

Workplace ‘learning’ and adult education: Messy objects, blurry maps and making difference

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Abstract

This article reviews diverse representations of learning evident among published accounts of workplace learning across fields such as adult education, human resource development, management and organisation studies. The discussion critically addresses the question of how to mediate a multiplicity of definitional, ideological and purposive orientations. The argument here is that the issue is not perspectival, but ontological. The critical problem lies in mistaking learning as a single object when in fact it is enacted as multiple objects, as very different things in different logics of study and practice. Particularly in the contested arena of work as a site of economic conflict and production, learning needs to be appreciated as a messy object, existing in different states, or perhaps a series of different objects that are patched together through some manufactured linkages.

If a field called ‘workplace learning’ can be argued to exist, it would need to embrace research and interventions now proliferating within a wide range of fields. Adult education is only one of these regions, itself a highly multi-disciplinary, conflictual and elusive group of activities and actors. Adult education finds itself tackling issues of workplace learning alongside fields which often operate with fundamentally different starting points and purposes, yet share equally strong interest and investment in workplace learning. These fields include, at the minimum, human resource development with its focus on developing organizations and individual careers; organization and management studies with primary interests in understanding and improving organizational performance and culture; professional and vocational education concerned with training individuals; and labour studies oriented to workers’ well-being and collective empowerment. While the same terms - ‘learning’, ‘development’, ‘pedagogy’ and ‘education’ – are visible in the discourses of all of these fields, they bear radically different meanings, framed by different logics and questions. These terms also are employed towards very different ends. The term *learning* is used, for example, to refer to skill development, information access and personal consciousness-raising for individuals. The same term is employed to describe system processes ranging from innovation and organizational change to knowledge management. Further, as Usher and Edwards (2007) show in their extended discussion of lifelong learning discourses, ‘learning’ is a wily shapeshifter, conjuring itself in discursive guises such as policy imperative, code for growth, and synonym for education. One is tempted sometimes to abandon the word as utterly hollowed out of any meaning worth discussing.

But in most studies of workplace learning, the term is employed straightforwardly in attempts to represent an actual observed phenomenon. Something happens in work activity, something distinct from other aspects of the ongoing flow of interactions and

labour, that is called learning. Not many writers, as this discussion will show, offer precise definitions about what they mean by ‘learning’ when they present their descriptions of this phenomenon. This tendency to omit explicit definitions of learning, either because it’s too difficult or it seems unnecessary, reinforces the problematic assumption that ‘learning’ is a single object, self-evident and mutually understood. Further, the disparate and often conflicting purposes for promoting learning in the workplace – from increasing a firm’s competitiveness or an individual’s labour mobility to building economic democracy or sustainable ecologies in organizations – can become so invisible that we sometimes forget to ask the question that should be core in any discussion of learning: learning *what*, exactly? learning *for what*, because *why*?

These two issues of definition and purpose pose problems for anyone studying workplace learning. The nature of these problems is often attributed to interpretation: we all have different perspectives, and just need to be reminded to make them explicit. However, this article argues for a different analysis. The problem is not simply one of perspective, as though all perspectives can be embraced and understood in a single ontology that values things like inclusion and tolerance. The critical problem lies in mistaking learning as a single object when in fact it is enacted as multiple objects, as very different things in different logics of study and practice. At the very least, particularly in the contested arena of work as a site of economic conflict and production, learning needs to be appreciated as a messy object, existing in different states, or perhaps a series of different objects that are patched together through some manufactured linkages. For those who align themselves more with the sensibilities of adult education, however they might define that field, than with fields such as HRD, management, organization, vocational or labour studies, there lies a responsibility in surfacing and confronting this problem. Because the understanding of learning is arguably a core tenet of adult education tradition, we should expect adult education researchers to help delineate the diverse objects that have come to be represented under the one over-stretched signifier of ‘learning’. Even better, adult education might help extend conceptual strategies for bridging these messy objects calling themselves learning, and suggest languages for tracing their diverse enactments.

The discussion here draws from a review of workplace learning articles published in journals across fields of HRD, organization/management studies, and adult education. This review illustrates the messy object(s) and purposes that are called learning among these publications. The first section of the article outlines the diverse maps of learning that emerged in the study, showing how researchers in diverse fields were conceptualizing and representing various workplace phenomena that they all referred to as learning. The second section discusses the distinctions among these phenomena, arguing that these represent fundamental differences that are not merely definitional, but also ontological: that they actually delineate different objects of study. The third section discusses these themes with a view to exploring the responsibility of adult education confronting these messy objects and blurry maps of workplace learning. This responsibility is not just about, or even mostly about, normative purposes associated with ‘making a (positive) difference’, but about making *difference* that resists the press to seek similarity. Making difference resists the assumption that learning is one universally-understood phenomenon and that all workplace learning purposes are benignly aligned:

making difference is about highlighting distinctions and provoking debates, as well as about building the partial connections that may be possible between those distinctions.

