Work as social practice: Activities and Interdependencies

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Abstract
Exercising work as social practice offers a means of understanding relations between behaviour and the social world; or the mind in activity. Recent views have proposed that cognition is distributed (Hutchins 1991, Resnick, et al. 1997) or stretched (Lave 1991) across the social partners and artifacts that comprise the social practice in which they act. Therefore, more than proposing social practice as a context for cognition, it seems necessary to understand the reciprocal, co-constructive nature of knowledge construction, its application and how judgements about its efficacy might arise. Emanating from these concerns, are important factors associated relations between individuals’ thinking, acting and knowing and how they act (Cobb 1998) (or are permitted to act) in social practice such as work (Darrah 1997, Hull 1997). The study of work as social practice may permit these relationships to be understood more clearly. From an investigation of emerging work practice, a basis for understanding work, the requirements for performance and the means for learning these requirements are presented. Based on a scheme comprising activities and interdependencies, it is proposed this work offers a tentative basis to understand relations between work, as a social practice, and individuals’ thinking acting and knowing.

1. Work, workpracrice and change
It is frequently claimed, the kinds of work, requirements for work performance and how individuals’ engage with work are changing. It follows that, clear understandings of these changes will make the goals and procedures of vocational education better informed and guided. However, identifying widely applicable prescriptions about what work comprises, its requirements or how individuals engage with work are likely be obscured by the way they differ across and within industry sectors. A review of recent studies of work (Billett 1999) provides a basis to consider the changes in the kinds of work taking place and what they mean for educational provisions. In America, for instance, there is an apparent shift away from manufacturing and agriculture, to professional, managerial and service work more generally. However, although, fewer workers are involved directly in agricultural production, more jobs are being created to distribute and transport food and food products. Barley and Orr (1997) noted that definitions of technical work and technical workers have become blurred by the widespread use of (electronic) workplace technology. So there are transformations in the kinds of work individuals do as well as how work is categorised within and across industry sectors. Yet, it would be incorrect to assume that work will become wholly technological or professional. Instead of a wholesale shift to so-called ‘knowledge work’ undertaken in high discretionary work practice, emerges the reality of growth of service sector work, much of which comprises routine tasks and contingent employment (Grubb 1996). Moreover, the concepts of industries or occupations fail to provide a uniform basis because of the diversity of
requirements and work practice. So how should the requirements of the contemporary work practice best be understood? What means should be advanced to identify and describe the requirements of work practice and inform practice in vocational education? The aim of the project, whose outcomes are described here, is to describe the requirements for practice in contemporary and emerging work situations, in order to advance further understandings of relationships between social practice and, thinking, acting and learning. Based on a review of recent studies of work and work practice, a scheme has been developed to identify, describe and analyse work practice. Three focuses were identified in an initial review of the literature: (i) the kinds of work being done; (ii) the requirements for performance at work; and (iii) how individuals participate in work practice. Further analyses identified the requirements for performance in work practice, what individuals might learn through practice and those factors that inhibit or ease access to the social practice of work.

The review of work focussed on anthropological, sociological, cultural psychological, economic and human resource development literatures, with the analytical frame drawing on the sociocultural approach to thinking and acting (Cole 1998, Rogoff 1990, Wertsch 1991, 1998). This view proposes historical, cultural, social and personal lines of development explain the genesis of knowledge and the influences on its construction by those who come to know (Cole 1985, 1998, Scribner 1985, Billett 1998). Within the scheme, two levels of analyses of work practice are proposed; at the occupational and situational levels. The occupational level comprises the socio-historic (phylogenetic) and sociocultural contributions to thinking and acting. The situational level comprises the requirements for performance at work in particular social practice as shaped by its activity system (Engestrom 1993, Leonteyev 1981). Both levels make useful but different kinds of contributions to our understanding of work. Central to this scheme are categories of Activities and Interdependencies used to identify and describe work practice and aggregate the culturally determined needs of the occupation. Within the scheme proposed below, occupational knowledge or level of development is viewed as being the product of a sociocultural need (Scribner 1985). The need to purchase goods led to the development of a retail industry (phylogenetic need) and the occupation of retail workers (sociocultural practice), for instance. However, how this cultural need is manifested differs according situational factors. Therefore, whereas occupational activities reflect particular sociocultural needs, what comprises the requirements for work need to be understood through accounts of actual practice; i.e. the enactment of retail work in supermarkets, hardware stores, clothes and sport shops. Vocational practice is shaped by the situations in which it is enacted. For instance, while there are procedures, concepts and goals that are part of vocations such as nursing (Cook et al 1997), hairdressing (Billett 1995) or retailing (Bernhardt 1999) how these vocational activities are manifested and cultural needs enacted will differ depending on the situational factors of the workplace. These factors are determined by the activity system of the social practice (Scribner & Beach 1993).

