

Workplace participatory practices: Conceptualising workplaces as learning environments

Stephen Billett
Griffith University
Australia

Billett, S. (2004) Workplace participatory practices: Conceptualising workplaces as learning environments. *Journal of Workplace Learning* 16 (6) 312-324.

1. Workplaces as learning spaces

This paper discusses workplaces as learning environments emphasising workplace participatory practices as conceptual foundations. These practices comprise the kinds of activities and interactions workplaces afford learners, on one hand, and how individuals elect to participate in workplace activities and interactions, on the other. Underpinning both workplace affordances and individuals' participation are the associated concepts of intentionality and continuity. Workplaces intentionally regulate individuals' participation; it is not ad hoc, unstructured or informal. This regulation is a product of cultural practices, social norms, workplace affiliations, cliques and demarcations (Billett 2002a). Those who control the processes and division of labour, including interests and affiliations within the workplace regulate participation to maintain the continuity of the workplace through regulatory practices (Grey 1994). Similarly, individuals will engage in ways that best serve their purposes, such as how it will assist their career trajectory, securing opportunities, or even locating easy work options. There is no separation between engagement in thinking of acting at work and learning (Lave 1990, 1993; Rogoff 1990, 1995). Therefore, the kinds of opportunities the workplace affords individuals in terms of the activities they engage in and interactions with others, and how individuals elect to engage are salient to their learning through participation in the workplace.

Commencing by arguing for fresh appraisals of workplaces as learning environments, the paper challenges some current assumptions. Then through a consideration of workplaces as historically, culturally, and situationally shaped environments in which individuals elect to engage in particular ways, workplace participatory practices are advanced as premises for understanding and organising learning through work. Central here are the relationality interdependent processes shaping individuals' learning in workplaces. These comprise the negotiations occurring between individuals' desire for continuity through engagement and how opportunities are afforded on the basis of the continuities of affiliations, interests and particular workplace goals.

2. Critiquing some existing conceptions of workplaces as learning environments

To conceptualise workplaces as legitimate environments, it is necessary to transform the current discourse on learning through work. Describing workplaces as being informal, non-formal or unstructured learning environments is negative, imprecise and ill-focused (Billett 2002). These descriptions do little to assist elaborate understanding or standing of workplaces as learning spaces.

Describing something by what it is not: (e.g. informal - not formalized or unstructured - not structured) does little to illuminate its qualities or characteristics, in this case, workplaces as learning environments. Moreover, concepts and assumptions associated with educational institutions are often used uncritically as premises for what constitutes the formalisms and structure of legitimate learning experiences. As teaching and learning are commonly, albeit erroneously, held to be synonymous, the absence of qualified teachers and classroom-like interactions in workplaces leads to assumptions that learning, if it occurs at all, will be inferior to that arising in educational institutions (e.g. Collins, Brown & Newman 1989, Prawat 1993, Ericsson & Lehmann 1996). The absence of written curriculum documents used to plan teachers' actions and learners' experiences, qualified teachers and didactic teaching practices, all raise the concern that learning through work will be at best ad hoc, weak, concrete and incidental (Marsick & Watkins 1990, Resnick 1987). So, from perspectives privileging the practices of educational institutions, learning experiences in the workplace might well be viewed as being ad hoc and weak because they are inconsistent with these practices. Yet, it is imprecise and misleading to describe individuals engagement in work activities as being unplanned or unstructured, as they are highly structured and intentional. Moreover, there are pedagogical qualities to

participation in work. Indeed, rather than being incidental, these experiences are often central to the work practice's continuity. The degree by which workplace experiences are generative of concrete outcomes (i.e. those that are only applicable in the circumstances of the acquisition) is often important for this continuity. Of course, concerns about the development of transferable knowledge through experience outside of educational institutions are legitimate (Evans 1993, Prawat 1993) and easy to raise. However, learning arising from experiences within education institutions is also far from immune from these outcomes (e.g. Scribner 1984, Raizen 1994). There is evidence of both adaptable learning occurring outside of educational institutions (Rogoff & Lave 1984) and concrete learning arising from experiences inside educational institutions (Raizen 1994). Such evidence challenges easy assumptions about workplace learning experiences being inherently weak. Instead, it suggests that the qualities of experiences (i.e. activities and interactions) afforded by either educational institutions or workplaces, shape the potential richness of the learning outcomes. Importantly, it is mistaken to assume that learning environments outside education institutions lack these qualities, whilst somehow being in privileged in those institutions.