Different Objects and Maps of Learning

The study from which this discussion draws was a meta-review of workplace learning research published in ten journals within the six-year period 1999-2004. All articles in these journals that focused on topics clearly pertaining to *learning* in and through work (processes, dimensions, relations) were included in the analysis. The journals, all scholarly refereed publications, were selected to represent diverse audiences in adult education, management/organization studies, and HRD (the brackets show the number of articles from that journal included in the review): *Journal of Workplace Learning* (52), *Management Learning* (44), *Organization Studies* (16), *Organization* (9), *International Journal of Lifelong Education* (8), *Studies in Continuing Education* (21), *Studies in the Education of Adults* (7), *Human Resource Development International* (20), and *Human Resource Development Quarterly* (31). Methodological details of article selection and analysis, as well as full discussion of the themes and the study limitations, are reported in Fenwick (2008) and Fenwick and Rubenson (2005). The focus here is on the researchers' diverse objects of inquiry. While most researchers explicitly used the term 'learning' to represent these objects, almost none defined explicitly what they meant by learning. Many invented different models or maps to articulate these objects. We grouped these maps into eight categories. The groupings were emergent, and were intended to capture what seemed to be ontological distinctions in the relations among knowledge, individual minds, experienced events, groups of people in action, and whatever was construed to be the 'organization'. In most of the publications, the focus was on relations of the social and personal, with a concern to distinguishing the 'individual' and various configurations of the 'collective' or group. In a very few publications, authors eschewed such distinctions and worked with more emergent or blurred categories, and even included non-human objects as important actors. These were so few (in this period of workplace learning literature) that we grouped them into one category even though there are significantly different orientations collected there. Of course, the delineation of any categories such as these eight is an imperfect map-making exercise. Some categories overlap. Some may protest this particular map's inclusions, exclusions, and forms of representation. So let us treat these categories as nothing more than provisional and indicative, a way of introducing the discussion that follows in section two. Each theme here is described only briefly to indicate the key distinctions reported in the earlier publications.

1. Sensemaking and reflective dialogue

Here the emphasis is on learning as reflective meaning-making, through language. Appearing in 14 articles or about 6% of the dataset, the sensemaking theme portrays learning as individual and collective construction of (new or altered) meanings: to identify problems, emerge solutions, or engage in collective inquiry. Research focused on the nature of reflection, and what factors influence particular meaning constructions at work (Svensson *et al.* 2004). The collective was viewed as a prompt for individual critical reflection, a forum for meaning sharing among individuals, and a forum for

conflicting meanings that must be worked through to create new knowledge. Further, the collective moulds particular meanings among workers (such as accepting the opinions of those in power). Yet individual intentions shape the meanings they bring to the collective (Jorgenson, 2004). A number of studies took up story-telling for work learning: building the collective, helping it appreciate issues, confront counter stories, reconstruct canonized stories, and name its experiences (e.g. Abma, 2003). However, researchers critical of sensemaking ideas showed the rarity in practice of group critical reflection, dialogue and inquiry. Individuals are disillusioned with such practices (Snell, 2002), and the notion fails to sufficiently account for power relations in workplaces and knowledge hierarchies – including those created by researchers.

2. 'Levels' of learning

Here the organization and individual (and team) are viewed as separate, distinct levels and forms of learning, not intertwined or co-participational. This static layer-cake depiction, present in about 17 articles or 8% of the dataset, is similar to the networks model (#3 below) but goes beyond linear transmission of information to acknowledge practices and politics. Research focused on what happened at different levels, how different levels affected one another, how to link the levels in practice, and how/when to balance the 'exploratory' (knowledge creating) with the 'exploitive' (knowledge diffusion) dynamics. An example is Lehesvirta (2004) analysing interactions among three learning levels (individual, group, organization) and four processes (intuiting, interpreting, integrating, and institutionalising). Brady & Davies (2004) suggested different learning phases (innovation, sharing, routinizing) for different project phases and levels such as individual-to-project. The link between levels was often conceptualised rather mechanistically as cross-fertilization, diffusion, pipeline sharing, and even motoring (Cule, Robey, 2004). Factors affecting the linkage of different learning 'levels' were identified as social (e.g., tensions, caution and blame created between levels of micro-politics), institutional (rules, or protection mechanisms at each level); or personal (individual career aspirations). Only two articles worked more critically within a 'levels' analysis of learning, and both used a critical conflict perspective contrasting collective structures (labour exchange process and human capital ideology of workplace) with workers' learning (conceived as worker empowerment and autonomy).

