

Participatory practices at work – A working paper

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This seminar reports some initial findings of a study into workplace participatory practices --- the reciprocal process of engaging in and learning through work (Billett 2000). Procedurally, reciprocity between the affordance of the workplace (its invitational qualities) and individuals' engagement in the workplace is proposed as a means of understanding how learning through work proceeds. How workplaces invite individuals or cohorts of individuals to participate in and learn through work can be understood in terms of how they are afforded engagement in activities and interactions that are central to the values and practices of the work practice. These affordances are shaped by workplace norms and practice and affiliations (e.g. cliques, associations, occupational groupings, employment status) in ways that are characterised by contestation and the inequitable distribution of and access to tasks and interactions. The distribution of and access to opportunities for practice are often directed towards sustaining the work practice and/or the interests of particular individuals and groups who participate in it. Engagement in activities and interactions of different kinds may lead to different kinds of learning. Nevertheless, how individuals construe as being invitational what is afforded them and thereby elect to engage in these activities and interactions shapes how and what they learn. This construal is likely fashioned by personal histories or ontogenies, and includes individual subjectivities --- their perspectives that shape how and what is valued and in what ways agency is exercised.

Conceptually, participatory practices help illustrate and clarify the relations between social practice and individuals' cognition. It does this through illuminating the inter-psychological processes that occur at the intersection between cognitive and social experiences (Valsiner & van de Veer 2000). This permits some consideration of relations between individual constructivism and social determinism.

These reciprocal processes of participation in workplace are illuminated through analyses of the participatory practices of three workers over a six-month period. These are those of a union worker, a grief counsellor and an information technology consultant to schools. The findings first illuminate the work of these three individuals through the exercise of analytical framework comprising categories of activities and interdependencies. Then, the bases for participation, performance and learning for each of the three workers are illuminated as are the interactions between individuals and the social practice in which they engage.

The structure of the seminar is planned to be as follows.

1. Learning through work
2. Co-participatory practices
3. Illuminating three work practices (activities and interdependencies)
4. Participatory practices at work
5. Discussion

Participatory practices at work

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Learning through work

This paper identifies bases for understanding the requirements for work and participation in work through an analysis of the micro-social processes. These processes are held to shape how work is enacted, and assist understanding the relationship between those participatory processes and what is learnt through engagement in the work activities. This discussion aims to contribute to the formation of a workplace pedagogy through an identification and elaboration of foundational processes associated with learning at and through work. Essentially, an account of how micro-social processes in workplaces shape activities, actions and learning is advanced. Little distinction is made here between participation in social practice (such as workplaces) and learning. Consequently, factors shaping participation in work --- workplace participatory practices --- are also central to how and what individuals learn through work. The needs to understand further workplace participatory practices arose from earlier work (Billett 2001b) that identified how contributions to learning were shaped by workplace affordances and how these affordances were construed as being invitational by

individuals or cohorts in workplaces. Judgements about their invitational qualities shaped how they elected to participate at work, and therefore learn. Whether learning through everyday work activities or through the provision of guided learning in workplaces, how the workplaces afford access to work activities (and in what ways) and the guidance of more experienced co-workers will shape what is learnt. Such findings also illuminate the inter-psychological processes that occur between the social world and individuals as they engage in goal-directed actions and interactions with other workers and other social sources of knowledge. In particular, they identify instances of how micro-social processes shape learning moment by moment or as Rogoff (1990) refers to it --- micro-genetically. In recent work (Billett & Boud 2001), differences in workplace affordances were identified across three areas of the same workplace. In terms of the kinds of learning required for performance at work, the environment that was most invitational seemed to be more conducive to engaging learners. Where the invitational qualities were low, learning was directed towards self-preservation, deepening cynicism towards the employer and other unintended outcomes. Therefore, in order to advance an understanding of learning in the workplace, the development of a workplace pedagogy and inter-psychological processes, it is necessary to elaborate reciprocal participatory practices. Also to understand further the kind of learning that is required for work, the kinds of work that needs to be encountered and learnt about also needs to be illuminated. In the current study, the requirements for work and the micro-social processes that constitute the reciprocal participatory practices of work are examined.

Participatory practices

Earlier studies have identified the contributions and limitations of individuals' developing their vocational practice through everyday activities. Others have noted how guided learning by more expert others can contribute to learning in the workplace (Billett 2001b). Yet, whether considering learning through work or through intentional workplace learning activities, the factors that shape the learning seems to reside in the degree by which individuals' experience at work invite them to engage and learn. That is, on the one hand, how the workplace affords opportunities for individuals or cohorts of individuals to participate and learn the workplace, and, on the other, how individuals elect to engage in the workplace. Rather than being 'informal', as workplace learning experiences are often and erroneously labelled, these experiences are often highly structured and made intentional by the workplace's norms and practice. When individuals engage in workplace activities they are invited and expected to learn and practice the kinds of capacities that will contribute to the workplace's continuity. However, the scope and focus of what is afforded may be directed towards learning quite specific tasks associated with the work practice's continuity that may extend to the continuity of individuals or cohorts in the workplace. For instance, Bernhardt (1999) among others has identified how some workers will restrict the access of other workers to activities and learning that may jeopardise their own employment standing and continuity. So individuals are afforded opportunities sustain the work practice and/or particular interests in the workplace. So, rather than being 'informal' or 'unstructured', the opportunities afforded for learning may be directed towards sustaining the workplace's continuity. Key bases for determining how individual are invited to participate include the norms and practices of the workplace. Workplace practices and affiliations, often manifest themselves in the forms contestation that inhabits most workplaces and which are worked out in terms of the distribution of work activities and support for learning. The work practice might be directed to support a division of labour to assist management's control (Danford 1998). Alternatively, the standing and well-being of particular affiliates or workplace cliques might be used as bases for shaping how and what activities individuals are permitted to participate in and from which they learn.

The issue of participation in a social practice such as a workplace is rendered particularly salient by the associations between participation in social practices and learning (Rogoff 1995). As the knowledge required for work practice has social and cultural origins, it needs to be accessed through sources beyond the individual. Therefore, the kind of workplace activities individuals are permitted to engage in and the quality of guidance they can access shape their learning of socially-derived knowledge (Billett 2001a) as individuals engage in goal directed activities. More than just completing a task, this engagement may induce a lasting cognitive legacy as it likely changes individuals' existing knowledge in some ways. This change arises through the reinforcement or refinement of what they already know, or to extend what they know. However, although these goal-directed activities and interactions are shaped by social norms and practices, individuals

also exercise their agency in determining how they participate in social practice, such as paid work, and how and what they learn through their engagement. The bases of this agency and its exercise are held to be shaped by individuals' personal histories and their subjectivities. Individuals may well be directed to sustain and extend their own practice in ways that are inconsistent with the workplace's goals (e.g. Hodges 1998). So tensions arise when the kinds of participation individuals want is not afforded by the workplace. A workers' quest for promotion and learning the kinds of skills required for promotion might be inhibited by workplace practices. For instance, in one study a worker used his two-way radio to listen to fitters fixing and maintaining parts of a manufacturing plant. He actively sought out the fitters to learn more about their work, because this is what he wanted to do himself. However, his efforts were frustrated by restrictions on the number of fitters that could be employed, and the safety officer's concern when he kept seeking the fitters out in areas that were off-limits to his work classification (Billett 1994). So there are potential tensions between the individual's goals for the development of their practice and those associated with workplace practices.

Conceptually, understanding further these reciprocal processes contributes to key discussions within psychological theorising about the relations between individual cognition and the socio-geneses of knowledge (e.g. Rogoff 1995, Valsiner & Van de Veer 2000, Scribner 1997). Procedurally, it is necessary to elaborate an understanding of the requirements of work and the impact of workplace participatory practice on work and workers. Currently, in Australia, for instance, no systematic, empirically based method is adopted for decision-making about relative work values across different kinds of work or on the constraints of participation in work. For instance, how the participation of contingent workers (e.g. part-time, casual, home-based, non-English speaking) shapes their prospects for engagement, learning and advancement has only recently been considered (Grubb 1996, Hull 1997, Tam 1997). Therefore, understanding more about workplace participatory practices should inform and enhance judgements about work related matters, including regulatory and industrial practices that are used make judge about work value.