Secondly, rather than being without structure and intent, workplace activities and interactions are highly structured and regulated, and have inherent pedagogic al properties. Just as educational institutions' goals, norms and practices frame the activities students participate in, who is allowed to participate in those activities, and on what basis and how they will be judged. Bernstein (1996) referred to these as regulative practices. Similarly, workplace goals and practices determine the tasks and activities in which workers engage in, what support they were received and how their efforts will be appraised (Billett 2001a; Lave 1990; Scribner 1988/1997). Rather than being unstructured and ad hoc, participants' engagement in different kinds of social practices are often central to the continuity of that practice. Whether participating in weaving (Childs & Greenfield 1980), coal mining (Billett 2001a), midwifery (Jordan 1989), hairdressing (Billett 2001a) and tailoring (Lave 1990), this activity is intentionally organized to structure workers' access to the knowledge needed to sustain those practices. This structuring has been referred to by Lave (1990) as the 'learning curriculum' -- a pathway of experiences that leads to full participation in the social practice. Of course, as in education institutions, there will be unintended participation and unintentional learning in workplaces, a hidden curriculum if you like. The key point is that participation and learning are central to the on-going existence of these practices and is regulated by the workplace.

Thirdly, to describe learning environments as being either 'informal' or 'formal' assumes a deterministic relationship between the circumstances in which the learning occurs and changes in individuals. This constitutes situational (social) determinism and ignores the role of human agency in the construal of what is experienced and what learning arises from that experience. Even the most structured learning experiences can only shape individuals' learning. It seems that, individuals have to ignore most of social suggestion in order to maintain their own sense of purpose and direction (Valsiner 1998). Wertsch (1998) notes how unwelcome social press may lead to a superficial kind of learning, referred to as mastery. He distinguishes this kind of learning from appropriation (Luria 1976) where individuals embrace as their own the knowledge that they are engaging with. Knowledge constructed through mastery is less likely to be exercised voluntarily and effortfully, than what is appropriated (Wertsch 1998). All this emphasises the important role of human agency in the negotiation process of individuals' knowledge construction. So, much of the learning that arises may differ from what is intended by the exercise of the workplace's norms and practices, for instance.

These three propositions suggest the need to avoid terms such as 'informal' or 'formal' when describing workplaces as learning environments. In the following section, the concepts of participation and participatory practices are advanced as more effective and precise terms to elucidate the process of learning through work.

3. Participation and participatory practices at work

The concept of learning can be understood as permanent or semi-permanent changes in how individuals think and act. When individuals engage in everyday thinking and acting, more than merely executing a process or task, their knowledge is changed in some way, however, minutely by that process. Learning is not reserved for particular settings or interludes, although some experiences may provide richer learning outcomes than others. So, when individuals engage in workplace activities they are doing more than merely deploying their capacities in engaging in those tasks. A

cognitive legacy in the form of change arises from engagement in even the most routine of activities. The most likely change arising through everyday thinking and acting in workplaces will be to reinforce or hone what is already known. Drawing on cognitive perspectives, engaging in routine or familiar work tasks reinforces and refines what is already known (Anderson 1982). This kind of learning is nevertheless important for refining procedures and rendering tasks to be undertaken with minimum resort to conscious thought. This then frees up working memory to focus on other tasks. This permits the individual to use their cognitive resources more selectively and strategically. For instance, focusing on parts of a task that are difficult to perform or are highly complex, requiring the simultaneous consideration of a variety of factors. So when cognitive processes are engaged, even the most apparently familiar experience is always new in some way (Valsiner 2000), which is generative of new learning. However, when engaging in activities that are new to the individual there is a potential to extend what the individual knows, through the creation of new cognitive structures. So when engaging in new work tasks new learning might arise. Cognitive learning theories hold that in overcoming problems, new learning arises (Anderson 1982). Piaget's (1976) notion of overcoming disequilibrium, the unknown in what is encountered, through the processes of assimilation (i.e. reconciling what is experienced with what individuals already know) and accommodation (i.e. inciting new categories of knowledge from experiences) similarly positions thinking and learning as one process. Also, Meade (1934) proposed learning as an on-going stream of conscious thought that constitutes and contributes to individuals' cognitive processes over a lifespan. This view is shared by accounts from anthropology proposing associations between practice and learning (Lave 1993, Pelissier 1991). Lave and Wenger (1991) and Rogoff (1995) refer directly to participation in social practice as being analogous to learning. Rogoff (1990, 1995) refers to the moment-by-moment accrual of knowledge through encounters with the social world; micro-genetic development.

