadvantages of RPL, Smith concludes that effective RPL 'requires experienced professional assessors able to make informed professional judgments' (p. 29). Indeed the importance of truly 'professional' assessors is a recurring feature of Smith's case studies and he argues that an important focus of RTOs and the system should be to confirm 'the capacity of the assessors to make credible industry-supported judgments' (p. 26). Smith's respondents expressed the view that current arrangements are attempting to provide 'quality control for assessors who do not have the professional competence to make valid professional judgments', and in so doing, are actually 'undermining the capacity of good providers to conduct RPL in a highly valid and cost-effective way' (p.26).

Bowman et al. (2003), in their national review of RPL implementation, confirm the findings of Smith (2004) and that of Blom (2003). In this report, a critical issue for RTOs was that of the skills of assessors conducting RPL, especially related to their ability to make judgments based on diverse evidence.

Grading

The issue of grading performance has been a central one ever since the Australian VET system became competency-based in the early 1990s. The key question has been whether or not there is value in differentiating levels of performance above the minimum standard for competence and, if so, by what means (Schofield et al. 2004a). A survey of the state of play by Williams and Bateman (2003) found the following:

The research has identified that 'good' practice in competency-based assessment itself, let alone graded competency-based assessment, is still not fully understood nor universally implemented across the national training system. (p. 5)

Their study recommended that a set of agreed principles be established within which graded assessment should occur. The recommendations included the following: the choice to grade should be at the discretion of the RTO; graded assessment should be criterion-referenced; it should only be applied once competence is determined; and it should be easily understood by both the assessor and the person being assessed. They also recommended that Training Packages should – where appropriate – identify grading schema which reflect content-specific criteria and that appropriate validation processes, such as consensus moderation, should accompany a graded assessment system. Most significantly, the report concluded that, given the poor understanding of assessment principles that is common across RTOs, initial and 'ongoing professional development in graded assessment techniques and methodologies ought to be provided for new and existing trainers or assessors' (p. 7).

One model of graded assessment that is widely identified as providing a workable example is that mandated by the Western Australian Department of Training (2002). This model and other research by Bateman (2004) highlight the importance of expert judgement and a sophisticated understanding of both the content and practices of the area being assessed but also the importance of the assessor's understanding of assessment processes and the importance of communication of assessment outcomes. Another model developed by Griffin, Gillis, Keating and Fennessy (2001) is gaining credence (Williams and Bateman 2003) and supports the findings of Bateman (2004). This model relies on expert judgement in terms of developing a standards referenced framework to describe and determine levels of performance.

Supporting assessors

The issue of assessment practice became a more critical one with Australia's shift to a competency-based system of vocational education and training. However, while many examples of excellent practice can be identified, the recent literature makes it clear that despite the rapid increase in the number of assessors working in the VET sector there has not been a similar increase in awareness of the significant body of theory and knowledge that underpins assessment. The demands of contemporary work have increased the pressure for assessment practice to be flexible and comprehensive and this further increases the need for a well-educated

workforce of assessment practitioners and a substantially-improved system of documentation and guidance.

Schofield and McDonald (2004) believe that, to enhance the professional growth of assessors, consideration should be given to 'ways of developing a stronger sense of professional identity' and to 'provide better professional guidance to teachers and assessors at a pedagogical level' as well as 'encourage robust national dialogue around alternative pedagogies and assessment practices' (p. 29). Earlier, Stowell (2000, p.124) recommended that opportunities be created for VET practitioners to participate in professional dialogue and undertake moderation activities including a common understanding of the standards, evidence requirements and assessment practices.

Assessing generic competencies is linked closely with the raised awareness and dialogue of generic or employability skills across the training system. Schofield and McDonald (2004) consider that the inclusion of generic skills is a significant design issue for Training Packages and that providers treat these skills inconsistently. There is currently no agreed mechanism for delivering, assessing or recording. Clayton et al. (2003), in their review of assessment practice relating to generic competencies, note that there is nothing unique in the assessment of generic skills, however these skills are less explicitly described in the Training Package and key competency levels are difficult to determine. They note the potential for invalid judgements in this area. Clayton et al. (2003) consider that to address the VET practitioners' need for assistance in assessing generic competencies, the following is required: better information to support assessment decision-making; extensive understanding of generic skills; and professional development to support their own skills, knowledge and attitudes.