From a review of literature on work, work practices and participation in workplaces (Billett 2001a), a scheme was developed to describe work practice, illuminate the requirements for work and predict the kinds of learning likely to arise through participation. The schemes key organising concepts are categories of *Activities* and *Interdependencies* (see Table 1). Given its focus on the individuals' engagement in socially derived activities, and interactions with social sources, this conceptualization has resonance with and may help enrich emerging concepts of the socio-geneses of human cognition more broadly. This is because the same conceptual premises also assist understanding how: (a) the social practice (e.g. workplace) affords opportunities, and (b) how individuals' decide to engage in social practice influences their learning and (c) the interdependence between (a) and (b) make useful contributions to understanding the relations between social practice and individuals' learning through work. In addition, the kinds of activities that individuals are permitted to engage in and how routinely (e.g. what is afforded them) also influences their participation and, hence, learning. The conceptual basis of this reciprocal process is now elaborated.

Table 1 - Activities and Interdependencies (Billett 2000)

Activities within work practice are held to be described in terms of their:

Routineness – the degree by which work practice activities are routine or non-routine thereby requiring robust knowledge.

Discretion – the degree by which the scope of activities demands a broader or narrower range of decision-making and more or less autonomous practice.

Intensity – degree by which the intensity of work tasks demand strategies for managing the work load and undertaking multiple tasks simultaneously

Multiplicity – the range of activities expected to be undertaken as part of work practice

Complexity - the degree by which work task decision-making is complicated by compounding variables and the requirement for negotiation among those variables; and

Accessibility (opaqueness of knowledge) - the degree by which knowledge required for the work practice is either accessible or hidden.

Interdependencies within work practice are held to be describable under:

Working with others (teams, clients) – the ways work activity is premised on interactions with others

Engagement - basis of employment

Status of employment - the standing of the work and whether it attracts support

Access to participation - attributes that influence participation
Reciprocity of values - the prospects for shared values
Homogeneity - degree by which tasks in the work practice are homogenous. Similarities may provide for greater support (modelling etc) in development of the ability to perform
Artifacts/external tools - physical artifacts used in work practice upon which performance is predicated

Affordance of social practice

The historically and culturally sourced knowledge required for vocational activities is likely constituted in particular ways in each work practice because of situational factors. That is, the knowledge to be constructed for effective work performance, the kinds of problems to be resolved and problem solutions, are the product of situational factors and local negotiations (Engestrom & Middleton 1996, Suchman 1996, Wenger 1998), as well as historically and culturally-derived practices that shape and transform vocational activities. More than just attempting to achieve goals, participation in workplace activities have rich associations with learning shaped by socially-constructed activities and guidance. Both the cognitive (e.g. Anderson 1993, Shuell 1990) and sociocultural (e.g. Rogoff 1990, 1995) constructivist perspectives advance participation in goal-directed activity as bases for learning or knowing. Furthermore, accounts from anthropology also link the ideas of practice and learning (Pelissier 1991, Lave 1993) and associations with the contributions of collectively valued practice. The process of learning is best explained through a consideration of micro-genetic development through its relationship with micro-social processes in the workplace. That is, learning is shaped through moment-by-moment interactions and engagement in activities that are shaped by the social practice of the workplace. Whereas engagement in routine work activities may only reinforce and refine existing knowledge, engaging in new tasks develops new knowledge. Hence, participation is richly associated with learning and the kinds of participation individuals are permitted and elect to engage in are central to understandings of different kinds of learning that will arise through participation in social practices such as workplaces. Importantly, included in these local negotiations and practices that shape participatory practices is individuals' subjectivity and agency. This positions the social as an individual as much a collective phenomenon.

Given the significance of participation in the kinds of activities to be learnt, how the workplace invites individuals to participate in workplace activities and provides access to guidance are central to the quality of individuals' advancement and learning arising from workplace experiences. These affordances (Gibson 1969) influence how individuals engage in goal-directed activities and secure guidance to access knowledge that would not otherwise be learnt. For instance, individuals only able to access routine activities or those who are denied support, may have more limited learning opportunities and outcomes than those able to participate in new activities supported closely by experienced co-workers. The concern about the distribution of opportunities become important because, rather than being benign, such as workplaces, can be highly contested (e.g. Darrah 1996, Hull 1997). Workplace norms and practices are influenced by workplace hierarchies, group affiliations, personal relations, workplace cliques and cultural practices, which constitute bases for contestation, and serve to distribute opportunities to act and interact in workplaces (Billett 2001a). It follows that opportunities to participate in and access support and guidance are not always uniformly distributed.

Further, the situational factors and local negotiations that constitute social practices are in constant transformation (Lave & Wenger 1991). In terms of its tasks, goals, interactions, participants and relations, --- the affordances of the workplace are therefore likely to be constantly changing. This dynamic quality reinforces the salience of the ongoing negotiated relations between individuals and the social practice as both the bases for the workplace's continuity and that of the individual are transformed. More than being once-off sources of knowledge, inter-psychological processes (Vygotsky 1978) are necessarily on-going and are reciprocally constructed throughout individuals' personal histories of encounters with and responses to the social world.

Individuals' engagement

So despite the contributions arising from individuals' participation in social practice, the processes underpinning learning are interdependent. Learning through engagement in social practices such as workplaces is not a process of socialisation or enculturation. Instead, individuals' agency also shapes thinking, acting and learning. This includes the interpretation of what is being afforded and how individuals decide to

engage in work practice, which is founded in their subjectivities. These may be able to be understood through analyses of personal histories or ontogenies (Cole 1998, Scribner 1985), that result in particular ways of understanding and engaging with the social world (Billett 1997). Individuals' ontogenies and subjectivities have social geneses are likely shaped through participation in different social practices throughout their life histories. Ultimately, individuals' interpretation of and engagement in social practices and the learning that occurs through that participation will always, in some ways, be unique to their personal histories (Billett 1997). Moreover, the quality of engagement has direct consequences for learning. As noted, more than merely enacting conscious thought and action to achieve goals, this engagement variously refines, reinforces or extends what individuals know.

The potential bases for the independence of individuals' engagement in social practice are multiple, complex and overlapping. Firstly, individuals participate simultaneously in a number of social practices (Lave & Wenger 1991). However, the quality of their engagement in these practices is unlikely to be uniform. Instead, individuals' interests and priorities temper participation. Full-bodied participation in one social practice (e.g. workplace) may be contrasted by reluctance in another (e.g. school tuck shop roster). Secondly, individuals' engagement in these activities and the degree by which it is full bodied is likely influenced by their values and beliefs (Mak, Westwood, Barker & Ishiyama 1998). For instance, workers of a South Vietnamese heritage rejected team work in an American manufacturing plant, as they believed team work reflected the very communistic values and practices they had fled Vietnam to avoid (Darrah 1996). In considering relations between the personal and social, Valsiner (1994) refers to the 'relatedness' between the individuals' values and the mores of the social practice. In terms of learning outcomes, or the intra-psychological attributes (Vygotsky 1978), Wertsch (1998) distinguishes between 'mastery' - that is knowledge constructed without commitment or enthusiasm - and 'appropriation', in which the learner empathetically constructs the knowledge they encounter- 'making it their own'. Salient to such a discussion are matters of identity and subjectivity (Somerville & Bernoth 2001). How individuals view themselves and the construction of their identity may well shape the bases of their engagement and the construal of workplace affordances.

Accordingly, the inter-psychological processes (Vygotsky 1978) --- those between/among social partners, artifacts, symbols and the physical environment shaped by practice --- are inherently reciprocal with individuals making judgments about, and thereby transforming their perceptions of these social sources. Valsiner (1994) refers to the co-construction of knowledge, the reciprocal act of knowledge construction through which both the object and the subject are transformed. Similarly, the relations between individuals and their participation in social practice are also held to be reciprocal and interdependent between the social practice and the individuals acting in that social practice. Therefore, engagement at work is held to be co-participative: a relationship constituted between how the work practice affords participation and how individuals elect to participate in the work practice --- engage in what is afforded. More than just engagement in work, co-participative practices mediate individuals' learning (Billett 2001a).