Collectively, these perspectives on learning, albeit with different emphases, hold that more than an end in itself, participation in activities, such as those in workplaces, incites change in individuals' understandings and capacities (i.e. learning). While some cognitive theorists only associate encountering novel problems with learning, this fails to account for the person-dependent nature of what constitutes a novel task and the different ways of engagement with the same 'new' task. In keeping with ideas of the ongoing processes of knowledge construction advocated above, it is proposed that learning and participation in work are inseparable. However, these processes are not individual acts of cognition. The work activities individuals engage in have historical, cultural and situational geneses. Most of the knowledge humans learn is not wholly new, although it may be novel to the individuals encountering it. Vocational practices have historical, cultural and situational origins (Billett 1998). The same goes for domestic tasks in the home (Goodnow & Warton 1991) or parenting (Rogoff 1990) and those practices privileged in educational institutions. They are all practices that have evolved over time to meet the requirements of particular cultural needs (Scribner 1985) and are constituted in particular ways in each setting, such as workplaces (Billett 2001b). So engaging in workplace activities interdependently links individuals thinking and acting and their learning to social sources. Workplaces provide interactions with human partners and nonhuman artefacts that contribute to individuals' capacity to perform and the learning that arises from their performance. These contributions to learning are conceptualised as being inter-psychological -- between individual social world -- before becoming intra-psychological attributes -- a cognitive attribute (Vygotsky 1978).

These inter-psychological processes are interdependent. Learning inter-psychologically is not a process of socialisation or enculturation. Instead, individuals engage actively in the process of determining the worth of what they experience and how they might engage with it and learn from it (Goodnow 1990). Valsiner (1994, 2000) refers to the co-construction of knowledge: the interdependent process of individuals constructing of knowledge through relational interaction with a social source. That is, individuals will elect how they engage and what they construct from that engagement, while social practices are able to provide different levels of pressure for individuals to engage with particular knowledge. Similarly, Rogoff (1995) suggests in the reciprocal process of learning both the object and the subject are transformed through interaction. The concept of co-participation at work (Billett 2001a, 2002b) has been used to account for the reciprocal processes of learning shaped by interactions between what is afforded by the workplace and how individuals elect to engage with what is afforded. In this view, workplace affordances are shaped by local negotiations (Suchman 1997) and orderings (Engestrom & Middleton 1996). These localised needs constitute the

particular requirements for work performance. These cannot be appraised other than in the situation where tasks are undertaken and the conditions for and judgments about those performances are exercised. However, situational factors alone are insufficient to understand workplaces as learning environments. What is required is understanding of the way individuals' agentic action and intentionalities (Somerville 2002) shape how they participate in and learn through work. This agency has social as well as cognitive geneses. The kinds of social experiences individuals have throughout their life history contribute to what constitutes their subjectivity and identity in shapes their exercise of their agentic actions.

In considering learning as participation in work, it is important to stress that engagement in and what is learnt from socially-determined practices is not determined by the social practice. Instead, individuals decide how they participate in and what they construe and learn from their experience.

