

## Investigating learning through work: What the literature says— Support document

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# The changing context: Work-centred VET provision

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Vocational education and training is now a well-established focus for educational providers, with schools, colleges, universities, private providers, industry and community organizations all offering education and training programs that are either directly or indirectly focused on providing learners with the knowledge skills and dispositions that enable them to gain and sustain employment in the contemporary labour market. However these same providers are coming under increasing pressure to change the way they do business as a result of contemporary changes to work and work organization, together with new ideas concerning knowledge, skill and learning. (Chappell et al 2003).

Employer-employee relationships are now more diverse as casual, part-time and contract employment become common features of the labour market landscape. Increasingly inter-organisational networks of production, supply chains and outsourcing arrangements characterise contemporary industry relationships - again complicating labour relationships.

The concept of skill has changed with much greater interest being taken in developing an array of general and personal capabilities and attitudes required in contemporary work alongside the more traditional technical skills required in workplaces. The importance of knowledge generated at and through work is now regarded as an essential ingredient in developing agile and innovative enterprises capable of adapting to the uncertainties of the contemporary global economy. In addition the concept of learning is now increasingly seen as not simply the responsibility of education and training providers but rather is regarded as an integral and on-going feature of the contemporary workplace.

In the High Level Review of Training Packages-Phase 1, Chappell et al (2003) reported that there was overwhelming evidence that in the face of these changes teaching and learning practices in VET needed to become more:

- Learner-centred
- Work-centred
- Attribute focused.

Progress towards achieving this outcome depends on a critical re-assessment of the role, practices and contribution of education and training providers in developing a workforce with the necessary skills and abilities required in contemporary work. Within the context of this study a critical assessment of what this means in terms of the on-going development of the VET provider workforce is also needed.

Today the VET work environment is increasingly characterised as being:

- More diverse in terms of industry and community needs
- Less stable in terms of the work skills required in employment
- Characterised by non-standard rather than standard employment
- Interested in collective/organizational competence as well as individual competence.

These and other factors have led to renewed interest in better understanding the dynamics of workplace learning in order to find the most productive ways in which VET organizations can themselves encourage and support learning in their workplace.

One of the more important challenges in this area is for organizations **to understand the significant conceptual gap that separates learning that takes place in the classroom/training room contexts and learning that occurs at work.**

VET providers also confront this challenge at a time when there is considerable evidence that they face a number of significant changes that will inevitably impact on the learning and development needs of VET staff.

Vocational education and training is now a well-established focus for educational providers, with schools, colleges, universities, private providers, industry and community organisations all offering education and training programs that are either directly or indirectly focused on providing learners with the capabilities that enable them to gain and sustain employment in the contemporary labour market. However these same providers are coming under increasing pressure to change the way they do business as a result of contemporary changes to work and work organisation, together with new ideas concerning knowledge, skill and learning. (Chappell et al 2003).

As has been demonstrated in the companion research activity running parallel with this study, *Critical issues in Teaching Learning & Assessment* (Mitchell et al 2005) the role of many VET teachers and trainers is experiencing unprecedented change, not only in the ways they engage learners in the learning process but also in the ways teachers and trainers learn and adapt to their new roles.

# Drivers of change

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

- **Technological developments** – The rapid social uptake of information and communication technologies (ICT) and the increasing capacity of broadband, mobile phone technology and net-casting to deliver large amounts of visual and text based information to consumers at-home on demand will raise the expectations of learners for these technologies to be incorporated into learning programs. This 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 and processes tailored to their individual needs, including utilising the new media increasingly available to learners. Personalised and customised learning will become a widely held expectation of individuals and employers and they will select VET providers who meet their expectations
- **Staff shortages**- There is strong evidence that vocational education and training providers, like all employers, face a future in which issues of skill shortage and ageing populations are an on-going and complicating feature in terms of their operations. VET providers are therefore likely to face a highly competitive environment in terms of recruiting and keeping suitably qualified staff able to operate successfully in the contemporary VET provider market. As a result there will be increased pressure on VET providers to raise the productivity of existing VET staff and this in turn will lead to dramatic changes in the way VET work is organised and delivered
- **Engaging more learners** - General skill shortages in the economy will lead the call by governments and industry for vocational education and training to re-engage older learners and those who have left education and training with little by way of vocational skills in order to address skill shortages. This is likely to require quite different approaches to teaching, learning and assessment by VET providers if these learners are likely to re-engage with education and training
- **Competition** - Skill shortages and ageing populations are also likely to result in increased competition between existing VET providers. It may well be that large employers and groups of employers will invest heavily in their own training capacity in order to secure the essential skills that they lack. They are also likely to look to governments to support their training efforts. Therefore they will compete with existing VET providers for government funding.