In sum, activities and interdependencies provide a means to identify and analyse the requirements for work, workplace participatory practices and the bases for participating in and learning through work. The significance of co-participatory practices at work can be seen as illuminating relations between the social world and the mind at the intersection between the workplace's transforming social practice and individuals' evolving ontogenies as they engage in work activities. To understand the relations between social practice and individuals' thinking and acting more fully requires delineating and identifying the affordances of the workplace and bases for how individuals elect to engage in the work practice. Although recent conceptual contributions refer to the mediational qualities of social practice and individuals' role in both the inter-psychological processes (e.g. Cobb 1998), the range and detail of these relations (see Suchman for useful examples) are yet to be elaborated. Conceptual tools and theoretical bases capable of accounting for what might constitute an individual social psychology are perhaps now required.

Illuminating three work practices

The study whose procedures and findings are reported below aimed to illuminate and understand further the nature of reciprocal workplace participatory practices and their consequences for learning through work and

throughout working lives. These are illuminated through an analysis of what might be described as micro-social processes comprising the participatory practices in the workplace.

Procedures

The procedures comprising this study are two interrelated sets of activities. The first mapped the requirements for each of the participants' work practice and the second sought to investigate the participants' workplace participatory practices. Three individuals were identified and selected for participation in the project. The initial goal was to identify individuals who engaged in different kinds of work and work practice, including at least one who was in some way a contingent worker (i.e. part-time, contractual or home based). The participants selected comprises: (i) a research officer in a trade union; (ii) a grief counsellor at an institute of forensic pathology; and (iii) an information technology (IT) consultant to five primary schools. The work and work practices were quite distinct from each other (as will be elaborated) and the IT consultant represented a worker who was contracted to work part-time for one day a week at each of five primary schools. Key questions guiding the inquiry are:

- (i) In what ways does the social practice of work afford participation?
- (ii) What is the range of bases by which individuals participate in the workplace?
- (iii) How does co-participation and its consequences differ across workplaces?
- (iv) What are the consequences for learning arising from co-participation?

The first phase comprised the trialing and appraisal of the scheme of *Activities* and *Interdependencies* (see Table 1) as a means to describe and illuminate the work the subjects were engaged in, including participatory practices. Firstly, the three individuals were identified and selected, and permission obtained for their involvement from their workplaces. As noted, they were selected on the basis of their engagement in different kinds of work practice to including: (a) work-based in a situation dependent on team work; (b) technological applications; and (c) physical and geographical separation. These kinds of work were selected to appraise the scheme's capacity to describe different kinds of work practice. In addition, the work practices were also selected respectively for the importance of developing shared understanding, knowledge that is difficult to learn, and circumstances where interactions with co-workers may be limited or difficult.

The scheme of *Activities* and *Interdependencies* was used to illuminate the three individuals' work practice over a four-week period. Whereas both sets of categories can be used to identify the workplaces' affordances, the *Interdependencies* were used, to gauge aspects of individuals' engagement in work. Direct observation of work and interviews were used to describe the work practice. Data were gathered and analysed to evaluate the scheme's capacity to: (i) identify the requirements for that area of work practice; (ii) make predictions about what individuals will learn through their participation; and (iii) to those factors assisting or inhibiting participation. In sum, the first phase primarily focussed on trialing, evaluating and refining the scheme in three different kinds of workplace settings, including developing and trialing instruments, and data gathering and method of analyses. The second phase comprised a six month investigation of the workplace participatory practices of the three workers. Three interviews were conducted throughout the six-month period (commencing, progressive and summative) with the participants. The interviews used sets of items designed to map the trajectories of both the work practice and the subjects' participation in their work practice. The interview schedule was used to describe work activities based on the dual concerns of workplace affordances and individual directions.

Data derived from the observations and interviews was analysed using the refined scheme of activities and interdependencies. The workplace data provided rich descriptions of the requirements for performance and factors assisting and inhibiting participation and how they have evolved over the year. In sum, the analysis aimed to: (i) describe and compare the requirements for work; (ii) illuminate and compare the participatory workplace practices; (iii) and identify the associations between workplace participatory practices and learning, and (iv) evaluate a means by which the data can best be analysed.

Initial findings

The study illuminates and contrasts the three subjects' work practices, the requirements for competent work practice and bases for participatory practice. That is, the requirements for their work, how these individuals

participated in work and the kinds of learning they are likely to secure through their work were identified. A synthesis of the three individuals work practice is presented in Table 2. It is drawn from individual analyses of work and workplaces participatory practices. However, the key focus of this paper is to discuss workplace participatory factors. The data were analysed in terms of bases of continuity, comprised the continuity of the work practice and also individuals' practice. As foreshadowed, it is speculated that the bases for and key tensions in the relations between the individuals and social practice can be thought of in terms of continuity of practice (Billett 2002). In Table 3, an example of this kind of analysis is provided. A tension in the reciprocal workplace participatory practices is between the intentionality in workplaces for continuity of the practice (including those of particular interests in the workplace) and the direction and continuity of individuals' ontogenetic development – in this instance their vocational practice. These reciprocal bases of engagement may provide useful bases for analysis of work practice and also of the kinds of participatory practices that are associated with learning.

Continuity of work practice

First, the bases for the continuity of each work practice need to be elaborated. The trade union exists because there is a need for the industrial and professional representation of its members. To sustain itself, the union needs to be positioned to best address members' needs, and to advocate for the health sector overall and the role of the professional standing of workers in that sector. As government policies are central to shaping of the health sector and employment practices, the union seeks to influence government policy and because of its party political affiliation is aligned to one of two major political groupings. However, this affiliation is complicated when the political party it is affiliated with gets elected into office and becomes the employer of the majority of its members. This affiliation brings additional internal complications for the union as some officers are members of factions within the political party and are aspirants to be endorsed by the party for election as members of legislative assemblies. So there are complex issues and relationships between the industrial and professional concerns of its membership, and the union's political affiliations. Because the health sector is responsive to and services the community, it is also important to be positioned in key debates and discussions about the sector. In addition, the union plays a key role in supporting and sustaining employee unionism. So its key goals are all about sustaining and maintaining itself through advocacy for its membership, the industry sector, the profession and unionism more generally. Given, its focus on working with external agencies and negotiating key agreements, the expertise required within the union is based on capacities to conduct complex negotiations in industrial commissions, with employers, with governments and in professional forums, and often with organizations that are better resourced in making their case. Hence, the loss of three senior staff in recent months leading up to and during the project has tested the capacity of the union to function effectively and strategically.

In addition, the changes in staffing bring about shifts in factional power in the workplace as workplace cliques conspire to boost certain individuals for these positions and campaign to prevent others from securing those positions. So these changes have consequences for the organisation's continuity in terms of its capacity to perform its key functions and also the contestation in factions within the workplace. For instance, the recent resignation of a long-standing staff member at time leading up to a series of, what are expected to be protracted negotiations with the key employer (the Labor government) about the conditions under which the union's members are to be employed. Coincidentally, the internal contestation seems to have intensified, which means that positioning for and support of individuals has become complex. For instance, a campaign to raise awareness in the community about the role of health care workers and their workloads, which is proposed by Barbara (our informant) as a highly strategic move, may be countered by others' attempts to undermine Barbara, rather than the proposal being advanced.

The forensic pathology centre has quite different bases for continuity than the union. The centre has a legislated role, which means that its overall existence is not under threat unless the legislation under which it is constituted is revoked. As long as the state wants coronial inquests, the centre is seemingly assured of continuity. So unlike the union, it is not in constant need of positioning itself and having to maintain membership etc etc. However, like any other government body it needs to be seen to be performing effectively to maintain its current level of funding and to secure growth (e.g. for an adequate provision of counsellors). Complex arrangements between the Justice- Health –Police departments over funding and legislative

procedures continue to make funding of the centre a highly negotiated process. However, there are other threats to the centre's continuity in the form of potential privatization of the forensic pathology function and also malpractice. In a climate of outsourcing, it has been suggested that the centre's functions be privatised. Another threat to the continuity of the professional practice has arisen in other institutes of forensic pathology recently out of earlier practices of researcher access to body parts and their retention without consent. This, and non-consented tissue retention in hospitals, raised widespread concerns in the community, upon which government has acted in a number of Australian states. Moreover, community concerns and possibilities of objections to coronial autopsies could lead to constraints on the number of coronial autopsies (i.e. only those in where high levels of suspicion were evident). The relatively recently established counselling function provided through the center plays an important role in addressing sensitively matters associated with identification of deceased, in processes associated with securing coronial evidence and in assisting those who are grieving as a result of traumatic death. Although not explicitly intended, the counselling service plays an important role in managing client relations externally. For instance, it was counsellors who took the lead role in responding to governmental inquiries and community concerns about the retention of human tissue. Internally, along with an ethics committee, the counsellors work to make scientific staff aware of the need to consider their responsiveness to and responsibility for changing community expectations.