4. Workplace participatory practices

Considering learning in workplaces as participation is important for key reasons. Firstly, if learning is seen as a consequence of participation in social practices, (such as those involved in the production of goods or services), rather than as something privileged by participation in educational institutions, this may broaden the bases to understand and legitimate learning generally and learning through work, in particular. Learning occurs in circumstances other than educational institutions. Neither Piaget's (1968) processes of overcoming disequilibrium, nor the sociocultural concept of micro-genesis, are reserved for particular kinds of social or physical settings. They constitute responses to everyday encounters and experiences, such as those occurring in workplaces. Therefore, considerations of the consequences of individuals' engagement in workplace activities and access to its affordances may inform a broadened view of learning experiences and their enhancement. Certainly, the widening acceptance of learning as an inter-psychological process (i.e. between individuals and social sources of knowledge) prompts a consideration of learning as engagement with the social world generally, and not only through close personal interactions as Vygotsky (1978), but also through engagement in the physical and social environment that constitutes the workplace.

There are also worthwhile procedural reasons for making participation and participatory practices a central foundation of a workplace pedagogy. For most workers, the workplace represents the only or most viable location to learn and/or develop their vocational practice (Billett 2001a). This goal has become urgent given that in current lifelong learning policies and practices (OECD 1998). In these policies, the responsibility for maintaining the currency of vocational practice is being increasingly transferred to workers. Consequently, understanding how the opportunities to engage in work, the kinds of tasks individuals are regulated and the guidance provided becomes key to evaluating how and what individuals are able to learn through work and their working lives. As work sites are the prime source of the knowledge required for work, how opportunities to participate are distributed across workers or cohorts of workers in often-contested workplaces becomes an important factor in learning throughout working life. Moreover, workplace affordances or their invitational qualities are also likely shape how individuals elect to engage in goal-directed activities and to secure direct guidance through close or proximal interpersonal interactions between experts and novices or more indirect (distal) kinds of guidance, for example, through opportunities to observe and listen (Billett & Boud 2001). Both these kinds of guidance have consequences for the knowledge individuals' construct. Close guidance is important for learning knowledge that would be difficult to learn without the assistance of a more knowledgeable partner (Rogoff 1995). Learning the concepts underpinning vocational practice (e.g. service requirements, force factors, hygiene) or processes and concepts that are hidden (e.g. electronic processes, past practices that shape current approaches) likely require close interactions with more experienced co-workers who can make these concepts and practices accessible. Indirect guidance contributes to how tasks are undertaken and completed. However, as with participation in activities, the contribution of guidance is dependent on learners' engagement (Billett 2003). What directs individuals to engage in the demanding tasks of learning new knowledge and refining what they already know is premised on their interest and agency. Participation and learning need to be seen and the interdependent processes in which individuals exercise their agency, hence the term participatory practices.

But, what of the quality of learning through participation? A key basis by which learning environments are judged is the degree by which they are able to support the development of robust

learning outcomes; i.e., the knowledge that can be applied elsewhere. As noted, it is often assumed that learning in social settings other than those specializing in teaching will lead to highly specific and concrete outcomes (e.g. Resnick 1987, Marsick & Watkins 1990, Prawat 1993, Evans 1993). That is, the scope of the application of what has been learnt is limited to the circumstances of its construction. However, the learning arising from activities in workplaces is not necessarily concrete. Adaptable learning is incited in places other than educational institutions. Rogoff (1982) and Rogoff and Gauvain (1984) found that the potential for transfer from non-schooling kinds of activities was as great as that from school-based activities. Indeed, the development of what Vygotsky (1978) refers to as scientific concepts, which are held to be more robust than everyday concepts, is not dependent on where they were learnt, but whether the concepts and procedures were made accessible in ways that incite their adaptation to other circumstances (Glassman 2001). Moreover, assumptions about widespread transfer need to be challenged given the paucity of transfer of learning from educational institutions, whose include the development of robust knowledge (e.g. Raizen 1994). In all, the idea that there are inherently transferable capacities that can be learnt and applied universally seems fanciful. The requirements for what constitutes a problem and the bases for judging performance, such as elegance of solution, are often highly situational (Billett 2001b). Given the need to account for diverse situational factors and requirements for performance of, it is unlikely that capacities that have universal applicability can ever be realized. Put plainly, expectations of high levels of transfer from learning in any social practice and, particularly between different practices, are unrealistic. The exceptions are perhaps specific procedures, for example, key boarding and wiring a power point, whose enactment can be transferred directly, although even here the goals to which they are directed will differ, and top-level heuristics, such as 'look-before-you-leap' and 'think-before-you-act' (Evans 1993). Taking this view, conceptualizing adaptability and expectations for transfer might shift from a focus on capacities to perform across broad domains of activities (i.e. an occupation) to a focus on situational performance requirements (i.e. in a particular workplace): practice.

