

Workplace Learning: a literature review

Report prepared for Competenz

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Introduction

As we move into a knowledge society, with its emphasis on knowledge building, it is *learning* that becomes more and more important. Workplace learning is a key part of this, driven by the impact of changes in demographics, skills demands, technologies, and people's relationships and roles within various institutions and communities. Transitions from school to work are not as distinct and linear as they once were. Learning is no longer confined to a "front loaded" activity in a formalised, classroom environment. Work and career are no longer static and predetermined entities.¹ Knowledge is not necessarily individualised.² The way an entire organisation learns can be instrumental in its innovation and profitability.

Understanding a knowledge society is therefore integral to understanding workplace learning. We cannot talk about workplace learning as separate from this context because it is this context—the changing nature of work, knowledge, learning—that in part drives what we think of as, or want for, workplace learning. If we do not contextualise workplace learning in this way, we will simply prepare people with the skills and competencies for today but not for tomorrow (Cullen et al., 2002)—which would run counter to much of the point of workplace learning as something more than simple training with a narrow focus on surface-level skills (Matthews, 1999; Winch & Ingram, 2002). Workplace learning has a broader project and potential to link development of the individual with development of the organisation or business, through an emphasis on sustained development and learning processes as well as learning outcomes. If changes in society and economy have loosened learning from the classroom, then the workplace is also more than just physical location. We can consider "the workplace" to be physical location *and* shared meanings, ideas, behaviours, and attitudes—all of which help determine the working environment and relationships (Matthews, 1999). These place *learning* at the centre of workplace learning:

Looking at work from the perspective of its learning potential is fundamentally different to looking at it simply in terms of competencies needed in order to perform the job well. (Cullen et al., 2002, p. 36)

These are big ideas but this is in fact a small project. The main objective is to locate and synthesise literature about the "how" or pedagogy³ of workplace learning, with particular emphasis on examples of "best practice" in relation to apprenticeships and other forms of on-the-job training and also—where possible—on workplace learning in relation to Competenz' specific industries (manufacturing, engineering, baking, food and beverage, maritime). The review does

¹ See Vaughan, Roberts, and Gardiner's (2006) research changing transitions and notions of career and work for young people.

² See Gilbert on knowledge and the knowledge society (2005).

³ Pedagogy means conscious strategies and principles used for teaching and instruction.

not simply describe workplace learning and best practice examples but locates them within a broader framework about society and economy that is educational—that is, concerned with the principles as well as practices of learning, and the relationships between learning in different contexts (for example, on the job and off the job).

It aims to address five main questions:

1. What are the best practice examples of workplace learning and what is it that makes them best practice? (That is, how do we know they are “best”? What measures are used to determine their success?)
2. What connections can be made between on-the-job training and off-the-job training?
3. How do workers’ previous learning experiences and beliefs about learning affect their workplace learning experiences?
4. What can theories about learning and knowledge tell us about learning in the workplace?
5. Given learning theories, what are the implications from best practice examples for workplace learning programmes and providers, and further research, in New Zealand?

This review does not attempt to be an exhaustive review of all the literature on workplace learning—particularly since that literature actually derives from a number of different bodies of literature which are themselves extensive, complex, and specialised:

- Andragogy (adult learning pedagogy)
- Management theories (for example, total quality management, just-in-time techniques, lean manufacturing)
- Learning theories (especially, for example, John Dewey on experiential learning, Guy Claxton on lifelong learning and “learnacy”)
- Human resource management theories and organisational psychology (learning organisations, change management)
- School-to-work transition programmes with a workplace learning component.

Instead, this review is selective and purposeful. It focuses on nonprofessional occupations, such as those most closely associated with industry training. It broadly sketches the terrain within which workplace learning can be usefully located, points to examples from the different bodies of literature and to the advantages and the dangers of workplace learning. Finally it shows what we do know and what we do not yet know about workplace learning and points to some of the possibilities for future research.

Workplace learning and knowledge society

Various writers have focused on particular aspects of a knowledge society, calling it post-industrialism or post-Fordism or post-capitalism (Drucker, 1993), post-modernity and late capitalism (Bauman, 1992; Jameson, 1991), and fast capitalism (Gee, Hull, & Lankshear, 1996). Some authors have taken up specific aspects of the societal and economic paradigm shift occurring: the implications of “accelerated flows” of people, ideas, and money between nations supported by a technological revolution (Appadurai, 1996); the fragmentation of structures and institutions such as the family, leadership, and church, and a heightened awareness and calculation of life risks (Zimmer-Gembeck & Mortimer, 2006); identities based in patterns of consumption rather than in social class (Kenway & Bullen, 2001); and the rise of a new “creative class” of knowledge workers (Florida, 2002). However, what they all have in common is a recognition of increased complexity and uncertainty in our times and in the demands not only for different skills but also for different relationships between knowledge, institutions, and people. In turn, these changing relationships demand a learning stance from us.

Gilbert’s (2005) account of a knowledge society is particularly pertinent to this review of workplace learning because it focuses on changes in what knowledge is and does, and what people need to learn (starting with school) in order to participate in a “new work order” in New Zealand. Gilbert describes the transition from the late 20th century Industrial Age, where economic wealth was generated by exploiting natural resources to produce commodities through mass production, to a 21st century Knowledge Age, where the creation of ideas, new market demands, and niche markets (personalising of existing products and services) is emphasised. So as the limits of mass production, natural resources, product-specific machines, and semiskilled workers producing standardised goods were reached, niche markets emerged and the nature of work changed, forcing workplaces to adopt different ways of operating, including changing the roles of workers, owners, and managers (Piore & Sabel, 1984).

So the world of work is becoming more complex and uncertain as old categories and rapid change make it harder to predict occupational futures and very specific skills needs. Everyone needs the capacity to adapt, change, and innovate. Workplace learning becomes a tool through which businesses may gain competitive advantage (recruitment and retention of workers, development of innovative practices, and the production of new knowledge). This is what prompted Zuboff (1988) to claim that “learning is the new labour”. Since learning is no longer something that requires taking time out from being productive, we see learning at the heart of what we have come to know as productive activity.

The current emphasis on *fostering a culture of innovation*, first launched in New Zealand through the Growth Innovation Framework (GIF), is part of this shift to develop a more highly skilled population that continues to learn. It mandates increasing the investment in education, especially Modern Apprenticeships, and in improving the pathways between school, work, and further study/training (The Office of the Prime Minister, 2002). The GIF was one of the first official acknowledgements that workplace and employment relations practices were a positive contributor

to economic development, rather than a constraint on the ability of firms to grow. There is a focus on developing “high-performance workplace” models where employees work in autonomous or semiautonomous teams, use communication “soft skills”, have a voice in the organisation through official mechanisms, where management practices are improved and employees not only have the skills to perform but—most importantly—are *motivated* to do so (Hiebert and Borgen, 2002).

The upshot of all this is that people and the way they think about work are now central to economic development. Hence when the OECD reports the strengths and conditions of New Zealand’s innovation “system”, it focuses on the skills, capacities, and dispositions of population in relation to physical resources (for example, having a resourceful entrepreneurial population; a unique physical environment; an open society engendering trust; pro-competitive markets; a predictable political environment; and pockets of excellence in new industries like software, and the creative industries (Organisation for Economic Co-operation and Development, 2007). Similarly, the New Zealand Treasury identifies the development of higher skills, opportunities to re-skill, and “soft skills” as critical to productivity: “attitudes and values matter as much as knowledge and technical skill” (2008, p. 2). In other words, this foregrounds a reconceptualised “dialectical relationship” between people and organisations—and not only their workplaces, but also their communities and their social or leisure organisations (Bryans & Smith, 2000, p. 229).