The five state-funded primary schools for whom the Information Technology consultant (Aden) works, play an important role in the community. However, like many public institutions they have been subject to structural changes. One of these is the increased requirement for each school to adopt wider responsibilities for its administration yet be responsive to innovative practices such as the use of information technology for both administrative and educational purposes. So, the direction of the schools' continuity is shaped in part by the needs to address goals associated with information technology. A need to be responsive to departmental initiatives, such as the implementation of a Standard Operating System has become an important measure for these schools, and the competence and responsiveness of the administration. As the staff in these schools lacked appropriate computing expertise, the five schools have collectively employed Aden to provide these services. Much of Aden's initial work was to assist teachers with routine breakdown and maintenance tasks. So early in his employment, his tenure, as a casual employee, was dependent upon being able to work well with teachers, be seen by them as performing effectively in supporting their use of technology for educational purposes. However, the departmental directives about the implementation of the Standard Operating System meant a change in the priorities for the information technology function in the schools. As an effectively functioning IT administrative system became the key goals, there was a reduced emphasis on the IT support for educational purposes and more on administrative goals. The requirement for the establishment and maintenance of this system took precedence.

Continuity of individuals' practice

Barbara's reasons for working in the union are highly consonant with the union's goals and bases for its continuity. She has long and well-founded concerns with equity and social justice and there is a long tradition of service to health care in her family. So there is high level of relatedness with many, but not all of the core values of the work practice in which she engages. An exception is her growing disaffection with political party politics, and of the union's associations with the Labor party that she was once, but no longer, an active member. Her concern with the union being closely affiliated to one political party is not shared by many of her colleagues, some of whom are closely affiliated to the party and are active members of factions within the party. This complicates her standing in the union, as she is unaffiliated, in a system where factional support and numbers can be very important and potent. Also, some individuals use their work in the union and factional membership as a basis for advancement (e.g. being pre-selected to a state or federal seat). Therefore, their relationship and loyalties are at times ambiguous. Barbara's concerns about the union's close association with the party complicate her interactions with others in her workplace, because there may be quite diverse bases for continuity of their career paths as well as the continuity of union. Also, given her strong professional and social justice interests (and disaffection with party politics), her commitment to the values of colleagues who are tied to party affiliations (and ambitions) is further challenged, when factional politics are used, from her perspective, for short-term pragmatic and selective goals. However, she is skilled in developing and arguing her case through the unions systems of decision-making forums and councils.

In order to undertake her role effectively as research officer she needs to dissociate herself with day-to-day procedural matters in the workplace, but be available as a back up and fill in as circumstances arise and priorities change. Her capacities to read and write and present cases are well aligned to the procedures for advancing policies in the Union. As an ex-practitioner in the field, she is also eligible to stand to be elected to office, unlike some of her colleagues. Through her role, she is able to exercise other of her social justice issues and commitment to the public provision of healthcare services. So in so far as there is considerable congruence between Barbara's personal values, vocation and those of the workplace, it is not surprising that she has not looked elsewhere for work. It is also noteworthy that the quality of her working life that would cause her to consider this is the deterioration of personal relations in the workplace. It seems more than the volume, intensity and complexity of the work, a hugely demanding workload and expectations to learn new bodies of knowledge, workplace relations (affordances) are central to threats to the continuity of her work practice. For instance, she refers to the frustrations that she feels about not getting enough support for the campaign to raise awareness about nurses' work. Having stated that it is not so much about being undermined, she continued, *"It's not a personal investment in it It's the fact that ... if you listen to any of the organizers and just how bad it is out there and it's the fact that we have an obligation, that's what were here for. We have an obligation to do something for our members"* So here the tension between Barbara's own vocational concerns and how these are frustrated by workplace factors are illustrated. She also has concerns about how those affiliated with her may also be subject to workplace contestation. Barbara is working closely with some junior staff whom she believes currently make significant contributions and will do so more in the future as they grow in expertise. However, she is concerned that in the, at times, intensely contested work environment that these newer workers may be targeted or marginalised because of their associations with her. In terms of her participatory practice, the work pressure and the shifts in affiliations has meant that Barbara has to "make more of an effort to contribute more". So despite the fact of her growing workload outside the union and her need to address key policy matters associated with National Competition Policy and the degradation of conditions under which health workers are employed, she needs to maintain her standing and engage closely within the workplace.

Jim, the grief counselor, is engaged in work that he is experienced in and for which he is professionally well prepared, finds interesting, challenging and, at times, rewarding. His interest in working directly with clients and providing a public (free) service are central to his beliefs about his work. He has a strong commitment to the public provision of services such as counselling and the obligation for governments to fulfil its social obligations. He studied and engaged in social work after several different kinds of employment that followed the completion of his undergraduate degree. These previous forms of employment were unrelated to his current vocational practice. However, despite his commitment, he remains sceptical about and adopts a criticality towards counselling that is open to a questioning of its processes and values. These qualities may be in contrast to the professional medical values and scientific discourses that permeate and are the most influential in the centre. At the beginning of the project, Jim was a casual employee. However, during the period of the project, a permanent position was created which John was able to secure. This permanency has permitted John to more pursue his goals for counseling in a way that is more consonant with his personal and professional beliefs. One of these has been to extend the counseling service he offers to include more face-to-face counseling and to a wider clientele. So, he has been able to extend the scope of the counseling practice through the exercise of his agency in a way that is consistent with his beliefs and values, which grew during the duration of the project. (This is discussed in more detail later). In consider the (as yet remote prospect of privatisation), Jim replied that he would not work for a private company as a counsellor because it is antithetical to his values and interests.

For Aden, the work in schools is linked to an environment with which he is familiar. His parent both work in primary education (as a principal and teacher), so all his life he has been involved in discussions about and often physically associated with primary schools. His competence with computers and information technology arose from an interest he developed as an adolescent through access to a computer at home. While still at school he undertook a period of work experiences that permitted him to extend and demonstrate his competence with computers. His academic performance at school was not strong and it was his father who encouraged him to pursue computing in a vocational college after he left school. Really, he wanted to be a sports journalist. His father advised him of the wide spread use of computers in schools and home and

suggested that there would be a growth of employment in this field. It was his mother who was able to secure his first job in a nearby school, which led to subsequent employment in four others. Initially, he viewed this employment as paid work experience, but it has grown to full-time employment. He remains concerned that working in schools as a consultant may exclude him from more interesting, prestigious and highly remunerated work in the corporate world. However, this work suits some of his personal values (service to the community) and his familiarity with education seems to present an environment with which he is comfortable. So while quite content with the work in schools, he might be tempted by an offer from elsewhere, although he is not actively seeking such offers. He claims there is not much work out there (his mother found only 10 vacancies in a newspaper recently, he reported). However, he reports that his work is now a 'proper job'. It has transformed from being a casual appointment, to one that is central to the maintenance of the schools' information system. The job has now been classified within the education system (Technology officer) and he is included in staff listings and has his superannuation paid for by the department. So, while still a contingent worker, the workplace is inviting his participation and involvement more strongly.

The concepts above about individuals' life direction seem to be linked with concepts of subjectivity. That is, the sense of self that individuals projected in their responses was consistent with many aspects of their practice, and in particular the conduct of their employment. So whereas Barbara had never sought out alternative employment, Jim would not consider working for a private sector company in a counselling role, yet Aden could be tempted by an offer that would allow him to extend his practice further in the kind of corporate direction he cherished. So there are some identifiable bases associated with individual subjectivity that shape their participation in work activities and actions.