Having proposed a case for learning as participation, the next section elaborates the bases for participation in workplace settings.

Bases for participation in workplaces

As proposed above, the invitational qualities of a workplace are constituted by factors associated with its norms and practices and directed to secure its continuity. These include those associated with the continuity of the work practice itself and the maintenance of particular interests within the workplace.

Workplace affordances as continuity of and interests within the practice

The basis for participation and learning in work practices, and its regulation is the continuity of the work place or work practice. As noted, there is evidence of the deliberate structuring of learning experiences within in workplaces in order to maintain their continuity. This evidence refers to both the overall structuring of learning experiences and the intentional development of specific procedures and concepts, and through intentional pedagogic strategies (see Pellisier 1991). The structuring of these kinds of learning experiences is essential to the continuity of the workplace, as it needs these capacities to produce goods and services and respond to new challenges. Moreover, participation more generally is structured and regulated by workplaces' norms and practices. Yet although primarily concerned with the continuity of work practice, rather than individual learning, the structuring of these experiences is often inherently pedagogic, because they are concerned to secure continuity through participants learning.

However, the regulation of workplace learning experiences is not benign. It serves the needs of particular interests. To preserve their standing, full-time retail workers in pharmacy chain stores deliberately constrained what activities part-time workers engaged in and the degree of support that they were afforded (Bernhardt 1999). Coal miners provide access to support to co-workers on the basis of their industrial affiliations and seniority (Billett 2001c). Hence, workplace participatory practices are often contested. This contestation arises between 'newcomers' who are seeking to participate more fully and 'old-timers' who fear displacement (Lave & Wenger 1991) and attempt to regulate participation. Similarly, seniority in workplaces (Dore & Sako 1989) and work demarcations (Danford 1998) influence the bases of the regulation and access to work-tasks and guidance, particularly for prized opportunities that can lead to individual advancement of high levels of

remuneration. There is also contestation between institutionalised interests, such as those of workers and management (Danford 1998), that leads to the regulation of workers' participation. Alternatively, the regulation of opportunities may also reflect employers' attempts to maintain control of the workplace's activities and thereby limit the range of tasks and decision-making in which certain workers are permitted to engage (Danford 1998). Consequently, work practices can deliberately regulate individuals' participation in the workplace (Billett 2001a) in order to best suit the enterprises' goals and continuity. This regulation of participation might be directed to maintain the work practice's viability, in terms of its required level of skill utilisation, or quality of service. Overall, these regulatory practices (Bernstein 1996) serve to distribute opportunities for engaging in new or prized work activities (from which new learning might be derived) and access to guidance and support. Consequently, individuals or cohorts of individuals may experience different kinds and degrees of affordances, depending on their affiliation, associations, gender, language skills, employment status and standing in the workplace, because of these regulatory practices.

The bases for maintaining continuity of practice are multi-faceted, complex, negotiated, regulated and contested. Given that learning arises from the kinds of participation in work and support to secure what cannot be learnt alone, how work practice and interests within it regulates these opportunities will influence the quality of individuals' learning experiences. In all these, the exercise of power and control is evident in the regulation of opportunities. Therefore, workplace learning experiences are not ad hoc, informal or unstructured. They are structured by power and interests (Bierema 2001, Solomon 1999). In these ways, workplaces represent a socially constituted and contested learning space whose participatory practices are key pedagogical devices.