Taking this broad context into account, there are several different possible approaches to workplace learning:

1. Off-the-job training where learning assignments are related to problem-solving and task-centred activities linked to the strategic business intent of the organisation.
2. Structured learning in the workplace (sometimes called alternance), managed and validated by external educational providers in partnership with employers/managers/supervisors, learning professionals, and worker-learners. This often has a concern to make explicit links between classroom learning and relevant labour market activities, and usually has an appreciation that learning and the motivation to learn are mediated through activities embedded in contexts that make sense and matter to the learner.
3. Informal, pervasive learning that forms the foundations of the context informing work practices, routines, and behaviours so that communities are formed or joined and personal identities are changed. Learning involves becoming an insider to acquire that particular community’s subjective viewpoint to learn to speak its language, to behave as community members.
4. Forms of intentional, structured, and organised learning on the job that have an explicit pedagogic strategy. These aim to develop competencies of employees by supporting, structuring, and monitoring their learning through different principles such as:
 - structuring of workplace learning into the workplace—such as job rotation, sequencing of learners’ activities, increasing variety and complexity of work tasks, creating opportunities for learner awareness of skill and performance

- participative modes of action-reflection—such as a group working together for certain periods of time and focused on work-based issues brought by each individual to the group; new ways of thinking about feedback, questioning, talking, reflecting, and making sense of experience; individuals sharing their learning with others in the team and that shared learning being used to make changes in the organisation
- social learning and mutual construction of knowledge and critical awareness of worker roles—often launched by conflict or other challenging problems. People frame and reframe experiences, seek and integrate perspectives, and experiment with different ways of doing things. (Simons, 1995, cited in Cullen et al., 2002, p. 34).

Putting the learning into workplace learning

Learning is generally understood as resulting in a permanent capacity change in people (Illeris, 2003). Guy Claxton's pioneering work argues that brain science shows that learning is hard wired in all of us and has little to do with conventional ideas about intelligence or educational success. He advocates educational approaches that foster young people's "learnacy", "learning muscles" and "learning stamina" (2004), and "learning power" (2002). In other words, in order to produce the kinds of people needed for a knowledge society with a melding of people's individual aspirations, societal values, and (sustainable) economic development, we need to teach people how to be lifelong learners.

Claxton (2006) claims there are three different understandings of the "learning": raising standards, through better study skills; creating ideal learning environments; and helping students become better learners. He argues that only the third aim can help prepare young people for a lifetime of change (in the 21st century, in a knowledge society, or in a fast capitalist or de-industrialising society). Once students think of themselves as learners, they will track their own development and create their own learning targets, and teachers can cultivate learning capabilities by teaching content as well as expanding learning dispositions. Claxton argues that we are now at a fourth stage—recognising the importance of dispositions—following on from learning as achievement (raising standards), learning as process (skill, technique, organising, and retaining knowledge), and "learning styles" (teaching adjusted to suit students' "styles").

When it comes to workplace learning specifically, there is potential to go in two different directions. There can be a focus on the articulation between education and work in order to recognise and provide credentials for all forms of learning, drawing on cognitive theories of learning which tend to be individualistic and atomistic. There can also or instead be a focus on the workplace as a learning environment where learning is a process embedded in production and organisational structures and is therefore about participation in communities of practice. This draws on contextual theories about learning or situated learning (Cullen et al., 2002). Put another way, the broad trends in workplace learning can focus on the individual (ideally transcending their existing limits) and/or on social and situated learning and building communities of practice (Illeris, 2003).

An ideal approach might be to combine the two directions through an ongoing refinement and extension of theories concerning adult learning (including suitable pedagogies for adults), action learning, and learning organisations (Mitchell, Henry, & Young, 2001). For this to work, we would need to make and understand several shifts:

- from processes focused on individual and personal development as a worker to instrumental focus where learning at individual, group, and organisational level is harnessed to a goal of enterprise competitiveness
- from learning as the responsibility of trainers and human resource developers to incorporation in wider strategies for human resource management and more inclusive view of learning as embedded in all facets of business strategy, culture, and structures; learning as continuous improvement
- from learning as declarative knowledge (abstract and theorised) to an emphasis on practical knowledge or know-how and on tacit or implicit knowledge that is not knowable in sense of being communicated to others
- from learning outcomes as competencies and skills that are observable and transferable from one context to another to learning processes whose outcomes are more intangible and expressed as images, metaphors, conceptual maps, shared understandings or disposition such as commitment and loyalty (see Cullen et al., 2002).

These shifts offer a view of workplace learning that builds on, and becomes distinct from, training. Another way of seeing this distinction is that it focuses on the idea of a learning organisation, with its focus on processes of learning, individual learning styles, creating the right environment for learning to occur, and organisational learning, with its focus on formalised, prescriptive development and training needs, generic competencies, and universalistic assessment.

Knowledge does not necessarily accrue to individual workers but is distributed across networks, making good communication critical in making the learning useful to the organisation or business. Co-operative learning is useful to business because workers at remote sites can use local knowledge to solve local problems without reference to centre, while simultaneously ensuring that centre retains control of core values of business by unobtrusively controlling values of people working within it. However, co-operative learning is not always embraced—it challenges established notions of expertise and working identities and working relationships based on traditional hierarchies of knowledge (Cullen et al., 2002).

Although Hughes and Thornton Moore (1999) write about work-based learning in United States school-to-work programmes, they make the point that work-based learning needs to be educational. (That is, not just about learning work-readiness-related attitudes and behaviours but about linking classroom learning and work-learning content.) Their table provides a useful summary of the comparisons between the different depths of learning that might be involved.

Table 1 Learning in school-to-work programmes

	More learning	Less learning
Socio-cognitive demands	The intern's tasks require knowledge and skill	The intern's tasks are not challenging
Social–interactional demands	The intern has heavy contact with others of varying statuses and roles	The intern has little contact with others
Pragmatics	The intern's tasks are important to the organisation	The intern's tasks are peripheral to the organisation
Access characteristics	Access to the knowledge of the workplace is available to the intern	Access to the knowledge of the workplace is unavailable
Classification	Weak: less division of workplace knowledge	Strong: workplace knowledge is highly segmented
Frame	Weak: access to the knowledge of the workplace is not controlled	Strong: access is highly controlled
Social organisation	Workplace roles are not highly segmented or hierarchical	Workplace roles are highly segmented and hierarchical
Workplace culture	Workers believe in collaboration and learning	Workers are status-oriented and competitive, and the intern is given low status
Production process	Less division of labour; work teams are used	High division of labour; Tayloristic

(Source: Hughes & Thornton Moore, 1999, p. 12)

The table shows that there is more potential for learning when the tasks involved are complex. The implication is that we cannot assume that learning is taking place in a workplace just because it's called "workplace learning".

An example from a different form of workplace altogether highlights the point. In Hipkins' (2005) review of student engagement with the science knowledge in health programmes, she describes UK science educators Richard Duggan and Sandra Gott's (2002) analysis of the science knowledge that was actually used in six different industry settings where scientific knowledge and ways of working were apparently important. Duggan and Gott found that the workers lower down in the organisational structure were mostly required to work to strict protocols that were intended to standardise procedures and minimise errors. Because these workers typically had a limited understanding of the scientific "concepts of evidence" that underpinned these protocols, they lacked an understanding of the significance of the various aspects, and hence did not necessarily recognise the potential impact of any breach of the protocols. By contrast, as employees worked their way higher up in the organisation they gained a more holistic big-picture understanding of why things were done in certain ways and so became better at problem solving. In models of workplace learning situated within knowledge society demands, the implications of Duggan and Gott's study suggest that workers at all levels in the organisation are likely to develop problem-solving "muscle" when they can get involved in "the big picture".

Challenges to existing educational structures

Workplace learning challenges existing models of education and roles for educators. Workplace learning has generally been aligned with the experiential rather than the theoretical in discussions and theories about learning—an undervalued and under-researched area. This is why there is comparatively little literature to review related directly to workplace learning in comparison to learning in other sectors and contexts (for example, early childhood education, primary and secondary school education, and adult education).

A key reason for this lack of directly relevant literature is a lack of recognition of learning that takes place in the workplace *as learning*. Instead it has tended to be seen in other terms such as “getting to know the job” or “climbing the ladder”. In other words, learning that takes place in the workplace has generally been seen as being primarily about the *workplace*. Workplace learning has also been marginalised because the people most likely to be participating in formal workplace learning programmes are also the people more likely to have had less satisfying school experiences and to see themselves as less able learners and more motivated by extrinsic rewards (for example, credit, qualifications, promotions) than intrinsic pleasure in learning. In many cases, it has served workplace learning or training programmes well to understate the idea of learning so that these people are not further alienated.

Examples of this devaluing and under-researching in the schooling system include curricula that consistently perpetuate the division of subjects into academic and vocational, and then privilege academic subjects (with, for example, higher status, more credible qualifications, and favourable timetabling)⁴ and school-based careers education programmes often based on outdated views of career, work, and training.⁵ Although there are some school-based school-to-work transition programmes (for example, Gateway, Secondary-Tertiary Alignment Resource [STAR] courses) these are still typically considered to be *interventions* for less able students rather than valid learning choices. Examples of the devaluation of workplace learning in the formal tertiary system include the only very recent re-establishment of Modern Apprenticeships and inclusion of Industry Training Organisations as Tertiary Education Organisations in their own right, and the continued disproportionate influence of universities on the school curriculum.