In terms of including levels of performance in a competency based assessment system, Griffin et al. (2001) consider that professional development is critical for the implementation of a graded assessment model – that is, standards referenced framework – but emphasise the role of moderation and its importance in achieving comparability of assessments. Williams and Bateman (2003) emphasise the need for up-front and on-going professional development, but also consider the quality assurance strategies such as exemplars and moderation.

In considering professional development for assessment as well as teaching and learning, CURVE and University of Ballarat (2003) acknowledge the diverse needs of VET practitioners and recommend a range of products be developed, covering such topic areas as working with Training Packages, catering for individual learner differences, learning theory, teaching skills, supporting generic skills development, language and literacy, implementing flexible approaches, workbased learning, design and modification of resources. They also recommend mechanisms for supporting enhanced teaching and learning practice, including networking, mentoring by designated champions, communities of practice, action learning as well as formal professional development.

Summary

Firstly, this section focused on the skills needed by VET practitioners in the design of learning programs and resources. One critical issue is that many VET practitioners need enhanced skills in implementing Training Packages, despite their widespread availability in the sector in some cases for six-seven years. Another critical issue is that VET practitioners need skills to take advantage of the new digital technologies that become available each year. An additional critical issue is that VET practitioners need skills and resources to provide effective support for learning that occurs in the workplace. Each of these three critical issues has vast dimensions.

Secondly, this section focused on the skills needed to provide assessment services. A critical issue for VET practitioners is determining what ought to be the focus of the assessment process, such as a focus on outcome or process. Other critical issues include how best to provide services for the recognition of current competence, whether to grade performance, and how to provide support for assessors. Each of these issues remains the subject of debate within the

sector.

Thirdly, this section focused on how might practitioners develop these new skills. Given this range of new skills required in VET, practitioners will need to use a variety of different ways to develop these skills. Mitchell, Henry and Young (2001) advocate that workbased learning be used extensively for staff development in VET, based on a revised and augmented definition of workbased learning that takes into account new thinking about adult learning and learning organisations. Workbased learning can involve coaching, mentoring, networking and participating in communities of practice. One workbased learning strategy that encourages collaboration and sharing between peers is the professional conversation.

3. Implementation of innovative approaches

This section of the literature review addresses the following question: What are the critical success factors – individual, organisational and systemic – for VET providers in developing and implementing innovative approaches to teaching, learning and assessment, and how might models about good practice be most effectively transmitted?

Introduction

This literature review indicates the need for a wide range of different types of innovation to suit the learning needs of individuals as well as the needs of enterprises and industry. The review also recommends different ways to transmit good practice, from publications of case studies through to staff development activities involving mentoring, networks or communities of practice or other action learning activities. The staff development may be either formal and structured or informal and unstructured or a mixture.

Critical success factors – individual

Guthrie (2004) summarises recent research about the changing roles of VET leaders, managers, teaching and support staff, and the way they work. The role of senior managers is increasingly focused on the external environment and building links with stakeholder organisations. Front-line managers focus on internal business practices and how to modify these to meet new clients' needs. The role of VET teachers is becoming more diverse and team-based. Within these teams, teaching support staff play a critical part. The publication also summarises a range of human resource and professional development issues, identified by VET staff, which need to be tackled to help them work more effectively in the future. Guthrie portrays the breadth of different VET practitioners and implies that each group actively needs to develop new ways of working, if VET is to meet the increasing demands for timely and relevant training.

Mitchell et al. (2003) note that the workplace training demands arising from the industry-led national training system are bringing about new and intensified professional, technical and educational roles for VET practitioners especially at the frontline and particularly for teachers, workplace trainers and assessors, workplace mentors and supervisors (p.1). The report finds that innovation is assisted when VET practitioners consciously adopt new roles such as those of learning manager, facilitator, mediator, broker or strategist (p.2). The research also shows that innovative practice is assisted when practitioners draw on some or all of four areas of their professional expertise, such as:

...their vocational skills, for example in tourism or engineering; their adult learning and teaching skills such as how to support problem-based learning; their VET sector specific skills about how to assess in the workplace; and their generic personal skills such as managing their own personal and professional growth. (p.2)

They also find that innovation can occur when practitioners use a variety of teaching and learning strategies: for instance, when they skew teacher-centred methods towards student control; when they support self-directed learning; when they facilitate activity-based and problem-based learning; and when they enable students to develop future-oriented capabilities (p.2).