Individual engagement

Despite the regulation of participation, decisions about engagement in and the learning that arises through work are not situationally determined. Individuals' agency and intentionalities also mediate and shapes their engagement in work practice and what is learnt through that engagement. This represents the other dimension of workplace participatory practices. Individuals are not passive in their participatory practices and learning (Billett, Barker & Hernon-Tinning in press) or the construction of occupational identities (Somerville 2002). Instead, their agency determines how what workplaces afford is construed and judged worthy of participation. Individuals' agency also determines how they engage in the process of learning, with rich learning being particularly effortful. Individuals' socially constituted personal histories or ontogenies (Scribner 1985) engender identities and subjectivities that incite particular ways of knowing, understanding and engaging with the social world. These personal histories are uniquely socially-shaped through participation in different social practices throughout life histories (Billett 1998). Consequently, individuals' engagement in and learning through work will always be unique in some ways (Valsiner 2000). This is made so by the inevitable negotiation between the workplace's norms and practices and individuals' subjectivities and identities that will transpire in as the two intersect during participation. Therefore, not surprisingly, individuals elect to dis-identify with social practices in which they engage (Hodges 1998); workers will resist engaging in team work when it clashes with their cultural mores (e.g. Darrah, 1996), workers will avoid participating in training that compromises their employment options (Billett 2001 a) and new recruits will ignore and deny affordances intended to assist their participation (Billett 2001a). To illustrate this last point, one new worker treated with belligerence his assigned workplace mentor and scoffed at the affordances of the workplace, as he believed he was more competent than his mentor and his vocational practice more sophisticated than that being enacted in his new workplace (Billett 2001 a). The tension here is between the goals and intended continuities of the work practice and those of the individual.

Much of the above has argued against an unquestioned privileging of educational institutions as sites for learning. However, a distinction between workplaces and educational institutions may reside in learners' identities. Individuals participating in educational institutions may hold different kinds of identities and subjectivities, whose purposes are to engage deliberately in knowledge construction, than those who are positioned as workers in workplaces. Hence, there may be different bases for agentic action for some individuals. For instance, Somerville (2002) reported cathartic incidents had to occur in workers' lives (e.g. work accidents or serious health problems) before they embraced an identity associated with deliberate learning (e.g. to work more safely, to live healthier).

Therefore, learners' personal workplace experiences are likely to incite the agentic actions that are central to learning through work.

In sum, workplace learning experiences represent an interaction between the enactment, even the regulation of the social practice of the workplace and individuals' agency as they engage in paid work activities. Whether considering workplace learning through participation in everyday work or through intentionally organized learning activities, these interdependent participatory practices are likely to shape both the learning process and outcomes.

Workplaces, learning and participatory practices

This paper proposes workplaces as learning environments that are negotiated and constructed by individuals, albeit mediated by what is afforded and regulated by the workplace, as well as the cultural norms and practices being exercised through the work practice. Central to the conception proposed here is the interdependent and possibly contested process of participation in workplace activities and interactions. Ongoing participation may be essential for individuals to secure the capacities required for work. More than once-off sources of initial learning, participation in work practices is increasingly becoming an ongoing requirement to maintain competence as work practices and goals transform (OECD 1998). The kinds of activities and interactions individuals participate in will be central to their learning of, transformation and elaboration of these capacities. However, their engagement in workplaces is subject to interests within it and the continuities of the social practice, as manifested in the regulation of participatory practices. Changes in an individual's participation are likely to have consequences for other workers (Billett et al in press). This participation may be actively supported, welcomed, resented or actively opposed. Conversely, despite efforts to regulate participation, there can be no guarantee that these intents will be fully realised. Individuals will decide how they will participate in and what they learn from what they experience. So more than seeing workplace as physical and social environments, they need to be understood as something negotiated and constructed for interdependent process of affordance and engagement. The concept of workplace participatory practices has been advanced here to begin to account for these interdependent processes. It is held that, whether learning through engagement in everyday work activities or through intentionally organised learning processes in the workplace (e.g. mentoring, guided learning, action learning) this interdependence will shape the processes of learning. Moreover, workplace participatory practices provide a platform upon which to construct a workplace pedagogy.