Even though vocational, workplace-related, and experiential models of learning have typically been pushed to one side in mainstream education, workplace learning is an *educational* issue because we know that learning does not start when people first go to school and stop when people leave school. There is a growing body of general education research (not specific to workplace

⁴ This debate has been particularly vociferous in relation to the development of the National Certificate of Educational Achievement (NCEA). For more detailed discussions on this, see Dobric (2005) “Drawing on Discourses: Policy actors in the debates over the National Certificate of Educational Achievement 1996–2000” in *New Zealand Annual Review of Education*, 15 and Hipkins and Vaughan with Beals, Ferral, and Gardiner (2005) *Shaping our Futures: Meeting secondary students’ learning needs in a time of evolving qualifications*. Wellington: New Zealand Council for Educational Research.

⁵ For New Zealand research, see Vaughan and Gardiner (2007) *Careers Education in New Zealand Schools*. Wellington: New Zealand Council for Educational Research.

learning) that shows that some of the most meaningful learning occurs outside the school classroom environment and across a wide variety of contexts throughout life and that people may connect up the learning from these different events and contexts.

However, with the emphasis on an emerging “new work order” and a “knowledge society”, there are increasing calls to integrate vocational and academic subjects in school as part of a “new vocationalism” which potentially brings together the needs of industry and schooling in new ways, giving new impetus to lifelong learner identities. As Ryan (2008) has pointed out, work is also, like school, a rich source of learning and the experience of learning from work could be an entitlement for *all* students, especially if assessed and recognised by high-value qualifications serving multiple purposes and users. However, these are issues about how new policies (in Australia) on vocational learning in school confront older constructions about who vocational students are and what vocational knowledge is (Yates, 2006).⁶ Depending on people’s different positions within industry and education, the issues actually look different:

For some, the issue is about developing greater vocational attributes, orientations and identity across all students. For others, the issue is about how accredited vocational subjects should be taught, and the problems in adequately teaching these, especially in relation to work placement. For yet others, the issue of VET is about marginalised or at-risk students, and special projects that can be put in place in partnership with industry to save these. (Yates, 2006, p. 283)⁷

A persistent and vexing problem with linking academic and vocational knowledge and work is that each is typically set in opposition to each other in the most commonly understood educational contexts—that is, formal contexts such as school. Academic knowledge and work is aligned with theoretical, abstract, discipline-based knowledge and thinking. Vocational or technical knowledge and work is aligned with practical, experiential, and observable phenomena. These different positions—or the reasons for their opposition—can be traced back to Greek philosophers’ ideas about disciplines and knowledge, and then to a blending of these with egalitarianism (the idea that everyone is entitled to education and a chance to improve their lives), and to industrial society’s need to sort and prepare people for different types, and tiers, of paid work.

The oppositional thinking of the two kinds of knowledge—academic versus vocational—has tended to align with major schools of thought in education such as traditional, mainstream, and “liberal” education versus progressive and alternative education. Educational debates have often

⁶ See also Bathmaker (2005) on the United Kingdom research into this area.

⁷ The idea of raising the status of vocational learning and integrating it with academic learning also cuts the other way. Research on the New Zealand Technology curriculum in the NCEA context shows the challenges in shifting what has traditionally been a teacher-driven, prescriptive, transition-to-work focus through technical subjects to a teacher-facilitated, enquiry-focused, problem-solving focus that has some schools seeing an “intellectualisation” that does not meet their particular students’ needs; in these cases some schools opt to work with Industry Training Organisations and repackage their technology courses, offering different National Certificates (not NCEA) (Hipkins, Vaughan, Beals, & Ferral, 2004).

expressed this in terms of “education versus training”, “mental versus manual”, “knowing that” and “knowing how”, and “subject-centred versus child-centred”.⁸

The following table summarises the most common of these opposing ideas. Theoretical differences include the separation of “mind” and “hand” and privileging the former through various school structures (for example, many school timetables favour abstract or academic subjects over vocational and manual subjects). Pedagogic differences include use of larger, formal classes with cohort and room changes centred on learning content versus smaller, informal classes with “home” rooms centred on pastoral care and learning “life skills”.⁹

⁸ For a current example of how this plays out in the context of the NCEA, see the section on the Technology curriculum in the second Learning Curves report, *Shared Pathways and Multiple Tracks* (Hipkins et al., 2004).

⁹ For a detailed discussion on how academic and vocational forms of education manifest as alternative and mainstream forms of education, see Vaughan (2004) (in particular Chapter 3, Frame Extension to “Pathways”).

Table 2 Academic and vocational ideas about learning and knowledge

	Academic	Vocational
Type of knowledge	Abstract	Applied
	Objective (universal, eternal) and focused on brain work	Subjective (context-specific) and focused on manual work or working with senses or emotions
	Discipline-based	Cross-disciplinary
	Theoretical	Experiential, observable
Position in society	Mainstream	Alternative
	High status	Low status
Educational theories	Traditional	Progressive
	Education	Training
Pathways from school to paid work	University, higher education	Polytechnic, apprenticeships, industry training
	Professional, managerial	Trades, technical, low-skilled labour
School curriculum	English, maths, science, history etc.	Workplace learning, special/applied subjects
	Linear pathways through school, to tertiary study, then to work	Interventions or programmes designed to redirect students to linear academic pathways or “compensate” for lack of the same
	Mainstream curriculum	Alternative programme
School funding	Main/standard grants	STAR, Gateway
School students	High achievers, high ability, academically-inclined, university material	Low achievers, failures, drop-outs, good-with-hands, at risk
Qualifications and assessment	Achievement standards (NCEA)	Unit standards (NCEA)
	External assessment (exams)	Internal assessment
	Degrees	Certificates
Pedagogy	Large classes, distant teacher–student relationships, cohort and room changes, subject-centred	Small classes, close teacher–student relationships, “home” rooms and same cohort throughout, child-centred, extensive pastoral care, relationships with family and community (including employers)

The issue of formal and informal learning is fundamental to the workplace’s potential to reframe this old, traditional, and now increasingly problematic division of knowledge types:

Workplaces increasingly require employees to have knowledge that cannot be learned ‘in practice’ and schools are being expected to prepare their students not just to pass examinations but to be lifelong learners in contexts where there may be no teachers. This means that the old distinction between sites of learning, while not irrelevant—schools and workplaces remain different in their educational potential—is becoming obsolete; we need distinctions based on purposes rather than just on sites. A curriculum model is needed that

does not treat the learning potential of school and work as separate but in relation to each other and a broader set of educational purposes. (Young, 1999, p. 474)

Workplace learning firstly challenges the old division on the grounds of recognising the informal learning that goes on in workplaces. Informal learning is typically quite different from what is prescribed in formal education courses; it is highly contextualised (very specific to the workplace), does not fit well with the narrow view of knowledge as disciplinary, and learners are often unaware of the significance, range, and depth of their own informal learning (Hager, 1998). However, the informality of the learning in a workplace can be one of its biggest appeals to workers. In Turkey, part of the success of apprenticeships lies in their positioning as part of the informal education sector (as opposed to the formal education sector of school and training centres). A study of apprentices in carpentry and car repair found that the informal and life-embeddedness of the apprentice's learning was rated highly (as opposed to Apprenticeship Training Centres which were inconvenient and out of step with small-scale and semi-legal artisans) (Unluhisarcikli, 2001).

However, much of the literature also points to a complete lack of agreement about what informal and formal (and nonformal) actually mean, and where the boundaries between them might be (Malcolm, Hodkinson, & Colley, 2003). Workplace learning can certainly include both formal and informal learning, and important informal learning can include workers consulting with or seeking advice from other workers or even from wider contacts such as professional networks, suppliers, and customers (see Eraut, Alderton, Cole, & Senker, 1998).

Perhaps a useful way forward is to sidestep the informal/formal division and its close relationship to the academic/vocational division. Hager (1998) suggests a focus on "making judgements" as the central activity worth studying in workplace learning. He claims that workplace learning is essentially about learning to make appropriate judgements in the changing and often unique circumstances that occur in the workplace. While an assembly line is organised so that workers do not need to exercise much judgement (and therefore need little workplace learning), a learning organisation maximises the exercise of judgement—and therefore more learning is required.