Although spoken of in different ways the report *Enhancing the Capability of VET Professionals* (Dickie et al 2004) also noted many of these trends also occurring in the Australian context.

## Challenges

If these drivers of change are persuasive they present a number of challenges for VET providers not least in terms of the human resources required to support these changes (Barajas 2003).

In order to address new technological developments specialist staff including courseware designers, call centre, multimedia, animation and technical staff will be needed in addition to teachers/trainers. ICT developments will also demand the full institutional integration of ICT by VET providers and there will be pressure to develop networked partnerships with other institutions such as community centres, libraries and museums. Local and regional multimedia resource centres will be needed to maximise access and support for learning outside of institutions (Cullen 2003, Svensson 2003) and Help Desks and centralized call centres will also have an increasingly important role in terms of student support (Moynagh & Worsley 2003).

Tailoring products and services to individuals and small groups will require learning programs designed to fit the particular needs of VET client groups in terms of content, process and delivery. VET providers will need expertise in re-thinking teaching, learning and assessment processes and in understanding different learning styles and practices that acknowledge the particular talents and experiences of learners as well as the particular needs of employers. This expertise will be needed in order to meet the expectations of learners and employers who see themselves as consumers of vocational learning.

Staff shortages will increase pressure to utilize learning methods that allow greater learner-teacher/trainer ratios. One possible approach will be the use of teaching and learning assistants will take up some of the work delegated by teachers/trainers. ICT will also be used not only as a medium for learning but also as a platform to manage and report on learning achievements (Moynagh & Worsley 2003).

Re-engaging disaffected learners will require learning techniques and models that are very different from the learning experiences that have been the traditional basis of learning in educational institutions. ICT for example is both an entertainment and educational platform. This may well provide opportunities to re-engage learners in new ways. Similarly it provides opportunities for learners to learn away from traditional educational institutions in shop-front learning centres.

Increased competition will lead to even greater sensitivity to the needs of VET clients and at the same time create the need for VET providers to utilize employer-of-choice approaches to retain highly skilled staff, including supporting learning and development activities that meet the needs and expectations of VET staff.

It is within this context that this study investigates how VET providers can address the learning and development needs of both the organization and its staff. The study specifically focuses on identifying possible strategies that can be deployed by organizations to maximize learning that occurs at work. This literature review underpins this process by outlining what we know about integrating learning and work.

# Integrating learning and work

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Vocational Education and Training (VET) providers have a vested interest in understanding the ways in which they can better integrate learning and work. First, they operate in a highly competitive market in which industry clients are looking for VET programs that directly address their skill needs and are seen to add explicit value to the productive capacity of their businesses. At the same time they must design programs that meet the needs and expectations of individual learners, who remain at the centre of VET delivery.

Second, VET providers are themselves organizations that must address their own skill development needs in ways that add explicit value to their own productive capacity. At the same time they need to provide their employees with learning & development opportunities that contribute to their ability to undertake their work and future career development. This is of particular importance given that continuous change appears an inevitable feature of the VET landscape.

Integrating learning and work has been the subject of intense thinking and research in recent times and this review outlines some of the latest thinking in this area in order to give VET providers ideas about how they can conceptualise and design learning opportunities for VET staff that incorporate learning at work.

This report outlines the different ways in which greater integration of learning and work is currently understood and then provides a number of possible strategies for implementing this integration into the normal work activities of the organization. It begins by outlining the major theoretical considerations that have guided understanding of learning and work.

## Integrating learning and work: some theoretical considerations

The OECD report on adult learning policies and practices (OECD 2003) provides a useful contribution to discussions concerning contemporary teaching and learning practices. It offers a model of traditional practices in which the learner, teacher/trainer 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 practices supported by particular theories of learning (e.g. behavioural, cognitive, constructivist, etc.) which, in turn, have different assumptions about knowledge, learners and learning.

The report argues that until quite recently thinking in almost all sectors of education and training has 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 strategies that lead to learners gaining the necessary knowledge and skills identified prior to learning and in subjects/modules, competency standards, programs and courses of study.