References

- Anderson, J. R. (1982) 'Acquisition of cognitive skill' *Psychological Review*, 89 (4), pp. 369-406.
- Bierema, L. L. (2001) Women, Work, and Learning. In T Fenwick (Ed.) *Sociocultural perspectives on learning through work* San Francisco: Jossey Bass/Wiley.
- Berhardt, A. (1999) *The future of low-wage jobs: Case Studies in the retail industry*. Institute on Education and the Economy Working paper No 10 March 1999.
- Bernstein, B. (1996). *Pedagogy, Symbolic Control and Identity: Research Critique*. London, Taylor and Francis.
- Billett, S. (2003). *Individualising the social - socialising the individual: Interdependence between social and individual agency in vocational learning*. 11th Annual International conference on post-compulsory education and training: Enriching learning cultures, Gold Coast, Australian Academic press.
- Billett, S. (2002) Critiquing workplace learning discourses: Participation and continuity at work *Studies in the Education of Adults* 34 (1) pp. 56-67.
- Billett, S. (2001a) *Learning in the workplace: Strategies for effective practice*. Allen and Unwin, Sydney
- Billett, S. (2001b) 'Knowing in practice: Re-conceptualising vocational expertise' *Learning and Instruction* 11 (6) pp. 431-452
- Billett, S. (2001c) 'Learning throughout working life: Activities and interdependencies'. *Studies in Continuing Education* 23 (1) pp.19-35
- Billett, S. R. (1998) 'Situation, social systems and learning' *Journal of Education and Work*. 11 (3) pp. 255-274

- Billett, S. & Boud, D. (2001) Participation in and guided engagement at work: Workplace pedagogic practices. *2nd International Conference on Learning and Work*, pp. 321-328, Calgary 26-28th July 2001
- Billett, S., Barker, M & Herson-Tinning B (in press) 'Participatory practices at work', in *Pedagogy, Culture and Society*
- Childs, C. P. & Greenfield, P. M. (1980) 'Informal modes of learning and teaching: the case of Zinacanteco weaving' *Advances in cross-cultural psychology* Ed. N.Warren vol. 2. Academic Press, London
- Collins, A., Brown J. S., & Newman, S. E. (1989). Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics. In L.B. Resnick, (ed) *Knowledge, learning and instruction, essays in honour of Robert Glaser*, (pp. 453-494). Hillsdale, N.J: Erlbaum & Associates
- Danford, A. (1998) 'Teamworking and labour regulation in the autocomponents industry' *Work, Employment & Society* 12 (3) pp. 409-431
- Darrah, C. N. (1996) *Learning and work: An exploration in Industrial Ethnography* Garland Publishing, NY
- Dore, R. P. & Sako, M. (1989) *How the Japanese learn to work* Routledge, London
- Engestrom, Y. & Middleton, D. (1996) Introduction: Studying work as mindful practice. In Y Engestrom & D. Middleton (Eds.), *Cognition and Communication at Work*. (pp.1-15). Cambridge: CUP
- Ericsson, K. A., & Lehmann A. C. (1996) 'Expert and exceptional performance: Evidence of maximal adaptation to task constraints' *Annual Review of Psychology*, 47, pp. 273-305.
- Evans, G. (1993). *Institutions: formal or informal learning?* Keynote address presented at the International Conference: *After Competence: the future of post-compulsory education and Training*. Brisbane, 1-3 December, 1993
- Glassman, M. (2001) 'Dewey and Vygotsky: Society, Experience, and Inquiry in Educational Practice' *Educational Researcher* 30 (4) pp. 3-14
- Goodnow, J. J., & Warton, P. M. (1991). The social bases of social cognition: Interactions about work and their implications. *Merrill-Palmer Quarterly*, 37 (1), 27-58
- Grey, C. (1994). "Career as a project of the self and labour process discipline." *Sociology* 28(2): 479-497.
- Hodges, D. C. (1998) 'Participation as dis-identification with/in a Community of practice' *Mind, Culture and Activity*, 5 (4), pp. 272-290
- Jordan, B. (1989) 'Cosmopolitan obstetrics: Some insights from the training of traditional midwives' *Social Science and Medicine* vol. 289, pp. 925-44
- Lave J. (1993) The practice of learning. In S. Chaiklin & J. Lave (Eds.), *Understanding Practice: Perspectives on Activity and Context* (pp. 3-32). Cambridge: CUP
- Lave, J. (1990) The culture of acquisition and the practice of understanding. In J. W. Stigler, R. A. Shweder & G. Herdt (Eds.), *Cultural Psychology* (pp. 259-86). Cambridge: CUP
- Lave, J. & Wenger, E. (1991) *Situated learning - legitimate peripheral participation* Cambridge; CUP
- Luria, A.R. (1976) *Cognitive Development: Its Cultural and Social Foundations*. Harvard University Press, Cambridge.
- Marsick, V. J., & Watkins, K. (1990) *Informal and incidental learning in the workplace*. London: Routledge
- Meade, G. H. (1934) *Mind, Self & Society: Works of George Herbert Meade* (volume 1) Chicago. University of Chicago Press
- Organisation for Economic Co-operation and Development (1998) "Lifelong learning: A monitoring Framework and Trends in Participation. Educational Policy Analysis. Paris. OECD
- Pelissier, C. (1991). The anthropology of teaching and learning. *Annual Review of Anthropology*, 20, 75-95.
- Piaget, J. 1976 *Behaviour and Evolution* (trans. D. Nicholson Smith) Pantheon Books, New York
- Prawat, R. S. (1993) The value of ideas: Problems versus possibilities in learning. *Educational Researcher*, 22 (6), pp. 5-16
- Raizen, S. (1994) *Learning and work: The research base*. In Vocational Education and Training for youth: Towards coherent policy and practice. Paris: OECD
- Resnick, L. (1987). Learning in school and out. *Educational Researcher*, 16 (9), 13-20.