Malcolm et al. (2003) also suggest a shift in focus. They acknowledge that there are dual pressures both to formalise the informal aspects (with curriculum and prescribed texts) and to informalise the formal aspects (through learning mentors, often without teaching qualifications). Yet in studies of workplace learning, both informal and formal learning are present and neither is inherently superior to the other; moreover that no theory of learning ever only applies to just one. So the challenge is not therefore to combine the two—they are already in combination—but to recognise and study the nature of the informality and formality and the balance between them (which vary in different situations), and to understand the implications of those things. They suggest focusing on: learning processes; location and setting; purposes; and content.

In some cases the formality and informality can be recognised as different and studied that way—but with the aim to show the usefulness of each in combination with the other. Butler and Brooker’s (1998) study of metal fabrication apprentices taking TAFE¹⁰ arc welding courses showed that the courses could provide apprentices with training that they could *not* get through workplace training. They found that the TAFE courses provided an opportunity for apprentices to practise with teacher feedback and without the pressure of production. However, the courses, while they could provide training on how to do a fillet weld, could not provide real-world situations on why and how to use it. They make the point, though, that the TAFE courses were never attempting to duplicate the real-world situation and context of the workplace with its particular goals and imperatives; they were instead attempting to go beyond the specifics of situated learning and deliberately provide *unfamiliar* contexts to the learner, to stretch the learner’s experience in different ways:

Situated learning means not only that the situation limits what can possibly be learnt but it also directly imprints on all of the knowledge and skills that are learnt. An apprentice cannot learn to be a competent pipe or aluminium welder if the enterprise that he/she is indentured to does no pipe work or any work with aluminium. However, it also means if the apprentice welder is generally involved in very long fillet welds on large railway stock, that the knowledge of fillet welds is situated in that context... Learning in the work context is an outcome of the situation, the relationship between the apprentice and the supervisor, the nature of the work and the social and physical environment. It is imprinted with the world of paid work and the imperatives of productivity and profit. (Butler & Brooker, 1998, p. 81)

The difference—and tensions—between informal and formal contexts particularly showed up in the different interpretations of the supervisors (in workplaces) and the apprentices (doing the courses). Apprentices appreciated opportunities to learn the finer points of welding and perfect all the techniques and types of welds, to experiment with settings and materials and have time and lack of pressure to do so (no supervisor watching), and to learn about standards and judgement—all always with a teacher on hand for one-on-one attention. Supervisors, on the other hand, interpreted the “freedom to learn” aspect of the TAFE courses as a lack of discipline on the part of apprentices, even eroding the workplace culture they valued of “getting it right first time” and always being productive. They thought the TAFE courses did not address their specific workplace’s needs (for example, not enough pipe work or not enough emphasis on templates) and that teachers were therefore “out of touch with the industry”. TAFE teachers, on the other hand, were deliberate in extending apprentices’ skills beyond the immediate ones demanded of their workplaces. They also tried to develop in apprentices an internal locus of control (use of personal, intellectual, and social resources to tackle tasks and solve problems) rather than rely on their external locus of control (apprentices ceding responsibility to others in being told what to do and relying on their work being monitored by others). The emphasis on positive self-concept and

¹⁰ Technical and Further Education courses. TAFE institutes are similar to New Zealand technical institutes and polytechnics.

improved confidence is a feature of lifelong learning—something TAFE teachers wanted to promote (and something demanded by a knowledge society).

Although informal learning in the workplace is often championed as being more relevant to the “real” needs of the workers and the organisation (in contrast to classroom learning), this relevance can come up short in situations that demand more of workers, which they cannot be prepared for in advance. Discussions on “relevance” in schools and whether teaching and learning should be more or less theoretical or experiential in schools, produces a similar situation: “The danger of ‘instant relevance’ is that in its earnest desire to ‘meet the kids where they’re at’, it ends up leaving them exactly there” (Green, cited in Avis, 1991, p. 117). So in workplace terms, simple production values may dominate in a “business as usual” scenario, but they fail when the organisation is required to respond to new challenges—which is why Senge (1990) found that learning has been a key factor in organisational adaptiveness, productivity, and survival. The overall point of Butler and Brooker’s (1998) work is that each context—formal TAFE and informal workplace—offered different kinds of learning and precisely because they are driven by different priorities: the former by learning and the latter by production. The learning is inherently *situated* in that each person’s learning always has the imprint of the context in which the learning has occurred. Butler and Brooker’s ideal is that, through apprentices, the formal and informal can come together and be complementary.

Conditions and pedagogy to support workplace learning

There are a number of things that need to be in place for learning to occur and for learners to be supported in actually being able to really use the learning (in some ways, it is in the use that the learning occurs). The workplace itself is important in determining different forms of knowledge creation and use, and therefore also different forms of learning and pedagogical approaches (Fuller, Unwin, Felstead, Jewson, & Kakavelakis, 2007; Skippington, 2002). How people learn is shaped by workplace culture and production process.

So when it comes to workplace learning pedagogy, there is no sure-fire set of “things to do”. There are, instead, things to consider in relation to the structure of the organisation and its goals, the immediate workplace conditions, and the learners themselves. These things include:

- the sociocognitive demands (task complexity, what skills the worker needs)
- the sociointeractional requirements (whether one needs to work in and interact with teams)
- the importance of the job within the organisation (impact that specific task has on larger work process, on organisation, and relative prestige of worker)
- the access characteristics of knowledge (sometimes this is a technical question—where is the knowledge located and what do you need to read or understand?—and sometimes this is a political question—who is and is not allowed access?) (Cullen et al., 2002)

Other considerations include the wider, regulatory and sectoral environment and characteristics that provide a broad framework of operation for the organisation. For example, different market

conditions (competition within same niche), regulations (work rules, licensing, government), and technology (pace and nature of change in technologies used in organisation and difficulty of mastering new tools) make a big difference to how organisations might want to engage with workplace learning (Cullen et al., 2002; Fuller et al., 2007).

Studies have also found that access to workplace learning is differential in the way that it is accessed by workers and in the way that workers take it up. Access to opportunities to participate in the workplace—and learning—is inherently contestable because of competing groups such as newcomers and old-timers, full-time and part-time or contract workers, teams with different roles and esteem, individual workers' goals and careers, and institutions or groups representing different groups of workers (Billett, 2001).

Where people are positioned in the political economy of the workplace affects not only the types of learning in which they engage, and the types of knowledge they can acquire, but also the extent to, and manner in which, their learning and knowledge is recognised. The weaker the employee's market position, the less likely they are to have access to training and career development. But emergence of "new economy" and greater employee involvement means more learning-intensive workplaces (Fuller et al., 2007, p. 744).

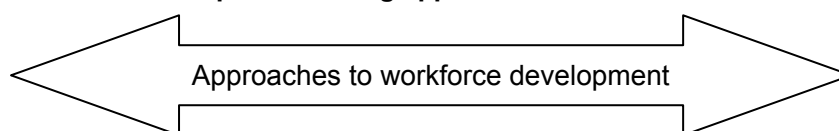
In other words, learning is really only as good as the opportunities to really participate in the organisation. There are an unlimited number of pedagogic techniques but without opportunities to participate, which encourage and support learning, these are moot:

Knowledge-rich organisations like hospitals and large corporations do not always prove to be the most educational, because they sometimes classify and frame the use of knowledge in ways that bar newcomers and other marginal players from growing participation in communities of practice. Work systems with weak classification and frame often afford interns greater access to that participation, and thus increase their learning. (Hughes & Thornton Moore, 1999, p. 38)

In a study of a manufacturing business, the most useful learning occurred when learners were provided with structured learning experiences and opportunities with graduated access to vocational experiences in order to gain competency. The vocational experiences were ideally long enough to provide a repertoire of experiences to ensure learning covered the scope of the vocational activities to be practised and learners could practise in circumstances *other* than where it was acquired (Choy, Bowman, Billett, Wignall, & Haukka, 2008).

Fuller et al. (2007) use evidence from case studies of workplaces in food processing, retail, software engineering, and steels and metals to illustrate that diverse organisational contexts produce a range of factors which can be located on a continuum from expansive to restrictive.

