

Contemporary vocational learning – changing pedagogy

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Abstract

Changes taking place in industry, the labour market, work and work organization together with changing conceptions of knowledge, skill and learning are now impacting on the Australian VET system. Although these changes have important implications for VET provision there has as yet been little research that looks at the impact of these changes through the lens of pedagogy and vocational learning. This is the focus of this paper. Recent research both in Australia and overseas suggests that as a result of these changes all educational sectors are experiencing:

- ?? A shift in focus of educational policy and practice from institutions to learners and from teaching to learning.
- ?? A greater focus on work and workplaces as significant sites for learning.
- ?? Increased emphasis on vocational outcomes that move beyond the acquisition of technical skills and competencies to outcomes that explicitly seek to change the ways in which people engage with work.
- ?? Increased emphasis on the role of vocational education and training in developing people.
- ~~??~~ In order to respond to these shifts new understandings of pedagogy have emerged in which VET teaching and learning practices are seen as needing to become more: learner-centred, work-centred and attribute focused
- ~~??~~ These new understandings of pedagogy align themselves more with constructive learning theories rather than transmission theories of learning particularly when harnessed to an emerging goal of VET in terms of developing people.
- ~~??~~ The emerging guiding principle of pedagogical practice is constructive alignment. That is the appropriateness of particular pedagogical strategies to the different purposes and settings in which contemporary vocational, workplace and organizational learning takes place.

Introduction

Rapid changes are taking place in industry, the labour market, work and work organization. At the same time the concept of skill that has underpinned much of VET provision has broadened considerably. Today a much greater emphasis is placed on 'generic', 'soft' or 'behavioural' skills than on 'technical' skills that once informed much of VET pedagogy. New developments have also occurred in learning theory including increased interest in 'situated', 'organisational' and 'productive' learning. Contemporary notions concerning knowledge have also changed as a result of increased interest in the emergence of the 'knowledge economy' and the 'knowledge' worker.

Although all of these changes have important implications for VET provision there has as yet been little research that looks at the impact these changes have on the pedagogy of vocational learning. This is the focus of this paper.

Changing pedagogy

The widespread changes outlined above have significant implications for the learning requirements of workers and for the pedagogical methods used to facilitate that learning. The effects of this are, as yet, not fully apparent but there is a widespread belief in the importance of learning in contemporary times. Many economic commentators see learning as the vehicle through which increased productivity, innovation and competitiveness can be delivered in an increasingly complex economic environment (Ellstrom 2001). At the same time social commentators regard learning as the vehicle through which issues of social equity, cohesion, citizenship and cultural development can be addressed (Larsen & Istance 2001). Governments have sought to take up both perspectives in the development of education and training policies that seek to achieve lifelong learning as both the rationale and integrating goal of all educational sectors. (UNESCO 2002)

What is now evident is that all these changes have altered the ways in which different educational sectors understand their role in education. The goal of achieving lifelong learning for example is ambitious as it aims to engage all citizens in the process of learning. It is also complex because it breaks with past education reforms by defining in new ways the content, place, timing and duration of learning. Perhaps more fundamentally for VET it:

- ? Shifts the focus of educational policy and practice from institutions to learners.
- ? focuses more on work and workplaces as significant sites for life long learning
- ? increases the emphasis on vocational outcomes that move beyond the acquisition of technical skills and competencies.

A reading of the recent research evidence from Australia and Europe (Cullen et al 2002, OECD 2003) suggests that contemporary VET pedagogy can be characterized as becoming more learner-centered, work-centered and attribute focused

Already there is some evidence that patterns of workplace training and learning practices are beginning to change in order to meet the new demands placed upon them by both employees and organizations (Matthews 1999). However some suggest that the changes to work and the organization of work have as yet not been fully matched by the educational models and practices used by vocational and workplace educators (Torraco 1999). The challenge is that some of the new learning needs, methods and orientations differ from those traditionally provided for by the VET sector. This is not to say that the current focus on courses and nationally recognized qualifications, on- and off-the-job delivery, and deregulated provision are not of value. Rather it suggests that such approaches must be augmented if new demands on VET are to be met. Moreover responding to these opportunities requires pedagogical approaches and strategies that vary from those traditionally used in the VET sector.