How this can best be achieved has been the subject of much theoretical debate. Behavioural and cognitive psychology, once the theoretical cornerstones of teaching and learning, hold significantly different assumptions about learning and therefore promote different teaching and learning 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 strategies such as instructional cues, demonstration, practice, reinforcement, behavioural objectives and positive feedback mechanisms need to be planned and implemented by the teacher/trainer 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/training 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 in education. 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 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 (Billett 2002d, 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. This is largely to do with the dynamics that exist in terms of the relationship between individuals and their social environment 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, trainers and human resource developers use pedagogical strategies based on constructivist views of learning. Learning tasks are embedded as much as is practicable in 'real-world' contexts. Small group work, discussion, debate, practical problem solving, the presentation of alternative perspectives, sharing of information, reflective practice, cognitive apprenticeships, modelling, mentoring and coaching are all strategies that resonate with a constructivist orientation to learning.

Adult learning, experiential learning, problem and project-based approaches all use teaching and learning practices based on the assumptions held by constructivist learning theory. Indeed the latest interest in situated-learning, work-based learning and 'communities of practice' suggest that constructivism is now a major contributor to understanding pedagogical practice in learning and development programs. Social learning theory highlights the importance of modelling. People form ideas about what to do by observing others and use these ideas in terms of meaning making and as a guide to action (Bandura 1986).

The work of Lave & Wenger (1991) extends this theory arguing that learning normally is a function of the activity, culture and context in which it occurs. Learning is thus always situated, involving social interactions, which in workplaces involve learners becoming members of a community of practice. Exponents of adult learning theory and experiential learning also emphasise the importance of praxis; that is the connection of learning with real life situations (Boud et al 1993).

This position is reflected in the views of commentators who regard the workplace as the most 'authentic', relevant and 'situated' site for vocational learning (Marsick & Watkins 1990) particularly when **work is organized to facilitate learning**. Workplaces can structure and routinely provide learning experiences as part of everyday work activities and through guidance from other workers (Billett 2002d).

In terms of VET workforce development it would be fair to say that many of these ideas have been taken up in terms of professional development. Initiatives such as Reframing the Future and the Flexible Learning Network have embedded constructivist learning practices in their activities. They include: action learning and other forms of problem solving and self-managing teamwork and a range of other learner-centred development techniques like action research, and mentoring, coaching and project based learning' (Mitchell et al. 2001: 41). These initiatives also stress the importance of shared learning (via communities of practice), mentoring, reflective practice, and informal learning.

Research conducted by Stehlik et al (2003) confirms that informal learning, including learning from peers and colleagues, self-directed study, hands-on practice and individual reading are very important aspects of professional development in VET. While the work of Dawe (2004) indicates that, at least in large enterprises, the drivers of workplace learning include the need for innovation, technological change and the demand for quality assurance.

Hager (2003) however inserts a cautionary note, suggesting that much of our understanding of learning continues to be tied to the assumptions that underpin learning in formal educational settings. He suggests that because we think of learning in this way we limit our understanding of learning at work in terms of the opportunities work provides for learning. This is consistent with the conclusions of Smith & Harris (2000) who suggest that the nature of learning is little understood when work placements are incorporated into vocational programs.

They argue that we need to consider learning as consisting of many different types of process. This opens up the possibility of utilising a much wider range of learning theories and practices, each underpinned by somewhat different assumptions. In some ways this is consistent with the findings of Chappell et al (2003) and the view of Cullen et al (2002:11), who point out that 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. This position is also consistent with the research of Felstead et al (2004), who write that the results of the learning at work survey in the UK suggest that learning by doing, workers organising and checking their own work and, crucially, advice, understanding, coaching and counselling from line managers emerge as keys to the development of effective and productive staff.

Arguably, in Australia learning and development practices, at least in their institutional forms, reflect this position. Professional development programs (in-house or external) draw on a mix of educational assumptions and theories about teaching and learning and a mixture of teacher and learner-centred approaches are often combined in these programs.

In some senses then 'good practice' is now 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 this move is not occurring solely because of increased interest in including a wider range of learning theories in learning and development practices. A number of other socio-economic changes have unsettled the pre-eminence of educational institutions as privileged sites of learning and have at the same time led to questions concerning the utility of formal education practices to develop and sustain learning at work.

As the OECD report on adult learning policies and practices (2003) suggests, pedagogical questions now encompass everything the individual ‘actually’ learns, over and above the formal requirements of an educational program. Other commentators have argued that structural changes to workplaces outlined elsewhere (Chappell et al 2003) demands 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, Dickie et al 2004). These commentators suggest that as organizations respond to market changes through flatter, more flexible structures, employees too must be able to respond in flexible ways.