3. Networks of information transmission

Here, learning refers to individuals and teams sharing useful strategies through networks within and across organizations, often electronically-enabled, primarily for purposes of improving others' performance. Learning is thus information transmission, through networks which operate as linear pipelines. (This orientation, it must be noted, is fundamentally different to the tenets of actor-network theory which, although using the term 'network', conceives networks and their assemblage and power in much more complex terms). Networks as linear information transmission was evident in 19 articles or about 9% of the dataset. The key research preoccupations are improving diffusion: 'capturing', managing and organizing content, removing network barriers, and generally facilitating efficient, effective information flow or 'knowledge transmission' (just-in-time) through a network. Learning networks are reported to take different shapes related

to contexts, work characteristics, interactions, actor dynamics and strategies; interorganizational networks are the most complex and take long time periods to develop. Most other findings reported in this data set are related to socio-cultural issues.

Individuals and teams are willing to share if sharing is valued and supported; and if the organization restructures pay-offs for contributing, increases efficacy perceptions, and makes employees' sense of group identity and personal responsibility more salient (Cabrera and Cabrera, 2002). Micro-politics inhibit free knowledge sharing (Currie and Kerrin, 2004), affects what information is shared and what is perceived as actual and desired performance. Critique of this network transmission model focuses on its linearity, rational conception of knowledge, and tendency to separate knowledge from activity (Wood and Ferlie, 2003).

4. Communities of practice

This notion, popularized principally by Wenger (2000), views learning as participation, embodied in the joint action of a group of practitioners sharing identity, tasks and/or environment. The individual does not receive particular attention as separate from the community: the relation of individual learning processes to collective processes is rarely actually theorized, so individual difference in perspective, disposition, position, social/cultural capital, and forms of participation is unaccounted for. The CoP orientation, despite its apparent proliferation in workplace learning discourses, appeared in only 24 articles or about 11% of the dataset. Research seeks to explain the adaptation and reconfiguration of practices to meet changing pressures, and identify ways to facilitate these dynamics. Community learning is affected by both relational stability (trust), variety (new ideas, risk), and group structure (networks, competence) (Bogenrieder and Nooteboom, 2004). Learning is constrained by time pressure, deferral, and centralization within and across projects (Keegan and Turner, 2001). At least five articles discussed problems with the CoP model, including its insufficient analysis of macro-politics and solidarities within the community expertise and specialized knowledge (especially how to develop it during rapid change); individual habitus and agency/structure dynamics; and innovation, which appears to occur more at interface of CoPs than within them (Reedy, 2003; Swan et al. 2002).

5. Individual human development

Here the focus is solidly on the individual, with the assumption that the individual learns and then affects the group. The purpose is mostly about developing individuals, not producing skills and innovation for the organization (Jacobs and Washington 2003). The general base is constructivist learning, e.g. through reflection, and respect for individual's history, with focus on individual's meaning-making and helping individuals to continually learn. This orientation of individual human development, appearing in about 27 articles or 13% of the dataset, was particularly prominent in discussions of continuing professional education and human resource development. Research preoccupations included how to promote individuals' self-directed learning capability (Straka, 2000), and how to understand the relation of work to individual developmental processes and learning styles. The role of the collective was vague or not mentioned, but the primary assumption was that aspects of context served primarily to foster the individual's learning ability.

6. Individual knowledge acquisition = human capital

These articles presented learning in the most conventional cognitive terms, as an individual human process of mentally acquiring and storing new concepts and skills/behaviours. The focus frequently was on the translation of learning to capabilities or capital that adds value to organizational resources (Nafukho *et al.*, 2004). This perspective was present in all journals except two, and appeared to be the dominant perspective in about 34 articles or 16% of the data set (the frequency dropped off after about 2001 in all fields except human resource development). Research tended to focus on how to ‘harness’, draw out and use the individual’s acquired knowledge.