Table 3 **Continuum of workplace learning approaches**



Expansive	Restrictive
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 workforce development	Primary community of practice has little or no 'participative memory': no or little tradition of apprenticeship
Breadth of learning opportunities fostered by availability of cross-company/setting experiences	Narrowness of learning opportunities, opportunities restricted in terms of tasks/knowledge/location
Access to a range of qualifications including knowledge-based VQ	Little or no access to qualifications
Planned time off-the-job including for knowledge-based courses, and for reflection	Virtually all on-the-job: limited opportunities for reflection
Gradual transition to full, rounded participation	Fast—transition as quick as possible
Vision of workplace learning: progression for career	Vision of workplace learning: static for job
Organisational recognition of, and support for employees as learners	Lack of organisational recognition of, and support for employees as learners
Workforce development vehicle for aligning the goals of individual development and organisational capability	Workforce development used to restrict individual capability to organisational need
Workforce development fosters opportunities to extend identity through boundary crossing	Workforce development limits opportunities to extend identity: little boundary crossing experienced
Reification of 'workplace curriculum' highly developed (e.g. through documents, symbols, language, tools) and accessible to newcomers/apprentices	Limited reification of 'workplace curriculum' patchy access to reificatory aspects of practice
[substantive] skills are widely distributed throughout the organisational	[substantive] skills are located in particular parts of organisation
Knowledge and skills (including technical) of whole workforce developed and valued	Knowledge and skills of key workers/groups developed and valued
Managers as facilitators of workforce and individual development	Managers as controllers of workforce and individual development
Multi-dimensional view of expertise	Uni-dimensional top-down view of expertise

(Source: Fuller and Unwin, 2004, in Fuller et al., 2007, p. 745)

Fuller et al.'s (2007) study offers two different examples of expansive development. The first one offers an obvious expansiveness in that a software engineering company offers its employees a profit-sharing scheme, a specific ethos, a "family" atmosphere, is driven by people's careers and by collegiality, and able to attract university graduates who want to become a member of another "bright community". In such a knowledge-intensive organisation with many university graduates, it is easy to see how the personal and cultural knowledge of occupation and professional identity align to create an expansive learning environment.

However, the second example shows how this can be done with a less obvious workforce and organisation. In a prepacked sandwich business with 30 employees (van drivers and sandwich makers), the founders are managing directors with a hands-on approach. The directors' main challenge is how to take the business forward (expansion, capital investment in machinery, specialist personnel). They used their daily interaction with van drivers to share knowledge, experiences, ideas—including acting on ideas from the van drivers. This created a cultural knowledge about the business, as well as an everyday knowledge of people and situations. Although the company appeared at first to be a typical hierarchy, with a narrow role for van drivers, a closer look revealed a high degree of discretion in what they did (deliveries and interaction with different clients, adjusting their delivery content and timing according to the needs of the client). The directors recognised the complexity of their knowledge and activities and capitalised upon it.

In the Project LiNEA (Learning in Nursing, Engineering, and Accountancy) longitudinal study of professional accountants, engineers, and nurses during their first three years of full-time employment, learning in the workplace was enhanced by improving opportunities for productive engagement in a wide range of work processes (Teaching and Learning Research Programme, 2004, 2007). It also helped to work alongside a colleague for a while so that the learner-worker could ask questions and receive feedback about shared activities and events as they happened. This also allowed the learner to see how a colleague read situations, monitored them, and made decisions. Although many of the activities were tacit and difficult to explain, working in groups with people who had different kinds and levels of expertise seemed to help everyone understand the nature of that expertise and make better use of it in their own roles. Thus participants' commitment to their work, their colleagues, and their employers was affected by the quality of support and feedback they received, the appreciation of value of their work and personal sense of action and control. The allocation and structuring of their work, was crucial to their progress—more progress when their work was difficult or challenging, when it was collaborative, and when there were opportunities for meeting and observing and working alongside those with more expertise. Although these lessons relate to professionals not normally associated with industry trainees, the principles may still be highly relevant:

For novice professionals to make good progress, a significant proportion of their work needed to be sufficiently new to challenge them without being so daunting as to reduce their confidence. Their workload needed to be at a level that allowed them to respond to new

challenges reflectively, rather than develop coping mechanisms that might later prove ineffective. (Teaching and Learning Research Programme, 2007, p. 2)

These sorts of opportunities to participate, in conjunction with the worker's utilisation of opportunities, are called "affordances" by Billett (2001), who draws attention to the dynamic relationship between learner and workplace. Workplaces "afford" opportunities in particular ways that support (or detract) from learning and have a relationship with individuals who engage in work activities and learning in particular ways. Billett argues that a key determinant of the quality of workplace learning lies with the workplace's "readiness" to afford opportunities for learners to engage and that how workplaces do this (afford opportunity) is central to understanding workplaces as learning environments. Affordances are critical to the success of any learning or training programme and good learning outcomes are associated with rich affordances through opportunities to participate in work:

Establishing a workplace training system, without understanding the bases of participation, such as the workplace's readiness to be encouraged, and to support that participation, may lead to disappointment for both workers and enterprises. (Billett, 2001, p. 212)

In a case study of a New Zealand wine company, Mallon, Bryson, Pajo, and Ward (2005) used Billett's notion of workplace affordances, Fuller and Unwin's notion of expansive/restrictive approaches to workforce development, and the features of individual worker/learners to explore individual take-up of workplace capability development opportunities. The researchers confirmed that opportunities are indeed differentially distributed according to organisational hierarchy or type of job (more expansive for winemakers and vineyard managers and more restrictive for vineyard workers and cellar hands). However, this was actually useful for the organisation in order to limit oversupply of tertiary-qualified wine staff with career expectations by employing cellar hands and vineyard workers with limited immediate career expectations. Indeed many of the staff interviewed by the researchers were more focused on nonwork lifestyle pursuits than career development or "upward" career mobility. While proactive individual behaviour influenced the affordance of opportunities, a workforce with little formal education is less likely to be proactive unless consistently supported and encouraged by supervisors and the organisation. Thus how expansive or restrictive a workforce development environment is also partly depends on interpretation by the worker.

Billett (2001) also argued that participation should also be actively encouraged for those guiding the learning. An NZCER study of New Zealand school teachers (Cameron, Berger, Lovett, & Baker, 2007) has shown how vital their own learning is in order for them to be able to remain teachers and teach well. Teachers report that their working conditions determine to a large extent their opportunities to learn from their teaching and from their colleagues, as well as their enjoyment and satisfaction in their choice of career. Frequently, teachers learnt in spite of the organisation supports for learning provided by their workplaces and the authors argue that ongoing teacher learning and skill development is required for New Zealand's educational goals to be realised.

Employers can also be encouraged to reflect consciously on what they and their employees learn, so there is real potential to share learning and embed it in organisational practice—a true learning organisation (Maclaren & Marshall, 1998). One of the advantages of workplace learning’s emphasis on experiential learning, particularly within in-house training situations, is that it tends to facilitate the sharing of knowledge between all participants (Valkanos & Fragoulis, 2007). In one study of dry stone walling, it was the co-operation and learning *with* others that was crucial to the success of the learning (Farrar & Trorey, 2008). In some cases some workers may act as mentors to others, and may help some workers to see possibilities that were previously inaccessible (Billett, 2001; Dymock & Gerber, 2002). In another study, managers in charge of introducing workplace learning needed to be supported so that they could participate and express themselves safely and comfortably without fear of being criticised for “not knowing”. They also needed not to be held as solely responsible for the learning achievements of everyone else, particularly when the learning processes were so new (Miller, 2003). These studies highlight the need for experts and trainers to get support too (Choy et al., 2008; Natrins, & Smith, 2004).

Learners in the workplace

Workplace conditions and learning opportunities may be on offer, but without an understanding of the learners themselves, workplace learning cannot be successful. As with learning in any context, there needs to be an appreciation of people’s learning backgrounds—for example, their age, literacy, and numeracy levels, the characteristics of any social group they belong to. It’s also important to take account of their past experiences of learning and how they feel about learning now—their “learning careers” or dispositions to learn and the beliefs they hold about themselves as learners, developed through early learning experiences and continued into later learning experiences.¹¹ A learning career develops over time and changes as experiences of learning—and experiences of oneself as a learner—change. A learning career is not necessarily experienced in a conscious way but it does contribute to (learning) decisions and preferences in a working career, as well as an identity as a particular worker within a particular field.