This means that workers who are increasingly faced with novel and unpredictable work demands must be able to learn on the job as requirements emerge. As new technologies are introduced, new collaborations are formed and new competitive challenges are faced, individual workers must be able to learn to adapt *in situ*. This calls for new learning concepts, strategies and practices that assist in greater integration of work and learning. As Boud (2001) suggests, we may need to look beyond traditional education and training practices to achieve this integration.

He argues that traditional institutional forms of education and training have been highly successful in formalising much of social learning that once stood outside of education. This position mirrors the work of Bernstein (cited by Bonal & Rambla 2003) who creates the concept of the Totally Pedagogised Society (TPS) to suggest that we live in an era in which pedagogy is being introduced into all spheres of life, colonising all aspects of social learning that once stood outside of education and training.

Boud (2001) proposes that this development has now reached a stage where educators must begin to consider what the limits of their traditional educational practices are in the context of learning at work and what, if any, new practices can be invoked to assist this process. He suggests that today:

*The conventional separation of learning and work is breaking down. Our practice is grounded at a very deep level in a set of assumptions about the separateness of learning and work. Our practice as educators has been dependent on this separation. Our educational institutions are separated physically and conceptually from the points of application of learning and we need to find ways of bridging this gap.*

Chappell et al (2003:10) in the High Level Review of Training Packages – Phase 1 appear to recognise this gap by suggesting that:

*If learning has become an integral part of working, arguably formal education and training systems would need to consider what new role they might play in the development of the workforce. One specific implication is that formal education and training is no longer a stand-alone intervention in economic productivity-to have full effect it must be more systematically linked to wider human resource management strategies, encompassing new approaches to job design and work organization.*

Their report goes on to suggest that workplace activities such as talent management, performance management, coaching and mentoring and 360 degree and multi-rater feedback are arguably important work-centred pedagogies yet remain largely unrecognised in terms of their contribution to learning.

# Bridging the gap

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A number of researchers have made contributions to our understanding of the gap that separates formal education and training programs designed to provide learners with the knowledge and skills required in workplaces and learning that takes place as a normal feature of working. For the most part this work has been undertaken in the service of improving learning embedded in VET programs that are designed for external clients.

However in this section we interpret the research undertaken in this area in order to identify what these practices might mean for VET providers who aim to improve their own organisational learning and development strategies for their staff.

## 1. The experience of work

Embedding work experience as part of VET program delivery is an increasingly common approach that attempts to use work as a learning resource. In many ways this development has been based on a view that work experience must in some way or another assist learners to understand and operate in the ‘real’ world of work. However, for the most part work experience has not received as detailed attention as perhaps it warrants.

In a useful contribution to our understanding of work experience, Griffiths (2004) researched the ways in which work experience is operationalised in a six-nation European study. Five models of work experience were identified:

Traditional – ‘launching’ students into the world of work, i.e. preparing students in advance of entry to work

- Experiential – as ‘co-development’, i.e. through learning by doing
- Generic – as an opportunity for key skill assessment, i.e. providing broad underpinning knowledge and skills
- Work process – ‘attuning’ students to the context of work, i.e. focussing on awareness of the work place
- Connective – a form of reflexive learning in which the emphasis is on linking ideas with practices.

The study observed that all models were present in the sites that were the focus of investigation and each model brought with it particular assumptions about learning.

### Traditional model

This model assumes that knowledge and skills can be taught separately from the context in which they are applied. Students undertaking work experience would then automatically assimilate working knowledge gained through the experience of work. This model is silent concerning how learners learn and develop through work experience. Therefore the model maintains the division

between learning for work and learning at work by assuming that the learning theory for both is essentially the same.

## Experiential model

This model draws in part on the work of Dewey in so far as it suggests that learning must be relevant to the learner with pedagogy using problem-based and inquiry-based approaches. It also draws in part on experiential learning theory, which places the student's interpersonal and social development at the centre of learning through work experience. It encourages greater partnership between the educational institution and the host employers by negotiating clear objectives for students, workplaces and schools/colleges in advance of the work experience. It also entails the development of new pedagogic practices to assist students in identifying, for example through the use of a de-briefing process after the work experience, the influence of the experience on personal and social development. However the model leaves the relationship between study and work experience unresolved.