This paper investigates the issues of learner centred, work centred and attribute focused learning in more detail. It begins by outlining the traditional understandings and orientations that in many ways have constructed teaching and learning in Australian VET and which remain important points of reference for many vocational educators.

VET pedagogy – some theoretical considerations

In a recent report, the OECD (2003) provides a useful contribution to discussions concerning contemporary vocational pedagogy. It offers a model of traditional pedagogy in which the learner, teacher and knowledge (broadly defined as both theoretical and practical knowledge) are relationally located through three different albeit related processes of teaching, training and learning. The report suggests that each of these relational processes bring with them a suite of pedagogical practices supported by particular theories of learning (eg behavioural, cognitive, constructivist, etc.) which in turn have different assumptions about knowledge learners and learning. Further the report argues that until quite recently thinking in almost all sectors of education and training have focused on teaching and training processes rather than the learning process. This focus leads to the idea that the teaching and training processes involve the selection and implementation of pedagogical strategies that lead to learners gaining the necessary knowledge and skills identified prior to learning and in subject/modules, competency standards, programs and courses of study.

How this can be achieved has been the subject of much theoretical debate. **Behavioural** and **cognitive** psychology, once the theoretical cornerstones of VET pedagogy hold significantly different assumptions about learning and therefore promote and legitimize different pedagogical strategies. Behaviourism focuses on observable behavioural change and promotes the view that learning can be enhanced or inhibited by the manipulation of the environmental stimuli surrounding the learner. Consequently pedagogical strategies such as instructional cues, demonstration, practice, reinforcement, behavioural objectives and positive feedback mechanisms need to be planned and implemented by the teacher for learning to occur.

Cognitivism on the other hand is less concerned with promoting learners' overt performance by the manipulation of stimuli rather it emphasises the mental processing aspects of learning. Consequently it suggests that the teaching process involves the selection and use of pedagogical strategies that enable learners to develop cognitive strategies and abilities. These sorts of strategies, including framing, outlining, concept mapping and advance organisers, are seen as enabling learners to connect new information with existing knowledge in meaningful ways.

Both these theoretical positions are criticized for taking knowledge and skills as unproblematic givens within the educational project. Implicit too is the idea that learning is essentially an individual activity. They also tend to assume a 'transmission' model of learning in which the teacher or trainer selects pedagogical strategies that enable the effective transmission and unmediated accumulation by the learner of existing bodies of knowledge and skill.

These assumptions about learning are not uncontested. Educational theorists such as Dewey, Piaget and Vigotsky have argued at length, albeit from different positions, against this conception of learning. They regard learning as the active construction of knowledge and skills by learners. Moreover this active construction involves learners individually and socially constructing meaning for themselves through experiences as they learn (Gonczi cited in Campus Review March 2002:7).

Although these ‘**constructivist**’ theories of learning are by no means new there is continuing dispute within this theoretical field largely to do with the relational dynamics that exist in the individual-social dualism in terms of the construction of knowledge and skills. Nonetheless there is general agreement that learning involves the active construction of meaning by learners, which is context dependent, socially mediated and situated in the ‘real-world’ of the learner. Many teachers and trainers use pedagogical strategies based on constructivist views of learning. Learning tasks are embedded in ‘real-world’ contexts. Small group work, discussion, debate, practical problem solving, the presentation of alternative perspectives, sharing of information, reflective practice, cognitive apprenticeships, modeling, mentoring and coaching are all strategies that resonate with a constructivist orientation to learning. Much of adult learning, experiential learning, problem and project-based approaches base teaching and learning practices on constructivist theory. Indeed the latest interest in situated learning, workbased learning and ‘communities of practice’ suggest that constructivism is now a major contributor to understanding pedagogical practice. Indeed it seems that constructivist theory has become the main source of understanding contemporary teaching and learning practices.