Critical success factors – organisational

Within RTOs, a strategic response by the organisation's senior management to internal or external pressures can foster innovation in VET teaching and learning and assessment (Mitchell et al. 2003, p.2). Externally, the RTO's management 'can also foster innovation by forming external networks and alliances' (p.2). Within RTOs, organisational strategies that can directly foster innovation in teaching include the following: 'developing a corporate culture that is agile and flexible and encourages diverse thinking, individual initiative and the development of new ideas' (p.2). Additionally, tapping into the social capital of colleagues 'stimulates innovation in teaching, as does encouraging knowledge management that is based on practitioner knowledge' (p.2)

Other principles influencing innovation within organisations include the principle that innovation is often the result of the interplay of individuals, groups and organisations with particular situations including imperatives, problems and issues that cause enough irritation to require new ideas and practices to fix. Innovation can be driven by multiple factors, including the individual's motivation for improvements, organisational goals and encouragement, external forces such as changes in industry, expediency or happenstance, the demands of enterprises or the preferences of individual students. Innovation can be facilitated or hindered by a range of organisational factors such as the organisation's structure, culture, planning strategies and communication systems. Innovation can be supported by certain styles of leadership. Innovation can be assisted by judicious management interventions or initiatives. And innovation can be facilitated by change agents at any level of an organization (Mitchell et al. 2003, pp.101-103).

Callan (2004, pp.27-28) provides a number of practical, relatively cost-effective strategies that VET organisations might adopt to increase their levels of innovation, including encouraging staff to attend conferences and workshops; bringing in outside experts; providing seed funding for new projects; promoting partnerships that allow the organisation to develop its skills and knowledge; using cross-functional teams to resolve whole-of-enterprise issues; encouraging communities of practice; implementing recognition programs; and encouraging innovative ideas from students.

Critical success factors - systemic

The respective roles and responsibilities of ANTA, State Training Authorities, RTOs and individual practitioners for providing quality teaching, learning and assessment resources have become blurred, according to Schofield and McDonald (2004). They suggest that, perhaps as a result, 'State/Territory and RTO facilitation of better teaching, learning and assessment has been patchy – although there are some important exceptions' (p.28). They also caution about the call for more national resources:

Although we agree with Down and Stewart (2001) that the implementation of Training Packages involves an ongoing process of staff development and capacity-building, calls for more national resources and for more national professional development should be treated with caution. National effort should be directed to national co-ordination, to those areas which complement State /Territory, RTO and individual effort in which there is a strategic national interest in doing so. We suggest that assessment is one such area. (p.29)

The availability of assessment expertise is critical:

The availability of widely distributed assessor expertise is critical to the success of the Training Package model. The basic need now is for increased emphasis on professional judgment by assessors combined with stronger mechanisms to ensure the validity, reliability and consistency of assessment. (Schofield and McDonald 2004, p.28)

They also suggest that more needs to be done to promote the application of technologies to support flexible Training Package delivery through blended learning incorporating e-learning

options (Schofield and McDonald 2004, p.29).

Other systemic initiatives recommended are as follows:

Resource materials – explore the feasibility of developing a National Assessment Bank, and consider options for better coordination of multiple existing resource repositories

Professional growth – consider ways of developing a stronger sense of professional identity; build the capacity of training managers; provide better professional guidance to teachers and assessors at a pedagogical level; encourage robust national dialogue around alternative pedagogies and assessment practices in a Training Package environment; and consider how the Australian Flexible Learning Framework could further contribute to enhancing teaching and assessment

Assessment – trial innovative approaches to sharing of successful approaches among practitioners, and explore ways in which more support can be given to encourage individual industries to strengthen assessor networks. (Schofield and McDonald 2004, p.29)

Schofield and McDonald (2004) also advocate research into Training Packages as well as a nationwide and multi-year research program examining new pedagogic practices and possibilities to facilitate the implementation of Training Packages (p.34).