## Generic model

This model assumes that all learning, including learning through work experience, can be identified and made explicit through the production of learning outcomes. This has been tied to the desire for learners to show greater autonomy and self-regulation. In the case of work experience, this has led to greater planning of work experience placements and managing and evaluating the learning through the use of statements about 'learning outcomes'. This approach to learner-centeredness often requires learners to produce their own personal action plans for work experience. The plan serves as a type of contract between the individual, the workplace and the educational institution, thus facilitating student self-assessment and external verification of key skill development within a workplace. However the application of the model interprets these outcomes in rather narrow and mechanistic ways. Portfolios of evidence are produced by using pre-set methodological procedures, which assume that they are constant across all contexts and therefore a guarantee of authenticity and validity.

## Work process model

The work process model of work experience attempts to bridge the gap between learning for work and learning at work. It recognises that relevant theoretical knowledge taught in formal settings is often not useful to learners in the practical setting of work. Work process knowledge is seen in this model as involving a number of dimensions - including an understanding of product-related, labour and organisationally related and social and ecologically related knowledge. A distinguishing characteristic of the model is that it draws attention to the importance of situating work practices in the actual context of the labour process by not only addressing the development of specific work related tasks and activities but also by developing an understanding of the actual work context. However this does not happen automatically in work experience and requires mediation to ensure that learners have access to the appropriate concepts and subject knowledge either in the workplace or in the educational program.

## Connective model

This model of work experience places great emphasis on the influence of context and the organization of work on students' learning and development and therefore the situated nature of workplace learning. The model recognises that learning and development can be conceptualised as vertical development – individual progress through a hierarchy of knowledge and skills. It can also be viewed as horizontal development - change and development through moving between different contexts. The connective model recognises both dimensions and attempts to support students to recognise these two dimensions in their development. The model suggests that this recognition then enables students to interpret their experiences in different ways. In some ways this model is

consistent with the ideas of Stevenson (2003) who draws on activity theory to examine vocational teaching and learning processes. The model also combines the theoretical work of Engestrom (2000) who argues that workplaces can be conceptualised as inter-connected activity systems with their own divisions of labour, rules and procedures and the work of Lave & Wenger who suggest that workplaces consist of 'communities of practice' in which new members gradually move from the periphery to the centre of the community of practice. In the connective model practice only becomes meaningful when the activity system in which the practice is situated is understood and the processes of enculturation, identity change and intellectual development that people undergo in practice are recognised. Thus, the model assumes that it is only when the inter-relationship between practice and context is understood by learners can they personalise their experiences, mull over their understanding of specific practices and, ultimately, re-contextualise their learning in other situations. In this way they develop 'polycontextual' skills that enable them to adjust their practices by engaging in different tasks in different contexts.

However, this model requires that the organization considers how they can provide opportunities for learners to participate in the 'communities of practice' that operate at work and implies a reappraisal of human resource development strategies, as well as management and developmental practices. It also requires new teaching and learning strategies that enable learners to learn how to enter unfamiliar territory and work collaboratively in different communities of practice and different activity systems - including those found in educational institutions and in workplaces.

## Implications for work and learning

Although the research cited focuses on work experience as a pedagogical practice used by education and training providers in their training programs we contend that it also provides some insights into how the normal experience of work can be enriched to facilitate greater learning at work by employees in organizations including VET.

The **experiential model** suggests that learning at work is facilitated when clear work objectives are set and the worker is involved in developing, monitoring and reviewing the work plan that is set.

The **generic model** suggests that while work plans are important elements that contribute to learning at work they lose a degree of authenticity if they are used to identify learning outcomes rather than work outcomes. Further the model suggests that outcomes must be couched in terms that are consistent with the business context of the employing organization.

The **work process model** draws attention to the importance of contextual knowledge in learning at work. It suggests that knowledge of the organization including: product knowledge, organizational knowledge and the broad social context in which the organization operates can facilitate learning at work by staff.

The **connective model** of learning draws attention to the importance of connecting the organizational context with work practices. It understands work as a social activity in which various groups of workers together shape the work practices of the organization. It suggests that learning at work is facilitated when human resource and management practices are designed to encourage individual workers to participate in existing 'communities of practice' that exist in the organization.

## 2. Learning-conducive work

Norwegian research conducted for CEDEFOP (Skule & Reichborn 2002) investigated learning taking place in Norwegian workplaces. Two types of data were used. The first involved informant interviews in 11 companies, the second, a questionnaire survey of 1500 employees mainly in the private sector.

The study developed the concept of learning-conducive work using three measures

- Employees' own perception of how much they learn at work
- The durability of work competence measured in terms of the length of time employees can be away from the workplace and still remain competent
- The difficulty of mastering the work measured in terms of on-the-job training.