Preoccupations included transferring acquired knowledge to practice, measuring competency (reliable valid measures and competence definitions are identified as problematic), narrowing the gap between training investment and results, and turning ‘tacit’ knowledge acquisition into ‘explicit’ knowledge (Weithoff, 2004). A key finding of this review overall was that, despite some movement to more practice-based, socio-material conceptions of learning, where boundaries between individuals and objects are considered mutually constitutive and learning is viewed as relational knowledge production rather than mentalist acquisition, the conception of learning as individual knowledge acquisition persists strongly.

7. Co-participation and emergence

Each of these terms ‘co-participation’ and ‘emergence’ arose to characterize an enmeshment of individual and social processes, usually acknowledging the importance of artifacts as mediators in these processes. This category, including 35 articles or 17% of the dataset, embraces various perspectives of learning as knowledge creation through social or even socio-material participation in everyday activity. The conception is of mutual interaction and modification between individual actors, their histories, motivations and perspectives, and the collective (including social structures, cultural norms and histories, other actors). Some theorists retain the individual as an autonomous singularity, distinct from other elements comprising the community. Billett (2004) for instance delineates the agency/biography of individuals as separate but interacting with the affordances/constraints of work environments in a dynamic of ‘relational interdependency’. Olesen (2001) also maintains a clear separation between individuals, their subjective experiences and identity, and the collective - particularly the social division of labour and social practices of everyday work – while emphasizing ongoing mutual interaction and influence. Elkjaer (2003), from a pragmatic perspective drawing from Deweyan concepts of experiential learning through inquiry, delineates the collective from individuals and individual processes of thinking ‘to acquire’ and reflection to pose and solve problems, but views individuals and organizations as ‘inseparable’ for both are ‘products and producers of human beings and knowledge’ (p. 491). Other more radical versions expanded the ‘collective’ to include environmental architecture, discourses and objects, as in actor-network theory (in three articles) where knowledge circulates and is ‘translated’ in each interaction of one agent mobilizing another. Cultural-historical activity theory (in seven articles) viewed individual and organization in dialectical relationship, where learning is occasioned by questioning practices or contradictions of the system, and is distributed among system elements: perspectives, activities, artefacts,

affected by all contributors and clients. Complexity theory (in seven articles) explicitly uses the term ‘emergence’. Learning here is inventive/adaptive activity produced continuously through action and relations of complex systems, occasioned through disturbance.

Most agreed that learning is prompted by particular individuals (guides or mentors), events (conflict or disturbance), leaders (e.g. encouraging inquiry, supporting improvisation), or conditions ('learning architecture'). Issues raised included accreditation and assessment of learning when it's buried in co-participation, how to distinguish desirable from undesirable knowledge development, how to account for changing notions of what is useful knowledge, and identifying different influences of particular groups in the co-participational flux (positional, generational, gendered, etc).

8. Individuals in community

This orientation, evident in about 41 articles or 19% of the dataset, maintains a clear separation between the individual as a being and the community as a sort of monolithic, identifiable container. The individual learns through action in this community, and learning is affected by social, cultural cognitive contexts, but the fundamental focus remains the *individual*. This is a key distinction from the communities of practice orientation. Here, environment is only a *mediating* factor on individual learning and cognition, separate from the individual, not entwined with it. The individual affects the community knowledge by injecting new ideas, and the community affects the individual's behaviour through teaching, providing resources, enabling action opportunities, etc. Research focused on what kinds of environments/communities positively affect individuals' learning and how to generate these conditions; and how individual learning can help improve the community. Findings reported in the data set stress differences among individuals in expectations, preferences and ways of participating (Filstad, 2004) including women and younger workers. Individual differences are affected by the collective's structures and opportunities/barriers to learning. Those with a greater sense of control over their work are more likely to engage in learning (Livingstone, 2001), such as in more democratic work structures or professionals developing individual expertise. The impact of the collective on individual learning is greatest in socialization (task mastery, role clarification, and social integration) and in defining or demanding particular competencies, and in the reward system and values placed on learning. However, even embedded in social structures, the individual retains a ‘durable disposition’ to act (Mutch, 2003), and workers organize their own learning regardless of management boundaries and innovation expectations (Poell and Van der Krog, 2003).

Overall, across the different categories and orientations calling themselves ‘learning’ that emerged in this review of publications from 1999-2004, some general observations might be ventured. First, in this period of literature about work processes and activities, perhaps linked somewhat to the first international conference for *Researching Work and Learning* held in 1999 (at the University of Leeds), there was a flowering of publication about workplace learning across diverse fields ranging from studies in innovation and

technology to migration research. Second, a large part of this literature foregrounded some notion of ‘context’ in its discussions of learning. In particular, the most prominent preoccupation was conceptualize the relations between the individual and the collective: in producing knowledge, in modifying practices, in mutually constituting (or resisting) one another, and in opening or closing opportunities for reciprocity. Third, in a small number of publications, we saw some emphasis on the role of material artefacts, such as texts and tools, in conceptions of learning. However alongside these expanding threads, there persisted more conventional ‘mentalist’ orientations to learning as an individual acquisitive phenomenon, often rooted in normative positions of improvement along a linear trajectory of development.