Therefore, whereas the occupational view represents ‘what should be’ – an idealised perspective of the vocational activity, the situational view informs about ‘what is’ – the actual practice. However, as requirements for and performance within work practice are unlikely to be uniform, expertise and goals for performance are likely to be understood situationally, rather wholly at the sociocultural level. Both levels of analysis and lines of the social genesis of knowledge make useful contributions to the analyses of work. The occupational level furnishes contributions in the form of norms, goals and procedures that
comprise occupational requirements. This level with its prescriptive ideals also plays a particular role in educational processes of mediating broader cultural needs against situational demands (Billett in press). Analysis at the situational level also informs about: (i) what will be learnt through participation in the workpractice and (ii) ways in which access to and participation in the workplace will be either aided or inhibited. The term workpractice is adopted here, rather than references to workplaces as the latter limits analyses of activities to a particular physical location. It is accepted that wherever workers are located can be workplaces (e.g. on a building site, in the delivery van), work practice more accurately focuses on a practice that is historically, culturally and situationally constituted. Terms such as ‘knowledge work or workers’ or ‘new workplaces’ are placed in the background of the analysis. The former is not clearly conceptualised and accounts in the literature resist useful application. Definitions of ‘knowledge workers’ share little that makes them a useful base to understand work, and comparisons between knowledge and traditional work are usually conceptualised in ways that fail to distinguish between the two. Similarly, ‘new workplaces’ appear as rhetoric, abstractions or propositions not sustained in studies of work. Certainly, the literature fails to reveal work practices (or workplaces) that fulfil the rhetoric.

2. Workpractice requirements and occupational need

As foreshadowed above, the requirements for performance at work differ widely across work, even in the same occupation. Much of the literature debates whether work is being up or down-skilled. However, again it is difficult to identify general trends either way or about performance requirements generally, except to note they differ widely and are not usefully categorisable wholly by the vocational category. Bailey (1993) describes quite different modes of work within both countries and industries. For instance, the traditional bundle approach to garment production is used in Germany and Japan, whereas other industries in those countries favour modular, team-based and technology driven approaches to production. Equally, across the clothing industry production systems other than the bundle system approach are commonly used. Bernhardt’s (1999) study of retail work describes the diverse premise for retail work. Whereas workers in chain pharmacies fill shelves and service clients at check outs, hardware store workers are expected to be highly knowledgeable about both the products they sell and their application in building and renovations. In prestigious department stores, retail workers also act as advisors, yet are sometimes remunerated by the commission they earn on sales in ways quite distinct from those in other retail work. So there are quite different requirements for work and bases for performance within industry sectors and occupational practice. They represent variants of different sociocultural practices, within the same evolving sociohistorical practice of retail work.