From these measures the study categorized work as being either:

**Learning-intensive work** – work that scores high on all three measures

**Low learning-intensive work** – work that scores low on all three measures

The study concludes that while the two categories of work could be found differentially in different industries and within industries when it comes to the opportunity to learn through work these differences are not significant.

Rather the study concludes that it is the properties of work or the learning conditions of work that are the most important in explaining the differences in the opportunity to learn through work.

The authors identify seven different factors that promote learning through work:

- High degree of exposure to demands from customers, management, colleagues and owners
- High degree of exposure to changes in technology, organization and work methods
- Managerial responsibility
- A lot of external professional contact
- Good opportunity for feedback from work
- Support and encouragement for learning from management
- High probability that skills are rewarded through interesting tasks, better career possibilities or better pay.

The report also suggests that the best way of promoting learning through work is to improve several of the above learning conditions simultaneously. Greater responsibility, demands and pressures from surroundings, combined with good access to learning resources, support and rewards, are the most encouraging conditions found in learning-conducive work.

The study concludes that these findings can assist organizations when determining the extent to which they can claim status as a learning organization. The findings also enhance the reliability of formal recognition schemes by including information about the learning environment of the company. They can also assist companies in terms of planning the required formal and company based learning mix required by the organization and if used productively can enhance the learning of all employees, not only those who personally take the initiative to enhance their formal competence in the work that they do.

### 3. The “affordances” of the workplace

Stephen Billet has been developing a theoretical understanding of workplace learning based upon an extensive series of case studies in diverse workplaces (Billett 2001, Billett 2002a, Billett 2002b, Billett 2002c, Billett 2002d, Billett and Pavlova 2003). Through these studies, a central notion that has been developed is that a workplace offers both factors that constrain or inhibit learning and others that facilitate or enhance learning. The latter set he refers to as the “affordances” of the workplace.

Through Billet's various publications, the language and detail of these affordances has changed but a comprehensive list of what he believed was included was spelt out in a listing in a 2001 article where he distinguished between those that related to the activities of the workplace and those that related to the interdependencies. Without maintaining that distinction here, the list Billet identified included the following thirteen factors:

- *routineness* — the degree by which work practice activities are routine or non-routine, thereby requiring robust knowledge
- *discretion* — the degree by which the scope of activities demands a broader or narrower range of decision making and more or less autonomous practice
- *intensity* — the degree by which work task decision making is complicated by compounding variables and the requirement for negotiation among those variables
- *multiplicity* — the range of activities expected to be undertaken as part of work practice
- *complexity* — the degree by which decision making is complicated by compounding variables and resolution of tasks requiring negotiation among those variables
- *accessibility* (opaqueness of knowledge) — the degree by which knowledge required for the work practice is either readily accessible or is hidden (e.g. unspoken)
- *working with others* (teams, clients) — the ways work activity is premised on interactions with others
- *engagement* — basis of employment, e.g. as an employee versus a contractor
- *status of employment* — the standing of the work, its perceived value and whether it attracts support
- *access to participation* — attributes that influence participation or engagement with the work and the workplace
- *reciprocity of values* — the prospects for shared values within the organisation
- *homogeneity of tasks* — degree by which tasks in the work practice are homogeneous. Similarities may provide for greater support (modelling etc.) in development of the ability to perform
- *artefacts/ external tools* — the effect of the physical artefacts used in work practice and upon which performance is predicated.

These factors engage with a range of variables that recur in many analyses of learning in the workplace. They recognise that there are factors in the specific nature of the work that each worker engages in as well as factors that relate to the organization and structure of the workplace and to the interpersonal relationships that, deliberately or otherwise, operate in the workplace.

The importance of Billett's work is that he has repeatedly demonstrated the impact that these sorts of factors have on the learning that "naturally" occurs in real workplaces and has focused attention on the factors within workplaces that "allow" learning to occur.

## 4. Expansive learning environments

In the UK a long-term research program managed by Lorna Unwin and Alison Fuller has been seeking to identify the factors within "apprenticeship" that are of importance to the learning that is meant to be central to this long-standing model (see for example., Fuller and Unwin 1998, Fuller and Unwin 2002). The two authors initial work identified sets of factors that were specific to the individual work contexts they were studying but soon noticed that a pattern could be observed in

which they could assign workplaces along a continuum they came to describe as “expansive/restrictive”.