Comparing workplace participatory practices

Across the three workers, through direct observation and interviews, diverse participatory practices were identified, that had consequences for the conduct of their work and the practices of others. Quite different bases of workplace participatory practices existed for each of the three subjects. For instance, in the highly demarcated professional work environment of a forensic pathology centre the counsellor was permitted to exercise considerable discretion in his work activities, without the need to consult or seek permission. The workplace comprises a number of sections where quite distinct forms of work are conducted (e.g. dissection rooms where the pathologists and mortuary attendants work, laboratories where scientific testing and analysis are undertaken, storage areas for cadavers and others for samples, and counselling facilities, police facilities for investigation and administrative purposes). So the workplace is characterised by distinct divisions of labour premised on the possession of particular specialist knowledge. Professional autonomy is prized in this workplace. Staff designated as professional enjoy discretion within their demarcated area of work. However, the administrative and mortuary staff would not be granted high levels of professional discretion and are subject to closer supervision. Given the relative standing of counselling work, Jim was able to control and direct his work. As noted, early in the six-month period, Jim was a contract staff member. However, towards the end, a new position was created which he was successful in securing. Much of his work might be described as routine (e.g. only the conduct of a few standard functions – identification of cadavers, counselling, assisting with coronial processes). Yet, given the emotionally demanding and distinct character of each event, its requirements go beyond the mere repetition of frequently performed tasks. It also involves him interacting with other staff in order to perform his work functions. This includes the mortuary attendants who provide information, and make the cadavers ready for viewing; working with pathologists to ascertain information to pass on or withhold from next of kin, discussing with the police officers in the centre about the deceased and their relatives. However, there is little boundary crossing because the work functions are so discrete. One incident of boundary crossing did occur. Two groups of the mortuary staff approached Jim to seek advice about a workplace grievance against each other. Jim advised them, even though this was not part of his job description. Later, it came to the attention of a workplace counsellor who objected to Jim's intercession.

The union worker's work practice was far more homogenous in terms of activities to be undertaken, but with far more complex workplace interrelationships that are premised on negotiations, collaborations and consultations. Highly democratic processes of workplace practices are in place in the union. However, there are also cliques and affiliations that were often the basis for negotiations and the working through of contested

ideas and practices. Hence, unlike the grief counsellor, Barbara’s standing and capacity to make decisions was tightly interrelated with workplace relations and affiliations that are constantly being renegotiated, and to decision-making processes that are open to scrutiny and contestation. Also, although her work encompassed a broad range of tasks and discretionary actions, her authority was limited by the centralised decision-making of the Secretary’s position. So while Barbara, enjoyed wide (perhaps too wide) discretion in the her work, she was denied a commensurate level of authority and decision-making was embedded in negotiated and consensual arrangements, at one level and highly centralised executive authority, at another. So she lacked the capacity to take the kinds of relatively unilateral actions that Jim was able to take in his workplace.

The work requirements of Aden, the IT consultant, were constructed through the interactions with the five schools he serves weekly. As a contingent worker, he seeks to maintain relationships with administrators and teachers in the five schools. However, over the duration of the project there was a change in his tasks and the focus and standing of his work, and also the basis upon which his tenure is premised. As the schools have converted to a departmentally mandated standard system of computer operation and interface, his work has become more focussed on setting upon and maintaining that system. As the implementation of this system became a key strategic goal for the schools, the basis of Aden’s tenure has changed. He is now less dependent upon maintaining his tenure through the good will of the teachers and more focussed on his capacity to establish and maintain the SOS in the school. For the schools’ administrators this is currently taking precedence over routine request for assistance for classroom teachers. So, as the goals have changed, so to have the participatory practices and range of tasks he has to be involved with.

So some of the differences in participatory practices are explainable by changes in the requirements for work performance and those brought about by individuals’ agencies that are directed by their subjectivities. Table 4 attempts to capture some of the key bases for affordances and engagement for each of the three participants.

Table 4 – Bases of affordance and engagement

Participant	Bases for affordance include:	Bases for engagement include:
Jim - extension of practice	Change to permanent employment Opportunity to exercise discretion Privileging of professional autonomy Clear role demarcations Support from other (senior) counsellor	Professional practice –desire to direct work practice Strong belief in the importance of approach Capacity to enact preferred practice
Barbara – broad campaign	Work role Discretion to embrace a wide scope of activities Democratic workplace practices and values External role Workplace cliques and affiliations	Commitment to public sector and health care Commitment to democratic work processes Experience in the sector Capacities to present and argue a case
Aden – standard operating system	Acceptance of his expertise Enhancing the standing of his work Increased engagement with schools Provision of tasks through which he can develop and contribute to the schools	Expertise in the area of work Familiarity with schools Interest in information technology Level of engagement

As indicated, each of the three participants has been afforded the opportunity to exercise their vocation. However, there are different bases by which they are able to exercise their participation. Over the six month span of this study, Jim and Aden experienced expansion in their affordances that permitted them to extend the scope of their practice and their discretion within those practices. Barbara on the other hand, although enjoying a wider range of discretion, did not experience an extension of her practices. Instead, she felt the need to give extra time to workplace relations, despite her growing workload and a requirement to be externally and strategically focussed. Taking account of the changes in work requirements and participatory practices seems important. Social practice is dynamic as is the relations that constitute them. Therefore, in the next section an attempt is made to map changes arising from each of the three participants, using an instance of change practice for each of them.

Changes to work and participation

Change in emphasis in the three subjects' work caused changes in the participatory practices in the workplace. Because Jim is spending more time in face-to-face counselling, administrative staff is now handling other tasks (e.g. initial contacts with clients). However, these staff often find it difficult and distressing being the first point of contact with these clients and sometimes these staff respond inappropriately through an understandable inclination to want to assist a distressed person on phone. This has required Jim to explain to these staff, procedures about contact and his commitments to return the clients' call as soon as possible. He also has had to discuss his schedule with them and make it more transparent so that they understand his work and can advise new clients about his availability. It also means Jim has to spend time with these staff and also others for whom interdependencies are essential. There are other consequences for the work practice arising from Jim's decision to engage in more face-to-face counselling. Firstly, there is an increased presence in the workplace of individuals who are grieving. This means that others in the work area have to be aware of this and behave appropriately. Another change is that Jim routinely advises his clients of their right to appeal the conduct of a post-mortem on the next of kin. This may well lead to an increased incident of appeals that have consequences for others' work (e.g. forensic pathologists). Nor was he distracted about the changes he had caused to others practices, as he believed these changes were consistent with him performing counselling in a way consistent with his values and previous practice. Jim is quite unapologetic for the changes that his practice has brought about and although aware of the consequences for other staff, justifies his action in terms of their contribution to his own practice. As foreshadowed, he has a strong commitment to and beliefs about his practice as well as the rights of his clients and his obligations to those clients. These changes in the counselling practices at the Forensic science center are taken very much as being a product of Jim's agency.