- Rogoff B. (1995) 'Observing sociocultural activities on three planes: participatory appropriation, guided appropriation and apprenticeship', *Sociocultural studies of the mind* Eds. J.V. Wertsch, P. Del Rio & A. Alvarez (pp. 139-164) Cambridge: CUP
- Rogoff, B. (1990) *Apprenticeship in thinking - cognitive development in social context*. New York: OUP
- Rogoff, B. (1982) 'Integrating context and cognitive development' *Advances in developmental psychology* vol. 2 Eds M.E. Lamb & A.L. Brown (pp. 125--170) Erlbaum, Hillsdale, New Jersey
- Rogoff, B. & Gauvain, M. (1984) 'The cognitive consequences of specific experiences - weaving versus schooling among the Navajo' *Journal of Cross-Cultural Psychology* 15 (4) pp. 453-475
- Scribner, S. (1997/1988) Mental and manual work: An activity theory orientation. In E. Tobah, R. J. Falmagne, M. B. Parlee, L. M. Martin & A. S. Kapelman (Eds.), *Mind and Social Practice: Selected Writings of Sylvia Scribner*, (pp 367-374). Cambridge: CUP
- Scribner, S. (1985) Vygotsky's use of history. In J. V. Wertsch (ed). *Culture, communication and cognition: Vygotskian perspectives*, (pp. 119-145). Cambridge: CUP
- Scribner, S. (1984) 'Studying working intelligence' *Everyday cognition: Its development in social context* Eds. Rogoff, B. & Lave, J. (pp. 9--40). Cambridge, Mass. Harvard University Press
- Solomon, N. (1999) Culture and difference in workplace learning. in D Boud & D. J. Garrick, (Eds.) *Understanding Learning at Work* (pp. 119-131). London: Routledge.
- Somerville, M. (2002) Changing masculine work cultures. 10th Annual International conference on post-compulsory education and training. *Envisioning practice – implementing change*. Vol 3 pp. 149-155. Surfers Paradise Park Royal, Gold Coast, Queensland, Australia, 2-4 December 2002
- Suchman, L. (1996) Constituting shared workspaces. In Y. Engestrom & D. Middleton (Eds.), (1996) *Cognition and Communication at Work*. (pp.35-60). Cambridge, UK: CUP
- Valsiner, J. (2000) *Culture and Human Development*. London, Sage Publications
- Valsiner, J. (1998). *The Guided Mind: A Sociogenetic Approach to Personality*. Cambridge, Mass: Harvard University Press.
- Valsiner, J. (1994) 'Bi-directional cultural transmission and constructive sociogenesis' Sociogenesis re-examined Eds W.de Graaf & R. Maier (pp. 101--134) Springer, New York
- Vygotsky, L. S. (1978) *Mind in society - the development of higher psychological processes*, Cambridge: Harvard University Press
- Wertsch, J.W. (1998) *Mind as action* New York: Oxford University Press