Expansive workplaces were characterised by an environment in which learning was valued and planned into the work process, where the nature of the work required the apprentice to draw on and use a wide variety of knowledge and where there was a culture of sharing knowledge and expertise.

In an article that encapsulated their case study research program on apprenticeship (Fuller and Unwin 2003), they identified three inter-related themes as underpinning their expansive/restrictive continuum — participation, personal development and institutional arrangements. Moreover they characterised the end points of their continuum as follows:

<b>Expansive</b>	<b>Restrictive</b>
Participation in multiple communities of practice inside and outside the workplace	Restricted participation in multiple communities of practice
Primary community of practice has shared ‘participative memory’: cultural inheritance of apprenticeship	Primary community of practice has little or no ‘participative memory’: no or little tradition of apprenticeship
Breadth: access to learning fostered by cross-company experiences built in to programme	Narrow: access to learning restricted in terms of tasks/knowledge/location
Access to range of qualifications including knowledge-based vocational qualifications	Access to competence-based qualification only
Planned time off-the-job including for college attendance and for reflection	Virtually all-on-job: limited opportunities for reflection
Gradual transition to full participation	Fast—transition as quick as possible
Apprenticeship aim: rounded expert/full participant	Apprenticeship aim: partial expert/full participant
Post-apprenticeship vision: progression for career	Post-apprenticeship vision: static for job
Explicit institutional recognition of, and support for, apprentices’ status as learners	Ambivalent institutional recognition of, and support for, apprentice’s status as learner
Named individual acts as dedicated support to apprentices	No dedicated individual; ad-hoc support
Apprenticeship is used as a vehicle for aligning the goals of developing the individual and organisational capability	Apprenticeship is used to tailor individual capability to organisational need
Apprenticeship design fosters opportunities to extend identity through boundary crossing	Apprenticeship design limits opportunity to extend identity: little boundary crossing experienced
Reification of apprenticeship highly developed (e.g. through documents, symbols, language, tools) and accessible to apprentices	Limited reification of apprenticeship, patchy access to reificatory aspects of practice

(Table taken from Fuller and Unwin 2003, p. 411)

Their notion of “participation” draws heavily on the similar conception developed by Lave and Wenger (1991) and includes such work organization practices as job rotation, secondment and involvement in activities that take the learner out of their workplace to engage with other workplaces, suppliers or customers. A key notion they explore is that of “boundary-crossing” — activities that draw the learner out of their typical frame of reference and challenge them with new perspectives and/or demands.

They also identify a number of specific features of the workplace that are responsible for enhancing the “personal development” of the learner: the provision of opportunities to reflect on practice; the ability to envisage and experience long trajectories and careers; and opportunities to develop new identities through belonging to multiple communities of practice.

Finally, their notion of “institutional arrangements” incorporates the explicit recognition of the employment relationship within apprenticeship as a critical feature of an expansive environment wherever it overtly and explicitly defines the apprentice as simultaneously a worker and a learner. Importantly these arrangements need to give value and status to the learning and to include the creation, maintenance and provision of learning resources as a central part of the company’s relationship with the employee.

## 5. The HRD approach

Within the tradition of Human Resource Development, there is another stream of literature that considers the impacts on learning in the workplace of organisational structures and practices. A recent example of this is in the work of Ashton (2004) who tested a model based upon earlier work by two other authors (Darrah 1996, Koike 2002) through conducting a case study in a large multinational corporation in South-East Asia.

He identified a number of factors that impacted on the availability of knowledge and information for learning:

- The existence of a power-based hierarchy that controlled access to knowledge
- The uneven distribution of knowledge with some sections perceived as holding “privileged” or “confidential” information
- The competition that derived from a rank-based promotion system discouraged sharing with those perceived to be potential competitors.

Other factors affected the opportunity of individuals to practice skills required for learning:

- Amongst junior employees, there was little or no structure to movement from one job to another so that skills acquired in one context might have little use or application in the next
- Some managers were poor at delegating and thus provided few opportunities to learn or practice new skills
- Many employees are very proactive at developing and practicing skills even where it is not supported

Ashton also describes a range of circumstances that affect the availability of feedback to support learning:

- Many line managers believed that learning was a natural process and didn’t require their active involvement
- Many managers lacked the skills and knowledge to provide effective or useful feedback
- Many managers thought it was not their responsibility — learning was the responsibility of the HR department

- The trust necessary to give and receive effective feedback was often not present because of Asian cultural values about “loss of face”.