After 2005

What has transpired in the five years since this review was conducted? We did not conduct a systematic follow-up meta-review. However, the following observations are offered in the spirit of informal notes from a dedicated reviewer of workplace learning literature. As such they are subject to the usual limitations, idiosyncracies and fallibilities of any interpretive exercise, particularly an overview. First, it seems clear that these interests in relations between individuals and the collective, and in particular the role of materiality and artefacts in workplace learning, appear to be increasing. A ‘practice-based turn’ was signalled a decade ago in organizational studies through publications such as Schatzki (2001) and Gherardi (2000). This trend has been growing, claims Gherardi (2009) in her introduction to a recent special issue in *Management Learning* (Vol. 40 No. 2) devoted to views of practice-based learning. This issue features articles that take learning to be the ongoing configurations and reconfigurations of practice – unfolding, emergent, situated in activity, acknowledging the important mediating function of artefacts but still focusing on the human interactions of activity.

Another, related branch of inquiry that receives increased attention of late is Science and Technology Studies or STS. In a recent special issue of *Organization* devoted to STS (Vol. 16 No. 1), authors emphasise materiality in learning, as well as ontological politics – people literally juggling different but overlapping realities in practice settings (e.g., Hitchin and Maksymiw 2009). The relative lack of attention to STS concepts and methods among educational researchers is surprising, particularly in workplace learning issues where digital media and other technologies have become intimately entwined with work activity and knowledge sources. Another socio-material orientation that to date appears only rarely in educational research is critical realism. First promoted in different forms by Roy Bhaskar and Margaret Archer, critical realism is gaining significant attention in organization/management studies of workplace learning, according to Fleetwood (2005). In contrast, the world of cultural-historical activity theory has grown to establish a dominant position in Europe and the UK in educational workplace learning analyses (e.g., Daniels et al. 2009, Unwin et al. 2009; Sawchuk 2006) as well as in organization studies.

In studies of professional learning, discussions of learning as reflective practice – still largely conceived as a process of mentalist, individual meditation on lived experience –

continue to lead the debates (Boud et al., 1985; Bradbury et al., 2010; Fook and Gardner 2007). However, Boud (2010: 32) now interrupts what he refers to as ‘earlier ideas’ treating learning *as* reflection by arguing that ‘Reflection connects work and learning; it operates in the space between the two. It provides a link between knowing and producing.’ Just what is *learning* in this orientation is not explicit, though Boud’s step away from learning as a primarily mentalist reflective process is significant given his historic and frequently-cited contributions to this view. The new journal *Vocations and Learning: Studies in Vocational and Professional Education* (Springer), launched in 2008, features diverse framings but in particular has published several pieces exploring professional identities, and links among professionals’ learning, expertise, identity and even policy.

Psychoanalytic understandings of professionals’ learning have been flourishing in some isolated pockets of educational research (e.g. see Britzman 2009; Olesen 2007; West 2004). Here, learning is conscious encounters with the raw desires, fears and messy difficulty of the unconscious or what Lacan calls the ‘Real’. Again, such explorations are overlooked in adult education’s treatments of workplace learning. A particularly promising body of European work on professional learning has recently emerged to conceptualize ‘epistementalities’ of professionals, highlighting the relations of individuals’ epistemic strategies with professional knowledge cultures, mediated by objects, as these play out in the shifting tensions of particular work activities and challenges (Lahn and Jensen 2007; Knorr-Cetina 2007; Nerland 2010).