Few examples of the high discretionary, high skill ‘new workplace’, were identified in the literature. This kind of work practice is often heralded by human resource management specialists and by government. When located, these kinds of work practices are either not uniformly practiced within workplaces or remain underdeveloped. Enhanced worker discretion is sometimes imposed on uninterested and suspicious workers (Darrah 1996) or withdrawn if this discretion is perceived as eroding management control Danford 1998). In other situations, the discretion afforded workers is either selective or partial (Danford 1998) or not applied uniformly across areas same workplace (Billett 1994). Other studies illustrate the impact of technology on work. Again, there is a difficulty in categorising this impact as either de-skilling or requiring high skill workers. In banking, middle level workers are now required to use electronically-based systems in servicing clients.
remotely (Hughes & Bernhardt 1999). These ‘back room’ employees’ work has increased in discretion and through the use of technology includes a wider range of activities. However, these workers’ enhancements have resulted in reduction in both the quantum of ‘front room’ workers and the range of tasks for those who remain. Technological innovations in nursing have reduced some aspects of nurses’ work yet provides enhanced discretion and scope elsewhere (Cook-Gumperez & Hanna 1997). In addition, these innovations aid patient access to information about their health and treatment. However, much of the burgeoning service work is founded in routine tasks. Some components of this work are quite demanding. Recently, I observed car park valets using rich situational knowledge to maximise the space available in an inner city parking lot, while positioning vehicles to make them accessible for owners upon request. Equally, laundry workers demonstrated a capacity to remember names of first-time clients, and quickly locate their laundered clothes. However, for other service work, beyond effort saving strategies, there is little to make the job rich and complex. So it seems that the work requirements are unlikely to be satisfactorily identified by industry or occupational categories alone nor by simple prescriptions of change. Instead, it seems likely that the kinds of knowledge domains associated with occupational practice will be manifested and transformed by situational factors.

How individuals engage in work practice is salient to the determination of performance. The ability to engage in the mainstream workplace discourse, undertake the work perceived as being significant and to secure full-time work are more likely to participate in and gain access to the support and guidance than those unable to engage in central tasks (Darrah 1996, 1997), or participate in a part-time capacity (Hull 1997, Tam 1998). Access to work practice, participation in non-routine activities, guidance by others, will influence how individuals participate and whether they will move to become full participants in work practice. Therefore, the prospect of becoming an expert is likely to depend on factors other than the individual’s capacity to perform their work. Hence, the physical location of workers, the work they do, their gender, race, the workplace values and structures, and perceptions of standing may well determine the ability to perform. Further, in reviewing the literature, it is difficult not avoid the conclusion that workplaces are highly contested terrain. The impact of relations between and among individuals, teams and key interest groups cannot be reduced to a mere footnote. They pervade work, conceptions of performance and influence how individuals are able to act, and therefore learn. Yet, these factors can only be identified in the circumstances in which they are enacted. Therefore, a situational analysis, augmented by the requirements of the occupation may present the most viable means for identifying workplace performance.

3. Activities and interdependencies

The sociocultural and situational lines of development, as advanced in the sociocultural approach (Wertsch 1991) or cultural historical activity theory (Cole 1998), together provide bases for understanding work practice. These levels of social practice are both evolving and interdependent; they co-exist and shape each other. The ‘idealised’, but often contested, occupational view at the sociocultural level in some ways proposes ‘what should be’, yet is disembedded from vocational practice. It cannot be observed and often takes the form of prescriptions that respond to a set of cultural needs. There is a societal need for nurses, hairdressers, doctors, printers etc etc. This need arises from cultural demands and includes expectations about how this work should be performed. Nurses should care for the individual patient and be a point of contact between the health system and patient. Hairdressers should know a range of cuts and have the ability to transform
the appearance of a client if requested. However, these views are abstracted from practice and contested as well. Consider the range of societal views about teachers’ practice, for instance. In contrast, the situational analysis provides a description of actual practice (‘what is’), that is embedded in a particular situation and can be observed and is responsive to situational requirements. In this way, the demands of two levels or lines of socially-based development can be used to provide accounts of the requirements of work. Both are useful and make important and distinct contributions to our understanding of what comprises competence at work. Whereas activity systems inform about those factors that constitute the social practice, they are less useful in describing the requirements for practice arising from those factors. However, it is *Activities and Interdependencies* provide a useful basis for describing and analysing the requirements for practice. These ways of examining social practice are consistent with the sociocultural approach as they focus on the goal-directed activities that are the product of social practice and interactions with others and artifacts as the basis of knowing and acting (Wertsch 1991, 1998). Activities are held as the manifestation of tasks (goal-directed activities) in the work practice, which are a product of its activity system, as they might be perceived typically by those engaged in it and experienced as common phenomena. In particular, they are an embodiment of situational factors that determine how sociocultural practice (e.g. occupational knowledge) is manifested in the particular context in the form of activities and interactions or interdependencies. As the activities have been categorised in the scheme used here they could be mistaken as reflecting a cognitive-based phenomenon. However, it is important that the requirements are not be seen as “bundles of skills that are in some way separate from that social practice in which they are engaged” (Berryman 1993: 346). Consequently, these activities can only be understood when referenced to the conduct of actual practice and how these activities are manifested in that practice.