Conclusions drawn from one Australian study suggested that mature-aged workers tended to be keen learners who were limited by a lack of confidence but they had other qualities that could be useful in carefully managed workplace learning programmes (Smith, Smith, & Smith, 2007).¹² The authors suggested that workplaces recognise that mature-aged workers were generally keen to learn, with a propensity for a stronger work ethic and greater life experience than younger workers. Mature-aged workers’ tendency to be shy about in-class discussions, their comparatively low literacy levels, and interest in task-related (rather than qualification-related) learning suggested that personal learner-trainer relationships worked best, especially if learning and

¹¹ See Bloomer and Hodkinson (2000) and Ecclestone and Pryor (2003).

¹² The study included a literature review, key interviews, and three case studies of manufacturing businesses.

teaching took place in the workplace (rather than the classroom), and that they could be good trainers of other (younger) workers who could respect their experience and knowledge.

Workplace learning is not just a one-way process then. It is an interaction between workplace, learning, and the learner. As with famous examples from the education theory literature on the interaction of “structure and agency”,¹³ individual workers can exert influence over workplace learning programmes through their dispositions impacting upon the use of workplace learning opportunities (how much they value learning), by (re)constructing workplace cultures and practices, and by bringing their tacit abilities and experiences to the workplace (which are variously recognised and utilised, or not, by employers) (Rainbird et al., 2003). As a study of automotive manufacturing workplace learning practices showed, workplace learning is as much about training and learning for attitudes (co-operation, enterprise) as well as for skills; as the manufacturing sector changes with technological advances and new forms of labour such as Just-in-Time, Toyota rules, total quality, simultaneous engineering, continuous improvement, *kaizen*, there is a shift to a training-intensive industry with new roles for workers as well as new skills (Dankbaar, 1999).

In an example of an electronics manufacturing business in the Middle East, trainers got around the different languages of the workers by developing a programme that created a workplace culture that involves the repetition of key technical words, a demonstration performance of the skills by an instructor (broken into parts) to observing students/workers, followed by practise of the skill by students/workers. This flexible technique was a workaround for communication challenges posed by trainers and workers speaking different languages (this technique also ran alongside translation work and computer-based training) (Holm & Strauss, 1998).

However, learners may not necessarily be amenable to some forms of flexibility in workplace learning. Learners may feel uncomfortable about learning in a new way that does not simply involve trainers telling them what to do know or do. Similarly, workplace learning may challenge some teachers’ and trainers’ occupational identities and attitudes in situations where there is a shift from teacher-centred to learner-centred and they are no longer The Knower, such as in a study of an engineering workplace (Stonyer & Marshall, 2002).

Learners were also resistant in adopting a new Integrated Pest Management system because it involved learning strategies of more open communication, problem-based learning, and discussions. Many of the learners and tropical fruit growers favoured older-style didactic methods of learning with an expert telling them what to do. However, the success of changing the management of pest control across agricultural workers meant moving away from assumptions that tropical fruit growers had a behaviour and knowledge deficit and just needed the learning experts to intervene (Elsy & Sirichoti, 2003). The programme was ultimately judged a success, mainly because so much time went into working carefully with the learners so they understood the

¹³ See *Learning to Labour* (Willis, 1977) and—a New Zealand example—*At School I’ve Got a Chance* (Jones, 1991).

new pest management system *and* new ways of learning about it. The learning approach reinforced the main message about pest management—that *judgement* was involved (that is, growers learnt to recognise pests and make judgements about spraying, rather than simply spraying according to a predesignated schedule unrelated to what was actually happening, thereby costing growers and consumers more).

Other researchers have pointed out that the different roles of employers and workers impact upon the learning. Managers and workers may have different perspectives because their roles are different (Hopkins & Maglen, 2000). While the ideal learner is one who is self-directed and a workplace would ideally support them to identify learning goals and engage with others in learning networks, they are ultimately “productive units” to their employers (Smith, 2003). Economic pressures on employers, particularly of small businesses, can put a greater emphasis on treating apprentices as “labourers” and not as learners, even when governments provide teachers and incentives (Choy et al., 2008).

Learners might also perform but not actually have learnt anything. Billett (2001) cites Wertsch’s (1998) example of supermarket check-out operators’ unenthusiastic use of salutations as “mastery” of the requirements of performance but without any “appropriation” or effortful engagement by the worker with what they are learning to do. The learning is superficial and never becomes part of the worker’s own repertoire of procedures and beliefs. If learners cannot find meaning or value in the activities, they choose not to learn—as with the case of coalminers who were sceptical of work safety training, which they believed was aimed to transfer the responsibility for safe working practices from the mine management to the miners themselves (Billett, 2001).

Care should be taken not to present workplace learning as an automatic win–win situation whereby individual learners learn at work and together form a learning organisation by virtue of being a collection of individuals, where the individual develops as the organisation grows. (Spencer, 2002):

Enthusiasm for ‘lifelong learning’, the ‘learning society’, and ‘learning organisations’ has dulled researchers’ critical gaze as to what exactly is going on in workplace learning. (p. 299)

Spencer suggests we focus on workplace *democracy* so that we don’t continue to be so enthusiastic about lifelong learning that we remain blind to the tension between work and learning. He cites Bratton’s (1999) findings of contradictory outcomes resulting from workplace learning and management reorganisation strategies and suggestions that the “brave new world” of workplace learning pedagogics may become a set of new oppressions and controls in the workplace.¹⁴ The research found that, after the application of a learning and skills profile, some long-time workers were downgraded and paid less. In other cases, “empowered” workers who

¹⁴ There is a considerable literature on how modern psychology and managerialism act to “normalise” and control people in specific ways. The work of Nikolas Rose is a good example.

challenged organisational policies were often silenced. There are, therefore, different interpretations of workplace learning and not everyone within an organisation shares the same goals; they have different interests which sometimes coincide but sometimes also collide. He also makes the point that not all organisations are the same and the same business rhetoric should not be imposed across public services, hospitals, nonprofit and nongovernmental organisations that have different ideas from private businesses about corporate capital, public good, quasi-democratic structures, clients, business plans, bottom lines.

Jackson and Jordon's (2000) study on the relationship between lean manufacturing and teamwork showed that problems in individual work performance, quality of work, or frequent absenteeism became an issue for team members to resolve among themselves, placing increased demands on individuals in the team in the name of "job enhancement". Where in the past, boundaries between jobs have been the basis for job classifications, pay rates, training entitlements, and other forms of benefits and protections for workers, training for job rotation through teamwork might now be part of dismantling these boundaries, and undermining the system of entitlements for workers and the power unions have had to make them stick. This can occur in part through crosstraining and multitasking and other forms of technical skills development that deliver clear short-term benefits to employers in terms of labour costs. Similarly, in the area of soft skills, communications among co-workers on the job has been a terrain highly valued by unionists seeking to build solidarity among workers, even an "incubator" for collective resistance to work practices that are experienced as unsafe or unjust. However, soft skills training for team work can have the explicit goal of reversing this situation, and ensuring that employers, not workers, benefit from the culture of work:

'Communication skills' and 'problem-solving skills' in the so-called 'new workplace' are defined specifically as those that enable team members to overcome any resistance (their own or others) and to embrace the goals, terms and conditions of work desired by the employer. The skills of 'problem solving' and 'communication' come to include the 'skill' of convincing one's peers to put the interests of the employer (e.g. production targets) ahead of the individual or collective interests of the workers (e.g. improved working conditions). (Jackson & Jordon, 2000, p. 206)

A study of pulp and paper industry workers also found workers reluctant to participate in workplace learning because of a paradox of individual workers learning new skills in the name of "lean manufacturing". By becoming multiskilled and increasing their flexibility within the workplace (for example, a pipe fitter can now also weld), they risked job losses as a collective of workers (Bratton, 2001). Workplace learning was seen as a key strategy for competitive advantage—not just utilising worker capabilities and knowledge but investing in them more generally to achieve flexibility and commitment. However, in this study the advent of workplace learning and lean production was linked to employers in British Columbia shifting away from industry-wide, multi-employer collective agreements negotiated with the union to decentralised, establishment-led bargaining, giving employers the opportunity to craft the particular demands of their workplace into each agreement.

While some of these examples may seem sinister in a world where a knowledge society and valuing previously undervalued forms of learning come to the fore, they do underline the importance of the learner in workplace learning and the potential for negative or unintended consequences for them.