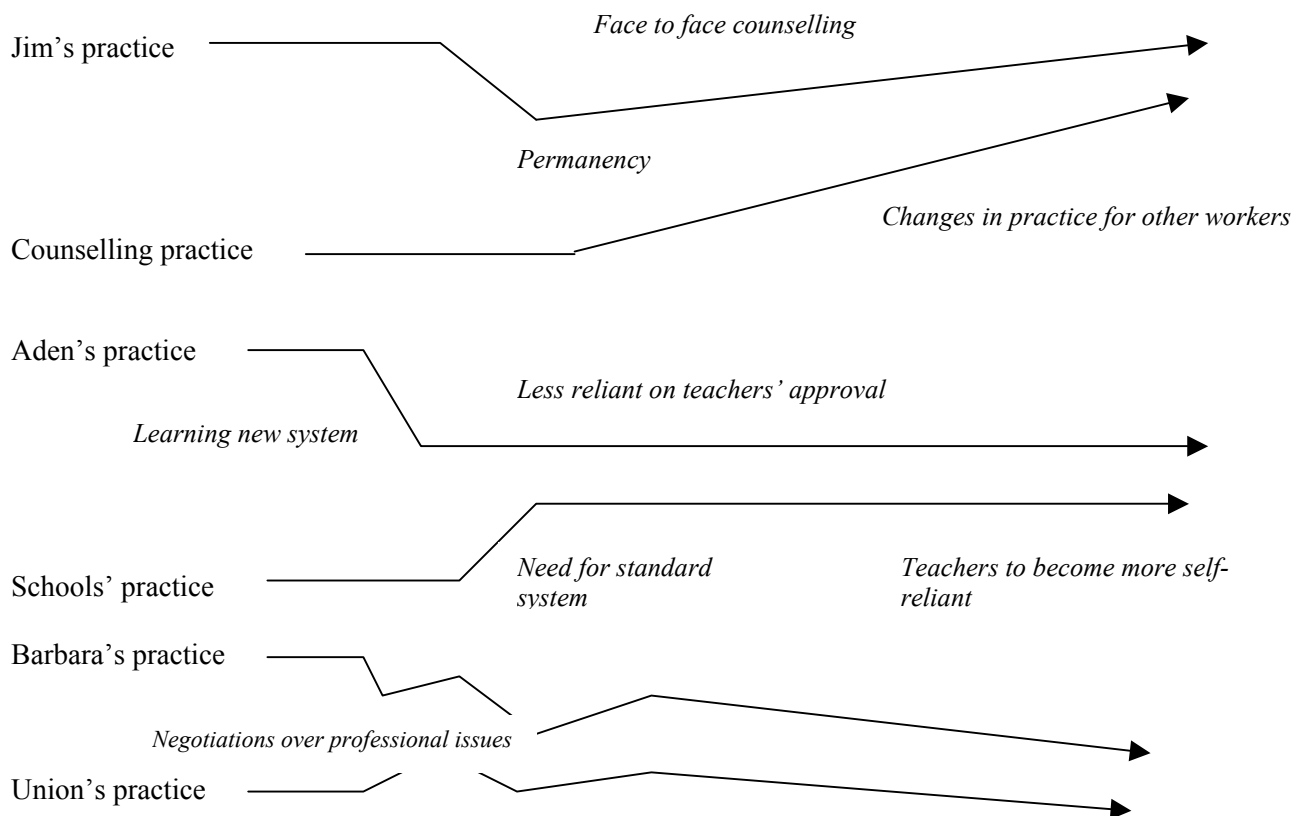
As noted earlier, relations with and gaining teachers' confidence was initially important for Aden's work and his standing in the schools in which he consults. Into the new year, Aden's role changed as one school which decided that the teacher with computing expertise and who used to supervise Aden should be employing those skills in the assisting students more directly. So the teachers was placed in an instructional rather than a supervisory role. This lead to Aden being asked to take a more strategic role at this school and in all the other schools to implement the Standard Operating System. Hence, his participation and engagement changed, as did his status and standing. His line of accountability is to the administration and his task is directly aligned to assisting the school's new strategic direction.

Change in the intensity and direction of work, periods of absence to participate in election campaign and changing relations in the workplaces have required Barbara to interact and communicate more in the workplace. Her critique of the existing industrial processes (enterprise bargaining) has led to intense interactions with some colleagues in the workplace and which means that she has to direct additional effort to workplace political issues. Given the democratic and negotiated bases for decision-making in the workplace, processes of engagement and interaction are important and time consuming. In particular, Barbara has attempted to promote a broader case for the health workers that comprise the union's members. She argues that the industrial processes are unable to address many issues associated with the status and conditions of these workers. Consequently, a broader campaign is required to raise awareness in the broader community about the conditions these workers are sometimes employed under and how successive government policies are eroding the crucial public service provided by these workers. Through such a process she hopes to secure broader goals for the membership. However, some colleagues see this approach as being extra-industrial and of marginalising the industrial processes. This has led to periods of intense debate within her workplace. With the recent loss of supportive colleagues Barbara is concerned about her capacity to realise these changes to practice.

So, there are dynamic qualities to workplace activities and participatory practices evident across these three workplaces. Jim is able to exercise agency and the changes to his practice and that of the counselling service have become closely aligned. Aden's bases of accountability and continuity have changed and firmed as well. He has clear goals and lines of authority and his vocational interests and the requirements of the workplace have become aligned. Barbara's participation continues to develop as staff change and affiliations of interest transform in her workplace. So there is some evidence of associations between changes in work and participatory practices, that illustrate the dynamic social ecology of workplaces and what shapes engagement,

participation and learning. In Figure 1 below, there is an attempt to depict the trajectories of both the work practices and the individuals' practices, as they changed in relationship to each other over the six-month period.

Figure 1 Trajectories of practices



Learning

Each of the three subjects was involved in significant new learning and opportunities to refine what they already knew. Through engaging in more face-to-face counselling that he prefers, Jim the counsellor also learnt more about the likely client base he will encounter in this city and their differences from his previous position. For instance, there are less Muslim, but more indigenous clients and the latter are less likely to want counselling, but are primarily concerned with the prompt return of the deceased. So his ongoing practice is being refined through day-to-day work. He also had a positive experience with counselling next of kin after an aeroplane crash. This was in contrast to other and earlier involvement with on scene activities in other disasters. This experience provided the opportunity for him to identify bases by which such intervention could be constructive (i.e. being able to quickly access next of kin, collaborative working relations with police). Jim's consideration of the anthrax threat extended his consideration of counselling at the Centre and how they would handle interactions with next of kin and the management of mass fatalities.

For Barbara, there was evidence of significant new learning in the consolidation of earlier concerns about how health workers' interests were being addressed in the industrial arena. This learning was consolidated through the opportunity to prepare papers for the strategies day meeting. Also, her work role as a research office has led her to question the current industrial arrangements (e.g. Enterprise Bargaining concept, wage negotiations) in addressing the needs of the nurses (her members – constituents) and chronic issues associated with nurses' working conditions and lives and the related issue of the chronic nurse shortage which represents a threat to the quality of health care. Her involvement with national superannuation fund management and decision-making about superannuation feed into an industry-wide concern for the level of superannuation coverage for health workers. Her work in the election campaign, which included time with

officers from other unions seem to have contributed and reinforced her views about the detachment from the community of the political party for whom she was assisting. So these activities, although not wholly routine, added to her growing view and providing conforming evidence from a different perspective. She has also learnt much from her participation in the national superannuation fund. Although she has worked hard to understand the complexities of superannuation, including undertaking postgraduate studies she still feels a novice and not fully understanding the consequences of the decisions she makes. However, one of the roles of the Board of which she is a member is to act as a custodian for disputed cases, such as those occurring between competing kinsfolk in the case of an unexpected death. Here, she has found herself able to make a significant contribution, building on the kinds of well-developed advocacy skills she possesses.

Aden's work provided learning opportunities that were mainly in the form of reinforcing how he goes about trouble shooting in the schools in which he works. Week in and week out he is faced with similar tasks and problems, which assist his capacity to be effective in responding to these. His own learning has evolved, as he is using strategies to make efficient many of the routine tasks required to be performed through equipment failure. This use of least effort strategies is a characteristic of expert performance, according to the cognitive perspective (e.g. Gott 1989). Aden's opportunity for new learning arises from his need to learn how to implement the Standard Operating System (SOS). This requires he attend a workshop and interact with staff whose responsibility it is to implement this system. In learning about this system, Aden's role in the schools became to be placed on firmer grounds. Although still contractual, it made his capacities to operate and manage the system across the schools

Learning arising from changes in workplace tasks provided for different bases for participation. Aden, developed valued expertise possessed by nobody else in the schools; Jim able to exercise his preferred mode of conducting his practice; Barbara was able to position the debate (direction) of the union by questioning of some its key assumptions.

Summary

The data provide illustrative examples of how the socially-derived practices of individuals and workplaces reciprocally shape participation and learning. It supports the contention that participation and the learning that arises from workplace participation is premised on intentions. So while there will always be unintended learning, there is an intentional basis to workplace experiences as there are for those in other kinds of social practice. This intentionality arises from the kinds of micro-social processes identified above. Corresponding with the intentionality of the workplace (its affordances) is the individuals' decision about how they elect to engage in the workplaces. For example, the decision of a grief counsellor to conduct face-to-face, rather than phone-based, grief counselling was a product of his earlier practice. This decision transformed the counselling work and the work of co-workers (because clients were on on-site and for longer periods of time, and also the counsellor was less available, meaning clerical staff had to take calls from distressed next-of-kin) as he was less available, due to the extended periods of counselling. Significantly, the counsellor's change in work practice coincided with his movement from temporary to permanent employment. So, this change in practice illuminates a complex of factors comprising the enactment of the individuals' agency, premised on the capacity for relative autonomous practice that arose from a change in employment status (a workplace affordance), yet which was of a kind not afforded to other workers. In all, this single change transformed work practices, bases of participation and requirements for performance. This example of workplace participatory practices illustrates how opportunities for change, learning and development are distributed across the workplace. For instance, workers with less discretion (e.g. the administrations staff) may be subject to the changes of others and not be able to intentionally transform their participatory practices and learning, as others in that workplace were able. So, just as the teachers in the schools experienced a reduced level of technical support when the schools' priorities for information technology changed, the administration in the forensic pathology centre had to learn about Jim's schedule and develop the capacity to take call from distressed next of kin. These examples indicate different bases for the continuity of the practice are exercised to ensure its continuity. These bases reside in its participatory practices.