Learner centered

Constructivist learning theories adopt a more learner centred approach to pedagogical practice than either behaviourism or cognitivism. Learners are seen as active agents in their own learning not merely recipients of other peoples’ knowledge. Constructivists conceptualise learners as participants, contributors and elaborators of knowledge, which is always socially mediated. In short learners change the world as the world changes them. However, as Cullen et al (2002:11) point out in education and training ‘*most of the theoretical debates are normative and value-laden; arguing for the primacy of one approach over another rather than the appropriateness of different practices to different settings and purposes.*’

Moreover they suggest that current teaching and learning practices are eclectic varying both within and between education and training sectors. Arguably in Australia teaching and learning in VET at least in its institutional forms reflects this position. VET pedagogy draws on a mix of educational assumptions and theories about teaching and learning and VET teaching and learning practices reflect this eclecticism. Indeed a mixture of teacher and learner centered approaches are often variously combined in VET learning programs, which therefore assumes that vocational learning outcomes are achieved through the transmission, acquisition and active (re)construction of vocational knowledge and skills by learners.

In some senses then 'good practice' in VET teaching and learning is not tied to a particular educational theory (eg behaviourism, cognitivism or constructivism). Rather good practice has taken on a more pragmatic position in which 'constructive alignment' (Biggs 1999) or appropriateness to different purposes and settings (Cullen et al 2002) has become the key guiding principle of good practice. However the move to a more learner centered pedagogy in VET is not occurring solely because of increased interest in constructivist learning theory. A number of other socio-economic changes have unsettled the pre-eminence of educational institutions as sites of learning and teachers as fountains of knowledge.

First, contemporary social and economic conditions including the new requirements of work in some senses have contributed to the focus on learning. As the OECD report (2003) suggests today pedagogical questions encompass everything the individual 'actually' learns, over and above the formal requirements of an educational programme. Moreover contemporary learning (including vocational learning) places more emphasis on the complete transformation of individuals.

Second, continuous change appears the hallmark of the new economy. Technology changes, jobs change, skills change, the organisation of work changes. Consequently continuous learning is not only desirable but an inevitable feature of contemporary work. (Perelman 1993) In short traditional institutional forms of learning are no longer adequate and cannot keep up with the contemporary demand for learning.

Third, conceptions of knowledge are also changing. Forms of knowledge other than disciplinary knowledge are now given more value in workplaces. Working knowledge has more performative value in contemporary workplaces and new forms of knowledge are seen as being socially distributed rather than culturally concentrated (Gibbons 1994). Indeed knowledge work, that is the creation and application of working knowledge is regarded as crucial to contemporary economic activity.

Fourth, increasingly learners are constructed indeed construct themselves as consumers of education and training. They are expected to contribute to the cost of their own learning and are becoming the architect and builder of knowledge and skills sets that enable them to compete in the contemporary job market.

Finally, as the OECD (2003) reports proposes contemporary pedagogical questions focus more directly on ways of transforming professional and social identities. Indeed there is a shift from the notion of instruction to that of learning.

This suggests that a shift in pedagogical orientation is taking place through the use of pedagogical practices that are more consumer sensitive, which focus on the full learning potential of individuals, which actively engage learners in the planning, development and construction of their own vocational knowledge and skills. Indeed perhaps the most important goal of VET today is to contribute to the construction of new worker-learners. (Chappell & Johnston 2003)

Work centered

Work has always been a central focus of the VET sector. The Australian vocational education and training system was originally initiated by governments as a result of intense industry lobbying at the turn of the last century. Employers at that time led the call for governments to address critical skill shortages in the emerging Australian economy arguing that the school system was inadequate in terms of meeting the skill needs of industry. (Goozee 2001). Although in the nineteen seventies the role of TAFE was also expanded to include broader social and educational goals including increasing access and equity to education and training, particularly for disadvantaged groups, VET continued its primary vocational mission.