Mitchell et al. (2003, p.3) find that VET systemic factors can both foster and impede innovation, depending on the context and the perspectives of those involved. For example, in some situations the audit and compliance aspects of VET are seen to be dampening innovation, but in other situations staff and their RTOs are innovative despite such constraints. Mitchell et al. (2003) find that it is not desirable or possible to offer a simple formula for how to foster and sustain innovation in teaching and learning and assessment in VET because there are too many complexities involved (p.99). Despite, or possibly more accurately because of the complexities involved in actually achieving innovation in widely different VET localities, the actual processes of innovation appear to require practitioners to draw on extensive professional judgment, experience and wisdom by (p.100).

While Mitchell et al. (2003) resist identifying critical success factors as simple principles, they find it is possible to identify an initial conceptual framework for reaching a better understanding of what is involved in supporting innovation in VET teaching and learning and assessment. Their recommended framework includes a range of challenging points, beginning with the finding that innovation can be significantly enhanced by a deep knowledge of learners, learning styles, teaching strategies and learning sites and contexts. Innovation also can be significantly enhanced by a deep understanding of assessment. Innovation can be stimulated by deliberate, intentional activities, such as conducting group discussions between VET practitioners and others to generate new ideas and to encourage research and reflection. Innovation can't be forced upon VET practitioners, so skill and wisdom is needed to nurture innovation. Innovation can be affected by local, contextual factors such as the nature of the teachers' work groups, work leaders and managers, the nature of the workplace, the nature of the enterprise client or the nature of the local community or region. Finally, innovation can occur despite the lack of ideal support or pre-conditions or documented market demand (pp.100-101).

Down (2002) focused specifically on the innovation of implementing Training Packages and found that many of the impediments have less to do with the actual nature of Training Packages than the contexts into which they are being introduced:

Past practice, strong and long-held beliefs about how training should be specified and delivered, resistance to change, funding and resourcing issues, collateral change processes and conflicting priorities and a lack of appropriate educational leadership have all had a negative impact on the implementation of Training Packages. (p.10)

She then points to the need for systemic changes to policy, compliance and leadership:

Unless policy directives and compliance measures are reinforced by strong leadership, aimed

at converting the hearts and minds of practitioners and giving them ownership and confidence in the change, superficial compliance rather than the desired change will result. Much of the data collected and analysed reflects a VET system struggling to give the appearance of compliance rather than one embracing a whole-hearted acceptance of the change. (p.10)

Dickie et al. (2004) focus on high-quality professional practice among VET practitioners and believe that more emphasis should be placed on workforce development. They suggest the following activities as part of a national approach to add value to professional practice within the VET sector:

- Capturing good professional practice in such a way that examples of good practice can be more widely shared.
- Identifying skills for key roles by drawing on research to develop a set of broad capabilities for key roles - such as novice, expert and master teacher/trainer, industry professional, manager and leader, and support staff - and guidance about how they might be used by professionals, practitioners, providers and industry.
- Reviewing relevance of university qualifications in teaching, focusing in particular on course content, effectiveness and standing of university qualifications, RPL mechanisms, articulation issues, and feasibility of establishing national consistency.
- Exploring standards, including initiatives across jurisdictions relating to professional standards, ethics and principles for VET practitioners; and identifying whether additional action is needed at a national level, for example to develop an agreed set of ethics and principles for VET practitioners.
- Exploring professional associations, including options for optimising the support and guidance for VET practitioners of the sort that are usually offered by a professional association.

Critical barriers

There is a range of barriers to implementing innovative practices in VET organisations, as implied throughout this literature review, particularly by Schofield and McDonald (2004) and Dickie et al. (2004). The critical barriers include lack of funding, lack of clear policy guidelines at systemic level, lack of structures and processes within organisations, lack of experience of practitioners in innovation, and staff working conditions. Dickie et al. (2004) emphasise the low level of investment in people:

....evidence indicates that the VET system has under-invested in human capital - spending less than half the level of other high-performing industries and organisations - and that demand for funding for workforce development initiatives consistently outstrips supply of resources.