Best practice principles

There are examples of best practice throughout this paper. However, although examples have been presented to highlight different aspects of workplace learning, it does not mean that there are lists of discrete factors. Learning is a complex activity, and more than the sum of its parts. So workplace learning cannot be reduced to a set of factors as if they were ingredients in a recipe, with each one contributing something different and identifiable to the overall product and a guarantee of working out the right way, every time. A more useful and valid approach to a complex area such as workplace learning is to think about the relationships and interaction *between* the different factors and aspects of good practice. The following table is a summary of best practices in terms of specific aspects of workplace learning, referencing some of the most useful accounts explaining each particular aspect. However, as this paper has sought to stress throughout, it is when these aspects are taken account of, and put together, that good (workplace) learning has a chance to occur.

While pedagogy (strategies for teaching and learning) is important, it is the culture of a workplace and the way that learning is organised and supported in a workplace that sets up what can be learnt and how it is learnt. The overall approach to facilitate and support learning and the learning activities is also an important contributor to the quality of learners' experiences. The following table sets out important considerations in creating and running workplace learning programmes. The first page or first section highlights in particular the workplace learning structures and climate. The second page or second section highlights workplace learning pedagogy and strategies. On each page, the first column summarises high-level principles in education and in the workplace learning literature and the second column shows possible ways to work with these principles.

Table 4 **Workplace learning principles and ideas**

	Workplace learning works best when...	These ideas could be adapted for different workplaces:
Workplace Learning Structures and Climate	<p>Workplace learning is aligned with or reflects the (desired) workplace culture</p> <p>The strategic directions of the business, and the nature of its challenges and opportunities, are reflected in the aims and processes of workplace learning</p>	<p>Ensure workplace learning reflects the level of complexity of the work environment.</p> <p>Ensure the learning opportunities meet organisational needs and are relevant to the careers of the learners.</p> <p>Co-ordinate a good fit between approach, content, and purposes (for example, for fun, self-esteem, learner's career, an organisational objective).</p> <p>Use trainers to assist in the identification of links between individual learning and workplace.</p> <p>Leaders or employers can seek feedback early and often on the impact of workplace learning.</p> <p>Make sure learners know about the approaches, how they will be assessed, time frames, and how to get support.</p>
	<p>Learning is adequately resourced with the right people and the right tools</p>	<p>Ensure facilitators have a sound knowledge of workplace learning methodology and the theories and approaches that underpin it, such as ideas from adult learning, action learning, and learning organisations.</p> <p>Give leaders such as employers, facilitators, and trainers opportunities to learn more about how to facilitate effective workplace learning.</p> <p>Ensure learning materials are well designed and appropriate for the learners as well as the organisation's needs.</p>
	<p>The organisation is committed to everyone's learning</p>	<p>Involve everyone—employers, learners, trainers, other stakeholders—in the design and implementation of work-based learning.</p> <p>Ensure that ongoing professional development and workplace learning are integral to everyone's work.</p> <p>Give everyone access to learning (not just full-time workers or supervisors or newcomers).</p>
	<p>There is sufficient time for learning to be meaningful</p> <p>Innovation and thoughtful risk taking are encouraged</p>	<p>Allow plenty of time for design and adaptation to specific organisational requirements and for the learning to take place and "take root".</p> <p>Allow time for learners to reflect, as well as practise, and have "time out" through off-the-job courses or networking.</p>
	<p>Opportunities to learn are part of everyday work (not add-ons)</p>	<p>Ensure learning is structured into everyday practices and relationships as well as the formal workplace learning programme.</p>
	<p>Formal and informal learning are integrated</p>	<p>Provide opportunities for workers to share expertise and learn from each other in their everyday work.</p> <p>Understand that formal and informal learning may be relevant in different ways or at different times.</p>
	<p>Learning is recognised</p> <p>Talent is identified and nourished</p>	<p>The organisation should base its decisions on data, not opinion.</p> <p>Trainers need to have regular and effective communications with employers to keep them informed of learners' progress.</p> <p>Some workers may be good mentors for other workers.</p>

	Workplace learning works best when...	These ideas could be adapted for different workplaces:
Workplace Learning Pedagogy and Strategies	<p>The programme and teaching are sensitive to the learners' pace and level</p> <p>Trainers take the "learning careers" and previous learning experiences of the learners/workers into account</p> <p>Learners understand what the goals and processes are</p>	<p>Take time to identify learning support needs and base the teaching and learning processes around the learner's own pace.</p> <p>Assess learners and ensure that they are placed with others who are on the same level, as learners who are intimidated may have decreased learner motivation, attendance, and achievement. However, also include a mix of skills to allow for expertise to be shared.</p> <p>Trainers can establish close contact with learners at the beginning of a programme to ensure they do not feel isolated or left out or left behind.</p> <p>Train for long enough that a repertoire of activities, experiences, and opportunities can be developed to build and refine skills. It is the length and potential diversity of learning experiences that create the understandings which underpin quality.</p>
	<p>It is built upon the idea of lifelong learning</p> <p>Learners are engaged and have some ownership over the goals and processes</p>	<p>Trainers should reflect on their own actions in facilitating learning and encourage critical reflection in learners.</p> <p>Trainers can model lifelong learning by modelling their approach to new tasks for learners and making transparent the processes of learning (including any frustrating parts of the learning process).</p> <p>Recognise learning in ways that promote career progression rather than static skill acquisition related only to one task.</p> <p>Involve learners in setting the goals and feeding back learning and ideas into the organisation.</p> <p>Learners have opportunities to participate and use their knowledge in the organisation.</p>
	<p>The learning is relevant</p> <p>The learning occurs in the context in which it will be used</p>	<p>Ensure the learner is set measurable targets for improvement.</p> <p>Involve learners in their learning process by gaining feedback on their experiences and on the topics that motivate and interest them.</p> <p>Involve learners in solving real-life organisational problems and issues.</p> <p>Off-the-job learning is scheduled so that it does not interfere (or interferes as little as possible) with business.</p>
	<p>A flexible range of pedagogical approaches is understood and used appropriately and thoughtfully</p>	<p>Use action learning cycles: planning for action; taking action and testing out plans; reflecting and analysing outcomes; and refining plans and repeating with refinements. These cycles are an effective way for learners to use self-awareness to help develop new knowledge, skills, and attitudes.</p> <p>Use and create networks (for example, conferences, virtual communities) to get new ideas and build community within the organisation and with outside organisations, industries, and skilled workers groups.</p> <p>Facilitate and encourage peer mentoring in the workplace.</p> <p>Use small groups as well as "whole classes" to foster participation and learner-to-learner interaction.</p>

Further research possibilities

A review of the literature shows clearly that there is no “one-size-fits-all” approach to workplace learning. Given this, there is a need for more empirical studies in order to get a better understanding of workplace learning in different and specific contexts and industry areas, including some of the learning and benefits that are buried deep within everyday workplace practices and conditions (Billett, 2001). More empirical studies would also allow us to better design programmes to support learning: exactly what conditions bring about the best learning?

Empirically grounded case studies are vital in order to: (a) avoid making easy assumptions about the complexity and value of workplace learning based on employees’ structural position in organisations, or the sectors in which they work; (b) expose the range of knowledge sources available (and not available) in the workplace; and (c) understand the relationship between personal and collective knowing, the social and technical relations of production (including job design and work organisation), and organisational outcomes. (Fuller et al., 2007, p. 756)

Further studies of workplace learning might also look into distinctions between *workplace learning* and *training* and how we might recognise the differences and choose the right one for different situations and industries. What are the links between learning theories and organisational realities or specific business imperatives? Further research here might involve a dual approach: firstly a small and very specific review of literature to compare workplace learning and training, highlighting differences and compatibilities, and empirical studies of workplaces to ascertain different aspects of workplace learning and training in action.

Cullen et al. (2002) suggest studies of team learning and learning in groups as we know little about learning processes in groups. Much existing educational theory and research (not directly connected with workplace learning) has focused on individual learning processes, stemming from a view that knowledge is an individual matter. Recent discussions on skills and dispositions most useful in a knowledge society suggest an increasing need not only to function well in teams but to actually be able to learn as teams as well.