However in the late nineteen eighties governments initiated reforms to the VET system which were designed to increase industry involvement in VET (MEST 1995). This industry involvement resulted in competency-based VET programs, built on industry defined occupational standards and national qualifications, identified in nationally endorsed Training Packages. These developments can in many ways be seen as the first attempt to reshape VET as a more work centred system. (Chappell & Hawke 2003)

Despite these reforms the link between competency standards, Training Packages and VET pedagogy remains tenuous. There have been significant changes to the content of Training Packages since their introduction in July 1997 (including in some cases the development of supplementary resource materials). Nonetheless an analysis of the main features of Training Packages identified by ANTA and cited by Dawe (2002:13) reveals that the learning process is not a central focus at the development stage.

However as has been outlined there have been widespread changes to work and ideas concerning knowledge, skills and learning since the initiation of these reforms. Many of these changes now put a degree of stress on the assumptions, which underpinned the development of competency standards and Training Packages. Competency standards and Training Packages for example tend to assume: descriptions of work can be generalised for particular jobs or occupations, a degree of stability in terms of the work skills required and consistency in terms of the requirements different employers demand of workers, vertical career mobility rather than horizontal mobility and standard jobs rather than non-standard jobs, the primacy of technical skills over generic employment skills and that the needs of enterprises and the needs of industry sectors are similar.

In some senses then the use of competency standards and training packages to create a more work centred VET system is an insufficient response given the changes that have occurred in work. Indeed in some senses the contemporary concept of competence is now significantly different from what it was 15 years ago when the reforms changed. (Sandberg 2000)

Work centred pedagogy

However the desire for work centred approaches to vocational learning have not retreated as a result of these pressures outlined above rather they have moved in a different direction. Today approaches to vocational learning place a great deal more importance on context, difference and the social dimensions of learning. This position draws on constructivist learning theories that emphasise the social dynamics of learning.(Bandura 1986, Lave & Wenger 1991) and is reflected in the views of commentators who regard the workplace as the most 'authentic', relevant and 'situated' site for vocational learning (Marswick & Watkins 1990, Billett 2002)

This has caused some commentators to argue that structural changes to workplaces outlined elsewhere has seen the need for increased integration of learning and work (Bryans and Smith 2000). Indeed, the need for such integration for the good of both organizations and individuals has been the focus of increasing attention by researchers and decision makers over the past ten years (Ellstrom 2001). An illustrative example of such a new method comes from research recently conducted by CEDEFOP (Skule and Reichborn 2002) in Europe that investigated the workplace conditions that led to learning conducive work. The research identified seven conditions that promote learning at work, each one of which is positively correlated to the 'learning intensity' of a job. Although not regarded as a pedagogical intervention in the sense that it does not concern itself with traditional notions of classes, courses and curriculum, it can be argued that it is a pedagogy implemented through **managing aspects of the workplace environment**. This moves away from classroom based pedagogical practices to non-classroom based and work-integrated development programs. What is said to be required is an approach that enables the work environment itself to be seen as an authentic learning situation (Bryans and Smith 2000). Further, the types of skills to be developed have moved away from the exclusively technical or discipline based, towards the more general development of cognitions, skills, and attitudes that related directly to improved work performance (Lang and Wittig-Berman 2000).

Attribute focused

The increased incidence of non-standard work, outsourcing and downsizing in the contemporary economy as described earlier means that many workers must be able to apply their skills and learning capacities across different work-place settings. For organizations, this means that when they employ a worker on a part-time, contract or casual basis, often for a short time period, they will not invest heavily in their education and training. Instead, they expect the worker to arrive ready for work and with the skills required. Thus organizations require workers who have non-organization specific skill-sets and capabilities, which can quickly be adapted to new organizational settings.

As the ILO reports (2002) it has been demonstrated that although employers benefit from worker education and training in terms of productivity, it is the individual who is increasingly 'becoming the architect and builder responsible for developing his or her own skills' (p.6). As the report also shows, this responsibility is less and less related to formal education and training and more one of people *learning to learn* so that they can

develop skills and acquire knowledge independently. Indeed learning to learn has become one of the more desirable attributes of contemporary workers.