In researching the practices of highly innovative VET organisations, Callan (2004) found that the development of innovation in the VET sector is uneven:

There appears to be little evidence that VET organisations have established either well-developed capabilities for innovation or clear structures for rewarding innovators. Given the financial and operational constraints faced by organisations in the VET sector, this is understandable. (p.6)

Callan advocates that the VET sector 'needs to be serious about building and funding innovation learning cultures and promoting innovation as a core capability within their enterprises' (p.6). He continues:

Failure-tolerant leaders of VET organisations need to be even more creative in how they continue to support and reward their leading innovators and educational entrepreneurs. (p.6)

Mitchell et al. (2003) highlight the complexities of innovation, often affected by multiple drivers, requiring the use of a mix of skills by a number of contributors. Hence it is easy for innovation to be impeded:

innovation in teaching and learning can be impeded by countless factors, such as managers ignoring client pressures for innovative delivery or overlooking the social capital of staff or discounting the value of the staff knowledge of industry and staff networking with members of the industry. Other factors impeding innovation include a lack of resources, staff resistance, student opposition and an inability to convert creative ideas into innovative services that can be implemented. (Mitchell et al. 2003, pp.2-3)

Implementing innovation is made all the more complex because of VET's role as an instrument of social and industrial policy and change and the challenges it faces in meeting national, state and territory, regional goals and the needs of particular industries, industry sectors and local employers and the balancing of all of this. The need to balance these different factors impacts on the nature of the VET providers, and therefore their approaches to delivery.

Ways of transmitting models of good practice

The VET sector needs highly informed practitioners who know about successful practice elsewhere in the sector and can match this with appropriate innovations of their own:

Identifying good practice is a key to fostering innovation as it profiles champions and also encourages the creation of collaborative mechanisms to further explore good practice and set realistic standards for success. (Mitchell et al. 2003, p.103)

Practitioners will benefit from the development of a national 'mechanism' for disseminating information about innovation in VET teaching and learning and assessment to keep up with changing practice at and around the frontline of innovation in VET:

VET practitioners would benefit from arrangements that give them better sources of information, knowledge and understanding of changing teaching and learning practice across the sector. (Mitchell et al. 2003, p.103)

Making practitioner information more readily available can support VET professionals to position their own thinking and practice closer to contemporary changes in VET professional practice. This can help to ensure that innovation, in whatever form it then takes, 'will continue to contribute positively to the development of teaching and learning outcomes across the sector' (p.103).

Some specific ways to transmit models of good practice are to access communities of practice and networks that involve VET practitioners and other stakeholders. Communities of practice can be a vehicle to disseminate examples of effective practice, because they are designed to manage critically useful knowledge and the systematic processes by which valuable knowledge is created, captured, shared and leveraged (Rumizen, 2002, p.9). Networks are also useful mechanism for disseminating good practice, because networks are the basis of knowledge sharing in many organisations and, through trusting relationships, networks increase the level of knowledge (Cohen and Prusak 2001).

Other practical strategies for disseminating information about practice are identified by Scott (1999) and include: connect appropriate researchers with practitioners in the field; ensure that organisational rewards, incentives and structure support action research and continuous enhancement in innovation; adopt a variety of non-traditional staff development strategies, including staff exchanges; identify key people with dissemination and utilisation skills in the workplaces of each participating organisation; and use electronic learning networks.

Summary

Firstly this section considered the critical success factors – individual, organisational and systemic – for VET providers in developing and implementing innovative approaches to teaching, learning and assessment. For individuals, critical success factors include adopting new work roles such as learning manager, facilitator, mediator, broker or strategist. For VET organisations, critical success factors include developing a culture that is agile and flexible and encourages diverse thinking and individual initiative. For the VET system, critical success factors affecting innovation include developing more resources for teaching and learning and assessment, facilitating practitioners' development, changes to policy, and the promotion of creativity rather than a primary focus on compliance.

Secondly the section acknowledged critical barriers to the implementation of innovative approaches. The barriers include lack of funding, lack of clear policy guidelines at systemic level, lack of structures and processes within organisations, and lack of experience of practitioners in innovation. As there are many complexities involved in innovation, barriers will invariably arise and will always need to be addressed.

Thirdly the section suggested how models about good practice in innovation might be transmitted. Strategies can range from tapping into networks to offering staff incentives for continuous innovation to fostering people with dissemination skills.

Overall themes

This final section reinforces a theme which was announced in the preamble and infuses each section of the literature review, that the environment for VET is changing, increasing the need for VET practitioners to develop new skills in teaching, learning and assessment. This final section reinforces another theme implicit in the review: the value of collaboration across the sector. To develop the new skills in the most effective manner and to disseminate examples of innovation, efforts are required from different parties – individual practitioners, VET organisations and VET systems – and these efforts ideally will be collaborative.

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