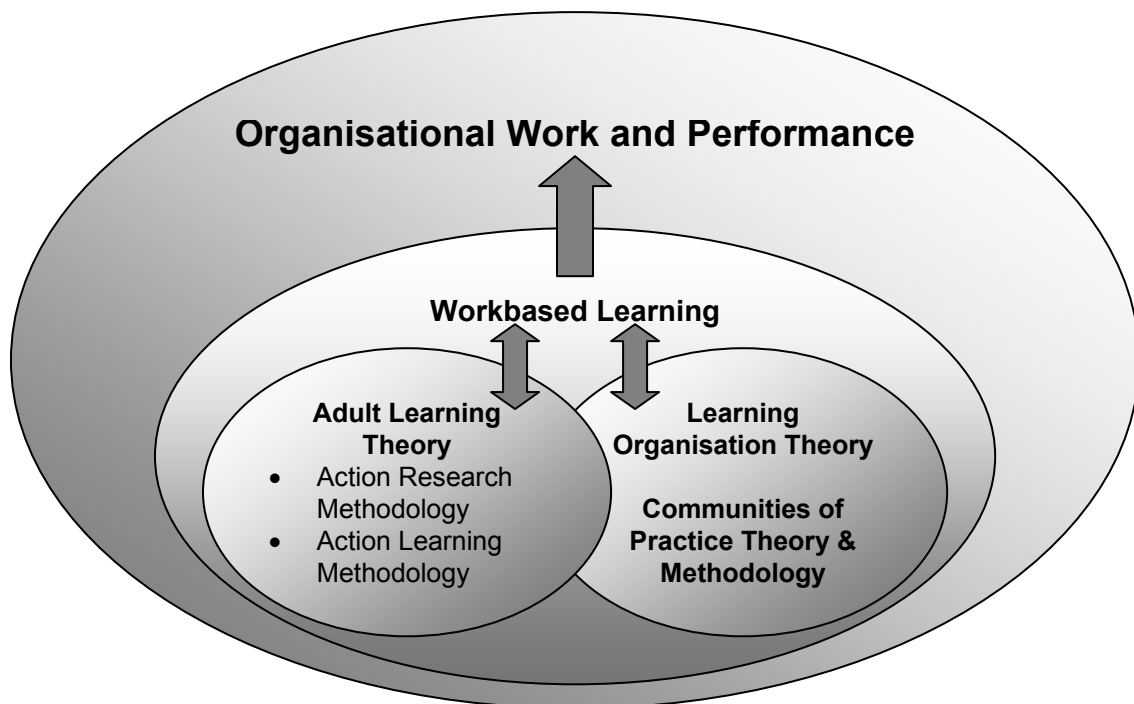
There could be useful work in examining how the two main general learning metaphors of *acquisition* and *participation* (Sfard, 1998) operate in workplace learning situations and whether new metaphors to guide workplace learning theory could be developed. Metaphors tend to guide the ideas with which we think. So new metaphors might powerfully recognise that the 21st century is no longer only about *knowing* (acquisition) but also about *doing* (participation) and that these are *neither* academic *nor* vocational in the sense of being mutually exclusive within individuals or teams or organisations but are skills and dispositions from *both* traditions that can usefully be combined within individuals, teams, and organisations.

Further studies might also investigate the roles and behaviour of the various different stakeholders involved in workplace learning and the learning experiences of different groups of learners. What should the role of educators be in relation to workplace learning? What knowledge and skills do

educators or workplace trainers and assessors need in order to develop the skills and sensibilities required to work effectively with adults? In what ways can they model lifelong learning and encourage networks and communities of practice within and across workplaces?

This report began by pointing out that workplace learning draws on a number of different bodies of literature. This is shown in the following diagram.

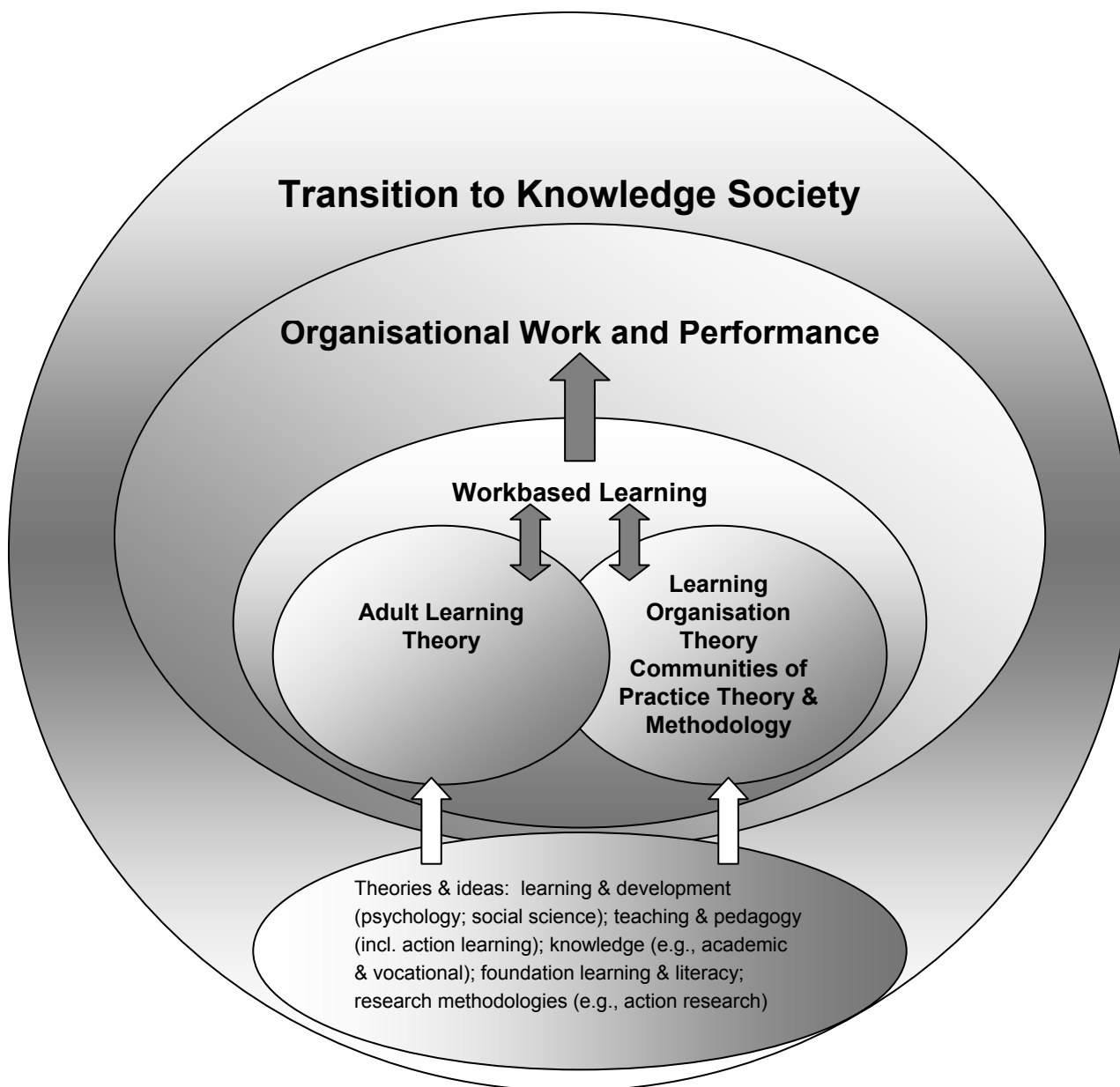
Figure 1 **Interconnectedness and dynamics for workplace learning within an organisation**



(Source: Mitchell et al., 2001, p. 34)

However, for the purposes of considering workplace learning in its current social, political, and economic context, we suggest an adaptation to the diagram, so that the broader context—the transition to a knowledge society and some of the theories and ideas that inform workplace learning within the “big picture”. The diagram is also adapted to show that action research and action learning methodologies do not inherently belong to adult learning theory but rather sit with the theories and ideas that inform adult learning theory. The adapted diagram is shown in the following figure.

Figure 2 Interconnectedness of workplace learning theories within a modern context



Therefore in any further research we would suggest an overall approach that does two things. Firstly, research should look at workplace learning *in practice* and in specific industries and workplaces, not just in theory. This is because there is considerable variation not only in what practices occur but in the ends to which they occur. For example, there are not necessarily shared ideas about what constitutes successful learning or successful outcomes from workplace learning beyond some very broad principles. Secondly, research should ground itself in an understanding that workplace learning is not an abstract idea or about learning for learning's sake. It needs to be understood as *learning for* something in particular and it is a specific social, economic, and political context that shapes what that is, what counts as workplace learning, and what counts as successful workplace learning.

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