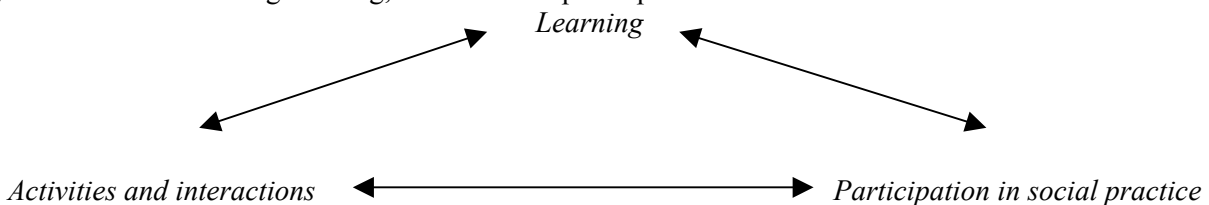
In all three cases there was evidence of the exercise of individuals' agency in shaping the organisation of their work. This agency was not unassociated with their preferences, beliefs and values – their subjectivities. Linked to these values is individuals' subjectivity, how they view themselves in relation to the

workplace's activities and tasks. This subjectivity, like individuals' goals and values shapes their agency. The exercise of personal agency, varied over time and circumstances, and more so for some of the participants than others. So the outcomes of the study illustrates and elaborates the inter-psychological processes occurring through work. Given that micro-social practices play such a basis in the analysis it may be timely to the consider afresh the social ecology of workplaces (and perhaps revisit some of the earlier work in ecological psychology). As in Somerville and Bernoth's (2001) study, individuals' subjectivity provides an explanatory principle for the direction and shaping of individuals' agency. This agency appeared to be most exercised when there was threats to their subjectivity, and identity, brought about by changes in the workplace or where the individual had the opportunity to exercise that agency.

New activities for all three participants (e.g. considering responses to arising from the Anthrax scare, involvement in an on-scene disaster response, involvement in decision making about superannuation, and nurse shortage, implementing the Standard Operating System) led to new significant new learning. These opportunities arose from events that were structured by workplace practices. They were not ad hoc or incidental, they are central to the workplace's practice and were afforded by workplace circumstances. Some learning is likely to be unintentional on the part of the workplace (e.g. Babara's learning about shifting power structures, her sense of contribution in decision-making as a board member as custodians for superannuation benefits, Jim's capacity to compare disaster-support incidents and Aden's heightened sense of worth). Along the way they also elaborated on refined their knowledge about work that had arisen through everyday work activities.

In conclusion, this initial analysis of the micro-social processes that comprised the three workers' work activities and participatory practices illuminates the multifaceted bases for participation in and learning through work. It also emphasises the complex of contributions that shape microgenetic development – the moment by moment learning that occurs through engagement in conscious thought which draws upon historical precedents, cultural requirements, and situation contributions.

Figure 2 –Relations among learning, activities and participation



So when considering learning through work or the development of a workplace pedagogy it is necessary to account for the relationship between the kinds of micro-social process that constitute workplace participatory practices and their consequences for micro-genetic development (see Figure 2). Here, it is proposed that these processes are richly intertwined and interdependent. Such propositions and the kinds of evidence advanced above strengthen the interrelationships among learning, doing and participation in social practices. So it seems from this small pilot study that there work, workplace participatory practices and learning through work are richly associated. Consideration of one, suggests the need to consider the others.

References

- Anderson J. R. (1993). Problem solving and learning. *American Psychologist*, 48 (1), 35-44.
- Billett S (2001a) Learning throughout working life: Activities and interdependencies. *Studies in Continuing Education* 23 (1) pp.19-35.
- Billett S. (2001b) *Learning in the workplace: Strategies for effective practice*. Allen and Unwin, Sydney
- Billett S (2001c) Knowing in practice: Re-conceptualising vocational expertise *Learning and Instruction* 1 (6) 431-452.
- Billett S (2000) Performance at work: Identifying the smart workforce. In R Gerber & C Lankshear (Eds) *Training for a smart workforce* (pp. 123-150). London, Routledge ISBN 0-415-19552-7
- Billett S. (1997). Dispositions, vocational knowledge and development: sources and consequences. *Australian and New Zealand Journal of Vocational Education Research*, vol 5 (1) 1-26.
- Billett S (1993) Authenticity and a culture of work practice. *Australian and New Zealand Journal of Vocational Education Research*, 2 (1) 1 - 29.

- Billett S & Boud D (2001) Participation in and guided engagement at work: Workplace pedagogic practices. *Researching Work and Learning*. Second International Conference, Calgary, Alberta, July 26-28.
- Cobb P (1998) Learning from distributed theories of intelligence. *Mind, Culture, and Activity* 5 (3) 187-204.
- Danford A (1998), 'Teamworking and labour regulation in the autocomponents industry, *Work, Employment and Society*, 12 (3), 409-431.
- Darrah C N (1996) *Learning and work: An exploration in Industrial Ethnography*. New York: Garland Publishing.
- 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.
- Gibson E.J. (1969) *Principles of perceptual learning and development* Prentice-Hall, New York
- Grubb W N (1996) *Working in the middle: Strengthening education and training for the mid-skilled labor force*. San Francisco: Jossey Bass.
- Hodges, D.C. (1998) Participation as Dis-identification With/in a Community of Practice. *Mind, Culture and Activity*, 5 (4), 272-90.
- Hull G (1997) *Changing work, changing workers: Critical perspectives on language, literacy & skills*. NY:SUNY Press.
- Hutchins E (1991) The Social Organization of Distributed Cognition. In L B Resnick, J M Levine & S D Teasley (eds) *Perspectives on socially shared cognition*. Washington DC..American Psychological Association.
- 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., & Wenger, E. (1991). *Situated learning - legitimate peripheral participation*. Cambridge. CUP.
- Mak A. (1996) Learning sociocultural competencies for success. *Australian Journal of Psychology*, 48), 119.
- Mak A. S., Westwood, M. J., Barker, M. C., & Ishiyama, F. I. (1998). The Excel Program for developing international students' sociocultural competencies. *Journal of International Education*, 9 (1), 33-38.
- Miller P. J., & Goodnow J. J. (1995). Cultural practices: Towards an integration of Culture and Development. In J. J. Goodnow, P. J. Miller & F. Kessel (Eds.), *Cultural Practices as contexts for Development*, 67. San Francisco: Jossey Bass.
- Pea R D (1993) Practices in distributed intelligence and designs for education. In G Salamon (ed) *Distributed Cognition* (pp.47-87) Cambridge University Press, Cambridge.
- Pelissier C. (1991) The anthropology of teaching and learning. *Annual Review of Anthropology*, 20, 75-95.
- Resnick L B, Pontecorvo C, Saljo R & Burge B (1997) Introduction, In LB Resnick, C Pontecorvo & R. Saljo (eds) *Discourse, tools and reasoning: Essays on Situated Cognition*. Springer, Berlin (pp. 1-20).
- Rogoff B. (1990) *Apprenticeship in thinking - cognitive development in social context*. New York: OUP
- Rogoff B. (1995) Observing sociocultural activities on three planes: participatory appropriation, guided appropriation and apprenticeship. In J Wertsch, P Del Rio & A Alvarez (Eds.), *Sociocultural studies of the mind* Cambridge: CUP.
- Salomon G. (1994) Whole individuals in complex settings: Educational research reexamined. Invited address Annual Meeting of the Australian Association for Research in Education. Newcastle, NSW, November.
- Scribner S (1997/1988), Mental and manual work: An activity theory orientation. In Tobah E, Falmagne, R J, Parlee, M B, Martin LM & Kapelman A S (eds) *Mind and Social Practice*. Cambridge. UK. CUP
- Scribner S. (1985). Vygostky's use of history. In J. V. Wertsch (ed). *Culture, communication and cognition: Vygotskian perspectives* (pp. 119-145). Cambridge CUP.
- Scribner S., & Beach, K. (1993). An activity theory approach to memory. *Applied Cognitive Psychology*, 7, 185-190.
- Shuell T. J. (1990). Phases of meaningful learning. *Review of Educational Research*, 60 (4), 531-547.
- Somerville M & Bernoth M (2001) Safe Bodies: Solving a Dilemma in Workplace. Knowledge Demands for the New Economy. 9th Annual International Conference on Post-compulsory Education and Training. Centre for Learning and Work Research, Brisbane Vol 2 (pp253-260)
- Suchman L. (1996). Constituting shared workspaces. In Y. Engestrom & D. Middleton (Eds.), (1996) *Cognition and communication at work*. (pp.35-60). Cambridge, UK: CUP.
- Tam M (1997) *Part-time Employment: A Bridge or a Trap?* Brookfield, Aldershot.
- Valsiner J & van der Veer R (2000) The Social Mind: The construction of an idea. Cambridge CUP.
- Valsiner J. (1994). Bi-directional cultural transmission and constructive sociogenesis. In W.de Graaf & R. Maier (Eds.), *Sociogenesis re-examined* (pp. 101-134). New York: Springer.
- Vygotsky L.S. (1978) *Mind in Society — the Development of Higher Psychological Processes*. Cambridge: HUP.
- Wenger E. (1998) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge CUP.
- Wertsch J.W. (1998) *Mind as action*. New York. OUP