‘Interdependencies’ comprise interactions with others and artifacts (tools, technology, physical environment) that influence how individuals participate in, perform and construct understandings of and are themselves transformed by workpractice. It is these interactions and interdependencies that also mediate the application and development of the individuals’ use of tools and artifacts that are engaged in that practice (Hutchins 1991, Resnick, et al 1997, Suchman 1997). Hence, interdependence is a key basis for understanding performance at work and is not separable from activities. Earlier, interdependence referred to “the extent to which unit personnel are dependent upon one another to perform their individual jobs” (Van de Ven 1976:323). However, here the term captures the interdependency of agent, activity, world, meaning, knowing and learning (Lave 1991, Wertsch 1991, 1998). Similarly, the literature on the distributed basis of knowing proposes that knowing is ‘stretched’ (Lave 1991) or distributed (Hutchins 1991) across the social partners and artifacts in social practice. This means that it is necessary to account for the way knowing, and hence performance, is premised on interdependencies with others and artifacts within the particular social practice. Recent critiques (e.g. Cobb 1998) have suggested that not all ‘knowing’ is distributed across social systems. Moreover, where it is, it is distributed kind unevenly within a particular social setting. This view of interdependency holds that interactions and tools do not simply facilitate an existing mental function while leaving it qualitatively unchanged, rather they are part of the change with doing becoming learning (Wertsch 1991). Thus interdependence is a key defining basis for understanding not only performance at work but also learning and how individuals are able to access practice, participate and know how to perform in the role.
3.1 Activities and Interdependence: A topography of workpractice

In order to identify and describe what constitutes performance in particular work situations, the scheme referred to above comprising dimensions of situational and occupational factors has been developed (Billett 1999). However, the key focus of this paper is at the situational level as a means of accounting for the requirements of practice embedded in action. Building on what has been discussed above, the scheme is framed by categories of Activities conducted and the Interdependence required for performance at work. Within each are categories of activities and interdependencies that have been synthesised from the literature (Billett 1999a). They are seen to be as comprehensive at this time but may well be extended further as additional workpractice factors emerge. These categories are as follows

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** – the degree by which work task decision-making is complicated by compounding variables and the requirement for negotiation among those variables
- **Multiplicity** – the range of activities expected to be undertaken as part of work practice
- **Complexity** - the degree by which knowledge required for the work practice is either accessible or hidden; and
- **Accessibility** (opaqueness of knowledge) - the degree by which knowledge required for the work practice is either accessible or hidden (Billett 1999a)

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, its perceived value 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 (Billett 1999a)

The dimensions of Activities and Interdependence make three distinct contributions to understanding performance at work: (i) goals for learning; (ii) processes of learning; and (iii) access to work practice.

3.2 Goals for learning

The categories within both activities and interdependencies identify the requirements for performance in the particular work practice, thereby becoming goals for learning, in conjunction with the contributions from the occupational level that provides goals, concepts, norms and procedures. The degree by which work tasks in their entirety or in
part are ‘routine or non-routine’, or are complex, intense or multifaceted provide a basis for considering what procedures and understanding are required to perform tasks which are predictable (routine) as well as identifying the ability to perform in less predictable circumstances. Equally, statements about the conception of ‘working with others’ will determine whether the tasks require the individual to participate as part of a team or as a subordinate and/or directly or indirectly negotiating with individuals outside the organisation (e.g. clients). Hence, the first contribution of this scheme is for the characteristics of the work task to be identified and described, thereby providing goals for performance. In different ways, each of these provides information about the requirements for performance at work.