Finally, questions of power seem now to enjoy increased importance in analyses of learning in the workplace. In the meta-review focused on publications of 1999-2004, only 15 percent touched upon power relations in learning such as politics of micro-social relations, knowledge and identity, organizational hierarchies and recognitions. Fewer than 10% at that time addressed gender relations and less than 5% mentioned race or class issues in learning. Those articles that discussed power in any depth were almost exclusively theoretical in nature (e.g. Huzzard 2004). Community-of-practice studies often glossed over cultural-political dynamics or issues of control and centralizing tendencies in such communities. In studies where power was mentioned the reference tended to be to the micropolitics of the organization rather than systemic analyses of how power functions to position people and practices, promote interests, recognize some knowledge and ignore others. However recently, perhaps partly due to the proliferation of texts and talks at least in the UK related to ‘critical management studies’ (CMS), there have appeared more publications discussing emancipatory learning in the workplace in organization/management studies. Human resource development scholarship in particular has registered growing interest in ‘critical HRD’ derived from CMS approaches (e.g. see Callaghan 2007 and Stewart et al. 2006). More workplace learning studies have appeared recently employing Foucault’s conceptions of governmentality, disciplinary circuits producing power, and technologies of the self (e.g. Fejes and Nicoll 2008). Only three articles of the original meta-review employed Foucauldian concepts, which is odd given the early proliferation of Foucault-inspired analyses in education and learning (Ball, 1990; Popkewitz, 1997).

Learning as product, as process, as practice

An inherent source of confusion is the use of the term ‘learning’ as both a verb (the process of learning) and as a noun (the product of a change process). While process and outcome are related, they are enacted as different phenomena, and provoke different questions. Learning as process is elusive and imminent. It resists representation, and is usually inferred through glimpses such as narrative accounts or ‘indicators’ awkwardly manufactured from visible activity. Further complicating notions of learning as process are the different foci used by analysts. Some are discussing the process by which an individual constructs new concepts or develops new behaviours, often for purposes of informing pedagogic efforts to support this process. But for organizational developers, what is meant by learning is often the process of collective change, such as knowledge creation as a movement from the birth of an innovation to its embedding in organizational routines. For others, learning is more radical: a transformation in the basic assumptions structuring an individual’s core beliefs or a group’s cultural practices.

For some, learning is ongoing everyday sense-making, a natural part of the assemblage of one’s life narratives, within individuals or among groups – which begs questions about the distinction between ‘learning’ and breathing, or between learning and experience. In its broadest terms, the learning-as-process view embraces all meaning-making. Billett (2000) writes, ‘If we are thinking and acting we are learning’. Learning is ‘continuous active improvisation’ (Tikkanen, 2002), or ‘continuous collective construction of a social reality’ (Samra-Fredericks, 2003). But if learning embraces all conscious experience and sense-making, individual and collective, what then is *not* learning? The object that was learning ultimately dissolves.

In learning studies drawing from a ‘practice-based’ or participational metaphor, learning is almost conflated with ongoing practice itself. Practices are described in terms of knowledge-circulation, and learning is then a web of micro-interactions socializing workers and their tools to a community. For some the purposes have to do with an individual becoming a fuller participant in practice, while others strive for an outcome of changed or ‘reconfigured’ practices. Practice is reified and learning limited to actions recognizable within an existing community of routines.

As described in Fenwick (2006), learning is also used to refer to outcomes: the knowledge produced or the evidence of behavioural change. Some clarify their intent to examine product by calling it ‘learning outcome’, but many simply use learning to mean both knowledge-creating actions as well as new knowledge that has been created and captured (e.g. Macpherson et al., 2003). Hager (2004) argued that the common-sense view of learning is in fact product-oriented: most people think of learning as acquisition of new skills. In these orientations, learning = knowledge which = information. Information is often treated in a static fashion as something that can be created, used, exchanged and stored. Few questions are raised about what is recognized as new, what is ‘useful’, what is foregrounded as a solution, or from whose vantage point (spatially and temporally) all of these judgments are made. Most critical, the meaning and scope of the term learning as employed by the author(s) or the workplace actors is rarely made explicit in these writings. Not only hidden realities, but also hidden normativities lurk in these enactments.

Whether or not we accept the eight categories into which the meta-review grouped the diverse enactments of learning that were evident in these studies, or whether we agree

that learning as product or residue is fundamentally distinct from learning as process, it is difficult to discern much commonality among these understandings. Knowledge acquisition achieved by an individual is arguably a wholly different phenomenon to ongoing human development (emotional, intellectual, social), but also distinct from networks of information flow, or levels of knowledge-making. Processes of meaning-making may share links with the embodied activity of joint participation, but one exists in a world of human interpretation and its representation while the other is located among webs of imminent material enactments. These phenomena appear related, but they are different. Different and the same at once, co-existing, sometimes in the same space. They are messy objects.