The increased focus on general, generic, key and employability skills such as learning to learn has emerged in recent times as a result of a number of interconnecting factors. First, technology innovations particularly in ICT and robotics have reduced demand for production workers with technical skills required in manufacturing. Moreover the 'shelf-life' of many technical skills is decreasing. Second, flatter management structures have led to an increase in demand for workers with higher levels of interpersonal, communication, problem-solving and decision making skills. Third the increasing recognition of the collective nature and importance of knowledge work and innovation in the contemporary economy also requires workers with an array of skills related to teamwork, problem setting, project management. Fourth, increasingly individuals recognise that having these skills gives them an advantage in an uncertain labour market. Therefore they seek to develop these attributes through formal education and training qualifications.

One of the difficulties providers face when designing attribute focused programs is that the research undertaken both here and overseas has identified a large number of work related attributes. These attributes are wide ranging including for example **basic skills** such as literacy and numeracy, **interpersonal skills** such communication and team work and **personal attributes** such as learning to learn, self-management and independent problem solving. (Curtis & McKenzie 2001). Other attributes also mentioned include things such as integrity, honesty and initiative. The difficulties presented by these categories are that there is often little indication of what these attributes mean in terms of levels of work. For example much of the literature suggests that all workers at all levels need these attributes. In addition some of the attributes may not be amenable to being developed through the vocational learning process. Indeed some of these attributes present ethical difficulties for providers of education and training.

Nevertheless despite these difficulties it is possible to identify attributes that can and indeed should be the goal of VET. For example attributes such as teamwork, problem solving and learning to learn are laudable goals. However, a strong case can be made that these attributes can be achieved **ONLY** through the process of learning. Consequently, if attributes such as these are central to VET outcomes then the pedagogical practices deployed, that is the processes of learning become inextricably linked to the achievement of outcomes. In short, it is not sufficient to identify particular attributes as some additional outcome of a program that is focused primarily on achieving something else. Rather, the pedagogical processes chosen has the greatest influence on whether a particular attribute is achieved. For example if learning to learn is an important goal of VET a pedagogy that enables people to take charge of their own learning rather than being limited by a set of pre-determined prescriptions is required. The learning requirements for contemporary workers are not such that they can be 'front loaded' with training at the beginning of their career. The flexibility required by today's employment environment requires workers to continually develop new skills across the duration of their careers through an ongoing involvement in both formal, informal learning and

independent learning. This suggests that if work-related attributes are important outcomes for the VET sector then much greater consideration needs to be given in terms of supporting and monitoring the pedagogical processes and strategies that are deployed to achieve these outcomes.

A final word

Changes taking place in industry, the labour market, work and work organization together with changing conceptions of knowledge, skill and learning have important implications for VET pedagogy. Further the changing pedagogical practices outlined in this paper places much greater responsibility on the increasingly diverse group of practitioners who are now involved in preparing, delivering and managing VET programs at the local level.

This new environment requires practitioners who have a sophisticated appreciation of all of the pedagogical choices that are not only available to them but which are also consistent with the context, clients and learning sites that make up the arena in which they work. In short the successful implementation of VET programs relies on learning specialists who have expertise and a pedagogical orientation that they are able to deploy to meet the increasingly diverse requirements of clients. The learning needs and expectations of large industry players, small to medium size businesses and individual learners are not the same. The learning requirements of remote indigenous communities, urban regional communities and inner city communities, are inevitably different. Consequently VET teachers and trainers must be able to recognise and adapt their teaching and learning practices in order to respond to these differences. Of course many VET practitioners are highly experienced and very capable learning specialists, able to organise and implement pedagogical strategies that support the achievement of vocational outcomes. Nevertheless the increasing reliance by VET on casual and part staff, together with minimum education and training qualifications at the certificate IV level does not provide the kind of professional learning skills required in the contemporary world of workforce development. Arguably perhaps the greatest challenge facing the VET sector is to develop a workforce that can implement the pedagogical changes required in the context of contemporary vocational learning.

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