Table 2 – Comparison of three work practices

Activities	Union worker	Grief counsellor	IT consultant
<i>Routineness</i>	Rarely routinised work	Routinised work tasks – however, performance of tasks may be demanding	Both routine and non-routine work, but in different settings (a different school each day of the week)
<i>Discretion</i>	Too much discretion – not enough formalized authority	Within domain of counselling activity – broad discretion	Autonomy within each school as constrained by list of priorities, Principal authorised expenditure, cross schools demands and Departmental expenditure protocols
<i>Intensity</i>	Intense – an impossible work load	Emotionally intense work	Balancing and prioritising commitments and demands
<i>Multiplicity</i>	Broad range of work – key is to keep focussed on strategic tasks	Confined to contact with the nok, grieving parties, set up arrangements for identification, and ongoing counselling	A range of technical tasks, sometimes occurring simultaneously
<i>Complexity</i>	An array of compounding and complex factors often have to be consider	Complexity in determining responses to nok and best approach to gaining information and provision of advise	Different schools, different requirements and priorities, not always expert in all the demands of the workplace. Keeping teachers on-side while addressing diverse priorities
<i>Accessibility</i>	Requires access to expertise both within and outside the union	Prefers the clinical environment as a tool to manage the counselling process and provision of advice	Not always easy for new tasks. Often know what is possible but may not know how to go about it.
Interdependencies			
<i>Working with others</i>	A senior member of an active, committed team that has formal forums and process to communicate and make decisions.	A highly demarcated workplace arising from specialisms	Working with, supporting and trouble-shooting. Requires good relations with teachers and administration staff. Responding to and provision of advice. Working around workplace politics and jealousies
<i>Engagement - Status of employment</i>	A senior member of the team, is a full-time employee A senior team member, who as an ex-nurse, ex-workplace delegate, ex-organiser has experience based status	A full-time contracted worker Counselling is not core business in the JTC, but is a specialism that is important to its continuity, although still cast as peripheral in a medically-(scientific) environment	Full-time casual employee Teaching is core business and IT is there to support teachers, teaching and administration and administrators.
<i>Access to participation</i>	Skills in communicating, forums for communicating, negotiation and planning provide bases for active participation	Development of relations with those whose performance and cooperation is contingent on work performance.	Differs across schools, but feels a valued member of each school. Recognition of effort and praise and interactions with teachers make the staff member highly valued
<i>Reciprocity of values</i>	Shared commitment to nursing and collective representation and the role unions play in the community – less so to party political affiliations	Shared commitment with other counsellor, to the role that counselling can potentially play, to the state conducting coronial autopsies.	Enjoys contributing to teachers' work and students learning. Tempted to look elsewhere but would miss companionship and rewards of current position
<i>Homogeneity -</i>	Work is highly homogenous, representing the industrial and professional interests of members. Could swap roles easily with others	Highly heterogeneous work – demarcations around specialisms – could not swap work roles	The work of the schools are similar and the activities of administrators and teachers is highly homogeneous. However, the work of the IT consultant is quite distinct from these activities, although directed to support them
<i>Artefacts/external tools</i>	Computer – workplace, offices, kitchen area,	Office, viewing area, clinical environment	Different workplaces, awareness of disrupting school-life, particularly classroom activities.

Table 3 _ Union worker

Work practice - Continuity of practice union, profession, sector, trade unionism	Individual's practice - Position, vocation, relationships, contributions
<p>Workplace affordance - Key bases for participation provided in the workplace are:</p> <p><u>Interactions with secretary</u> – degree by which authority to act can be secured through agreement of secretary</p> <p><u>Interaction with industrial and professional staff</u> – degree by which staff can access the expertise of other staff and inform these staff</p> <p><u>Involvement in operational and strategic activities</u> – capacity to involved in both day-to-day activities and those of a more strategic kind such as in planning</p> <p><u>Access to expertise within and outside of union</u> – availability of expertise within the workplace</p> <p><u>Flat organisational structure</u> – that affords broad discretion, but limited authority/responsibility</p> <p><u>Broad discretion for all workers</u> – within there range of authority have broad decision-making discretion</p> <p><u>Clear procedures for decision-making</u> – the existence of clear procedures and rules for decision-making</p> <p><u>Clear goals (mission statement)</u> – clear organisational goals exist to guide decision-making</p> <p><u>Opportunities to meet (team meetings)</u> – scheduled forums to be kept informed, make contributions and for decision-making</p> <p><u>Opportunities to shape direction (strategic planing meetings)</u> – scheduled forums for planing the direction of the organisation</p> <p><u>Access to information</u> – ability to access and share information</p> <p><u>Homogeneity of tasks</u> – similarity of overall tasks allows broad participation and sharing of work load and opportunities for expending role</p> <p><u>Career pathways</u> - for some there are pathways for advancement</p> <p><u>Shared commitment</u> – coworkers share a commitment to the Union and trade unionism</p> <p><u>Work tasks</u> – demands of the volume work activities and its intensity and complexity</p> <p><u>Work practices</u> – work practice that both encourage (e.g. team meetings) and inhibit interactions (e.g. ships that pass in the night)</p> <p><u>Division of labour</u> - roles likely to be distributed on bases of capacity, ability to manage participation, affiliations</p> <p><u>Employment status</u> – ongoing dynamic of activities and forums favour employees who are employed full -time</p>	<p>Individual engagement - The subject's engagement in the workplace is shaped by:</p> <p><u>Close interactions with secretary</u> – through extensive service, shared activities and commitments, a basis for interactions with the secretary exists</p> <p><u>Interactions with professional and industrial officers</u> - through extensive service, shared activities and commitments, a basis for interactions with the coworkers</p> <p><u>Capacity to manage participation</u> – the capacity to prioritise and focus parts of the work loads that have strategic goals are necessary to make the position firmer</p> <p><u>Strategic role</u> – provides the legitimacy to be more pro-active in work activities associated with position</p> <p><u>Relations with others</u> – how well she is able to interact with other workers with divergence of values, interests and affiliations</p> <p><u>Authority to act</u> – given the authority for much decision-making resides with secretary the capacity to secure authority to act from the secretary is essential to participation</p> <p><u>Shared values</u> – shared values with coworkers determines how interaction and decision-making occurs</p> <p><u>Personal standing</u> - - extensive service, shared activities and commitments, a basis for standing and implicit authority</p> <p><u>Belief in mission statement</u> – concurrence with mission statement provides a basis to advance interests of union</p> <p><u>Time to reflect-collaborate</u> – the time to reflect and engage with others represents a threat to participation</p> <p><u>Willingness and capacity to make submissions</u> – capacity and interest in making submissions shapes participation when submissions are important</p> <p><u>Other workers' values, goals and directions</u> – coworkers' values, interests and ambitions shape the quality, direct and bases for interactions and engagement in the workplace</p>

Note: - The list of affordances are taken as the pre-pre-perceptual bases as derived through interview and observation. They are not meant to be objective in so far as they can be wholly unitary and objective. However, the represent aspects of the social practice that workers in this workplace might recognise as being components – of the social practice.