Messy objects and multiple ontologies

Why does this matter? Mostly because we can waste a lot of time arguing over definitions and normative prescriptions of learning, or about which theory of learning is the best (has the most explanatory power, is the more robust, fecund, generalizable, etc), or about what workplace learning is the most desirable (most politically supportable, most useful, etc) when we might simply acknowledge that we are talking about different objects. To try to collapse these objects into one and suggest that they are simply different worldviews is to assume that there is one world, one ontology (for example, that of whomever is speaking). Everyone and everything else is appropriated into this one world. Others' worlds of framing, touching, analysis and reality are relegated to being merely a different 'view' of this world. With such a move, then, we can compare these views and even find them deficient according to the prevailing ontological laws governing our own knowledge. Henare, Holbraad and Wastell (2006) show how classical anthropology often fell into this trap. For example, an ethnographer meets Cuban diviners who try to show him that aché, a substance used in their séances, constitutes divinatory power. Our researcher may understand this as their (naïve) worldview of what is really just white powder. But for the Cuban diviners, the powder *is* magic, *it is* power. In their reality, this object is fundamentally different to the white powder that exists for the researcher. Henare et al. argue that this is an important distinction – to appreciate that the question is not just of different worldviews, but of different ontological worlds. In studies of workplace learning, it seems that a similar thing is happening: we each may be looking at an object that appears to be the same entity, and calling it the same thing, when it actually exists as different co-habiting entities.

Returning to the articles that were compared in the meta-review (Fenwick 2008), a focus of attention for many of these studies was the *context* of learning. The reality of just *what* constitutes context ranged considerably. Among those adopting the community of practice or co-participation/co-emergence approach, context was a sort of decentered web of relations. Within this relational mesh, there is no discernible learning individual separable from particular actions, cultural norms and practices. But in the majority of articles, particularly evident in the themes of individual acquisition, individual development and individual in community, context was a container in which the individual moves. Most writers ascribed to this container both the social and material environments surrounding the actors named learners, including other people, objects and

technologies. Some also acknowledged the larger cultural discourses and practices circulating in this container, to break free from a purely material view of a spatial container.

Within this reality, the ‘collective’ in learning processes was presented differently on a range of degree and direction of causality. One approach presented the collective as a given environment, a set of conditions, disciplines, practices and objects within which a learning agent interacted. The degree to which this set of conditions was interdependent with or entirely separate from the learning agent varied, but it was not ascribed causality. Few outside the co-participation/co-emergent themes analysed how this environment came into existence, or how its conditions changed through learning interactions. A second presentation ascribed more active pedagogic intervention to the collective, configuring the collective as an agent actively facilitating learning (human mentors, a set of directions, or diffuse affordances and inhibitors of learning embedded within the collective). A third enacted the collective as a causal entity entirely separate from the learner, acting upon the learner through determining ideologies, intentional programs, or organizational structures. A fourth approach most evident in the sensemaking theme reversed the direction of causality, configuring the collective as the outcome of learning, constructed through individuals’ meanings or actions.

What is apparent in these four presentations of the pedagogic function of the collective and the ranging perspectives of context are fundamentally different ontological orientations. Those inhabiting a realist world (which appear evident, albeit to different degrees of reflexivity, in the themes of individual acquisition, levels of learning, network utility, and co-participation/co-emergent) assume that the real existence of objects, activities, people and associated occurrences of learning should not be confused with human perceptions of these things. Those adopting a constructivist orientation (which arguably might include the themes of individual in community and individual development) assume that individuals’ meaning-making in work is the most important focus in questions of learning; objects and activities are separate from but not theorized as part of these constructed meanings. And those working within the logics and languages of social constructionism (evident in certain writings grouped here as themes of communities of practice and sensemaking) assume that all things in work – objects, ideas, subjectivities, practices and the learning processes through which they come into being and become adapted and transformed – are constructed through shared meaning-making, and that there is no ‘real’ beyond these constructions. The argument here is that these are not simply examples of different perspectives, but of different ontologies. Those of us studying workplace learning are often witnessing the enactment of distinct phenomena in fundamentally different realities, that all are referred to as learning. They are messy objects that sometimes overlap and inhabit each other’s presence.