Finally, Ashton identifies factors that impinge on the availability of rewards to required to sustain learning:

- While some employees are satisfied with intrinsic rewards, others require some explicit public recognition
- Longer-term reward systems such as pay are not always clearly related to learning as other intra-organisational factors also impinge on salary and promotion decisions.

Importantly, Ashton warns of over-simplifying the complex inter-relationships that exist between and amongst these factors “[t]here is a danger ... [that] we provide an overly-deterministic account of the provision of opportunities for learning” (p. 49). In particular he draws attention to that fact that many individuals learn despite the organisational constraints while others fail to do so despite all possible opportunities being available.

Many of the characteristics outlined by these researchers are consistent with those identified by commentators who have described the characteristics of a **‘learning organization’**. For example Kerka (1995) suggests that conceptions of the learning organization put forward organizational characteristics such as:

- Provide continuous learning opportunities
- Use learning to reach goals
- Foster inquiry and dialogue
- Provide a safe environment for people to share openly and take risks
- Embrace creative tension as a source of energy and renewal
- Are continuously aware of and interact with their environment

However as Smith (2001) and others have pointed out the realization of these characteristics depends on a sophistication of thinking by managers in organizations that may not be present. These characteristics also focus mainly on the socio-cultural dimensions of organizations and fail to address other organizational dimensions such as organizational structure and the ways work is organised. Finally, these characteristics do not adequately link both individual and collective learning to the strategic objectives of the organization.

Finger and Brand (1999) suggest that in order to identify the development of a learning organization ‘indicators’ of learning need to be defined and connected to other organizational indicators such as indicators of job satisfaction, increased productivity, client satisfaction surveys etc. Further that there are both structural and cultural characteristics that together create the learning organization.

It would have been possible for us to organise these theoretical approaches using a taxonomy of learning such as that proposed by Marton et al (1993). However, for the current purpose, our interest was less in what this literature says about ways in which learning is conceived than it how it helps us to understand the workplace conditions that foster learning.

## What does all this mean?

While couched in very different terms, our analysis points to a substantial overlap in the conceptual bases that underpin the approaches highlighted by these commentators. To look at this more closely, we identified each of the various factors proposed in the literature reviewed above and characterised the key features or key words associated with each. Using a content analysis approach,

we then clustered these on the basis of their apparent similarities. Our analysis of this material suggests that an organization's learning environment can be clustered around four areas:

- **Job structure**
- **Work process**
- **Social interaction**
- **Managerial**

Almost all of the factors identified above, we argue, fall into these four categories.

In the context of our research this suggests that the ways **jobs are structured** in RTOs can either facilitate or impede learning at work. Quite diverse factors such as the degree to which the job has clear work objectives, the degree of exposure to change and the extent of feedback provided, contribute to ways in which RTO staff experience their work and their ability to learn.

Second, the **work process environment** may also be a major contributor to learning at work in RTOs. Factors such as having an understanding of the context in which the organization operates together with an appreciation of the strategic objectives as well as experience in working in different areas of the business all influence the extent to which learning occurs at work.

Third, the **social interaction environment** includes the extent to which RTO work groups and teams experience and shape the work of the organization, the degree to which individuals are exposed to professional contacts outside the organization and the value the organization places on the work of the individual. All of these factors influence the degree of learning that takes place at work.

Fourth, factors in the **managerial environment** of the RTO also influence the degree to which learning occurs at work. These include the managerial support given to learning, managerial rewards and recognition, the extent to which managers provide useful feedback, the degree to which organisational knowledge is made available to individual workers and the sophistication of manager's thinking in terms of harnessing learning to the goals of the organisation.

Our working hypothesis that informs the next stage of this research is that organizational practices within RTOs can better support learning at work when they focus on improving the characteristics of each of the job, work process, social interaction and managerial environments. In order to do this a first step for RTOs is to be able to identify how well they are doing in these environments.

When RTOs have identified their current position, strategies can then be developed to strengthen the learning environment in each of the areas. This involves recognising the current characteristics that act as enablers and constraints impacting on the RTOs learning environment and then initiating organizational practices that encourage learning at work.

To facilitate this process we developed and trialled an instrument to assess the extent to which they are 'learning organisations' and enable them to identify areas where improvement is possible. The development of the Provider learning Environment (or PLE) scale is described in another support document: *Investigating learning through work: Learning environment scale & user guide* to the provider. This document also provides practical advice on its administration and use. Finally, a facts sheet provides a series of questions which could be used to help smaller providers and small organisational units within larger ones to assess the effectiveness of their learning through their work. These support documents are all available on the NCVET website.

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