3.3 Processes of learning
These dimensions of practice also indicate how learning is likely to be mediated in workplaces when individuals engage in practice. This is the second contribution. Learning or knowing is held to be a product of engagement in activities (goal-directed activities). Individuals’ everyday thinking and acting is not separable from their learning. This learning might comprise either the reinforcement of their knowledge or what they ‘know’, or its further development - doing is knowing. This learning might include that which might be judged by some as being inappropriate. Therefore, the kinds of activities individuals participate in during their workpractice will influence what they learn. Also, as knowledge is socially sourced and developed, the kinds of interactions individuals engage in, also influences how and what they learn. It is from others, either directly or indirectly, that we are able to source much of what we know and especially the knowledge not likely to be ‘discover’ alone. As individuals engage in goal-directed activities in the workplace, for example, the routine or non-routine activities that comprise their daily experience, and negotiate the organisation of work (e.g. in teams) they learn from these experiences. Yet, it is important to emphasis the interdependence of these dimensions. An individual working in circumstances remote from others (e.g. home worker or sales representative) may find themselves engaged continually in lots of independent problem solving. Yet access to observing and monitoring the performance of others may be difficult or mediated in quite indirect ways. Therefore, in different ways, these interdependent dimensions of work practice mediate learning. Accordingly, more than just informing about goals for learning, these categories of activities and interdependencies also inform about the likely learning processes and outcomes in the work practice. From these, the outcomes of participation can be predicted.

3.4 Access to work practice
The categories of activities and interdependencies also inform about the contested nature of work practice and how this might either facilitate or inhibit individuals’ ability to participate fully in the workpractice. From even a cursory examination of the literature it is evident that work is contested terrain. Conflictual relations between and among individuals, teams and key interest groups cannot be reduced to a mere footnote. It seems they pervade work and performance within it. Whether the contestation is between ‘newcomers’ or ‘old-timers’ (Lave & Wenger 1991), full or part-time workers (Bernhardt 1999); teams with different roles and standing in the workplace (Daragh 1996, 1997; Hull 1997) between individuals’ personal and vocational goals or among institutionalised arrangements such as those representing workers, supervisors or management (Danford 1996), contestation is an enduring feature of work practice. It would be derelict to only view matters of engagement in routine or non-routine activities or engagement in teams of different kinds as cognitive tasks only without trying to understand the (apparently)
inherently contested nature of work practice that determines who has access to different kinds of tasks. The educational consequences of this contestation are identifiable (e.g. non-English speakers exclusion from work, reluctance of old timers to share knowledge), they also inform about work performance (e.g. power relations in working with others – nurses with doctors; temporary staff interacting with full-time staff, supervisors dismantling teams when they threaten line management, workplace cliques). Given the social organisation of work, an account of the ways in which this organisation is likely to assist or impede individuals’ development is a necessary consideration for vocational education.

4. Summary
So in summary, understanding the requirements for work needs to be focussed upon the particular practice in which work is enacted, yet be informed by other lines of social development. Thinking, acting and knowing at work can be best understood by the demands of the activities, how engagement mediates learning and how individuals are able to access that social practice. The intersection between the individuals’ personal history and the evolving social practice offers a basis to consider the relationship between the mind and social practice. The interdependencies associated with acting, engagement and knowing influence how individuals acting in social practice contributes to their ontogenetic development through moment-by-moment problem-solving or microgenetic development (Rogoff 1995). The need for particular types of work is shaped by cultural needs that transcend the particular situation. It has been proposed using the sociocultural approach (Wertsch 1991, Cole 1998), that situational factors determine the shaping of the work practice in which individuals perform and participate in different ways. Through analyses of both activities and interdependencies at the situational level (and also the occupational – sociocultural level), these requirements may be identified, described and analysed. Through this, what is required for performance, which is likely to be learnt through participation and how individuals are able to participate can also be understood. In different ways the contributions of the work practice will determine access to participation and in ways that are not uniform. Even if vocational education is only about developing bundles of such skills, it would be necessary to understand and develop responses which assist the application of knowledge to circumstances of their application. However, there are broader goals for vocational education central to the sectors concerns to understand those factors that are likely to determine access to participation and guidance in developing the requirements for performance, and also the ability to transfer that knowledge elsewhere. Hence, together, the two levels of social practice or lines of development offer a means to understand not only ‘what is’ at the situational level, but also ‘what should be’ might be to extend the potential of the application and address needs other than those recognizable within the situated practice.

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References


Billett, S 1999, Changing work, practices and engagement: Understanding performance at work. Faculty of Education, Griffith University


Billett, S 1995, Structuring knowledge through authentic activities. Unpublished PhD dissertation, Griffith University, Australia.