If we accept this argument, what then should we do about it? Typically social science researchers want to link with one another’s findings, to seek some relation among these enactments, or perhaps extend or apply them. One approach to linkage is to assume that we are all investigating different parts of the same thing (the elephant’s tail, ear and trunk) and we just need to feel our way to the big thing. With learning, there is no reason to assume that

there is one phenomenon with different parts, but then, there is no reason not to assume this. In fact, we might try interrupting our impulse to synthesize a seamless continuity, to recognize that different things can co-exist in what appears, or is constructed, to be seamless. Another approach is to somehow patch together these different objects, however ambivalent or even incoherent these patches may be. Practitioners in the workplace do this all the time, as Mol (2002) showed in studying how an object like a disease is performed in different locations of healthcare. In her detailed study of lower-limb atherosclerosis, she followed its enactment in physicians' discussions with the patient, radiology's focus on comparing images, laboratory examinations of artery fragments, and surgical procedures. Mol (2002) concluded that this apparently single object of atherosclerosis actually materialised as a very different thing in each of these spaces. A unique assemblage of routines, language and instruments not only created a different world, but produced a different atherosclerosis. Yet of course, all of these co-exist – they are patched together so that the patient can proceed through diagnoses and treatment. Indeed, the actors involved might assume they are all dealing with the same phenomenon, if perhaps from different standpoints. But Mol argues persuasively, the actual objects of atherosclerosis enacted in their different practices bear little similarity. In analysing Mol's work and its implications, Law (2004: 55, emphasis in original) writes:

We are not dealing with different and possibly flawed perspectives on the *same* object. Rather we are dealing with *different objects produced in different method assemblages*. Those objects overlap, yes. Indeed, that is what all the trouble is about: trying to make sure they overlap in productive ways.

These different worlds of radiology, surgical theatre, community health clinic and so forth need to create passages among their different worlds, and to somehow communicate across these ontologies. This communication is a critical problem. The language we use to discuss a phenomenon, whether it's aché, atherosclerosis or learning, is deeply embedded in the ontology we inhabit. From within the methods, desires and instruments available to us in this ontology, and through our participation in the method assemblages of this ontology, particular phenomena materialise that we come to recognise and name as 'learning'. Our tendency when we communicate with others who talk about 'learning' from within a different but co-existing ontology is to fold these others into our own world. Perhaps we recognise different meanings at play, or different purposes, for the same word. But this is folding, so long as we continue to insist upon one ontology (ours) where different subjective perspectives (theirs) move about. But to what extent can we permit that others are enacting fundamentally different phenomena, *different objects* that are also learning, and that are held together in material assemblages that are more-than-human? As long as we explain away such difference as subjective constructions, or perhaps as rhetorical flexibility, we are sustaining a singular and universal material ontology. Here is where the notion of multiple ontologies becomes tricky. Henare *et al.* point to the obvious issue that it is partly through our subjective construction that we engage our world and try to appreciate others' worlds. It is through our conceptual capacity that we attempt to understand these worlds – using the conceptual categories, theoretical resources and other apparatus emerging from our own ontology.

Ultimately, Henare et al. (2006) worry that it may be impossible to communicate across ontologies without dissolving the other's world. Can we ever break sufficiently from our own subjective perspectives to engage in the 'method assemblages' of utterly different ontologies? Some like Helen Verran (2001) in her study of science and African logic have argued not only that this is possible, but that people like the Yoruba children she taught in Nigeria have impressive capacities to move between ontologies – a phenomenon she calls 'being-ontics'. Researchers like Verran have found socio-material and socio-technical approaches useful in apprehending multiple ontologies. These socio-material approaches decenter human agency and perspectives and try to trace materiality in ways not possible with traditional resources of phenomenology, sociology, anthropology, even pragmatism. These researchers have been working through all sorts of issues that erupt with the possibility of accepting different multiple worlds instead of insisting they are different subjective *constructions* of reality. These issues include a problem that Mol first called 'ontological politics' (Mol 1999); the question of how materiality including consciousness is distributed, the problem of representation and language, and the entanglements of human perspectives in producing material assemblages, including those of researchers (e.g. for writers focused in contexts of learning and education research, see Fenwick and Edwards 2010; Hamilton 2009; Mulcahy 2007, forthcoming; Nespor 1994, 2002; Sørensen 2009).

But even if we can identify multiple ontologies without folding them into our own, what do we do with this multiplicity? Law (2009) suggests four possible approaches. One way is to trace different 'reals', examining the intersections and interactions between these worlds. This approach, suggests Law, can counter tendencies to view different realities as simply a question of perspective. It opens possible alternatives, by highlighting the complexity of objects and underscoring ontological incoherence. A second approach is to explore the different 'goods' embedded in each real. For instance in enactments of workplace learning, questions of politics can exist as goods of worker empowerment and resistance to oppressive conditions in labour studies, of strategies for gaining advantage in management studies, and of negotiations of educative content and delivery in adult education. Comparing these helps surface hidden normativities woven into the very fabric of different worlds, and steps aside from ideological deadlock over ethics and purpose. Law's third methodological option is to explore what he calls collateral realities, performing a sort of ontological archaeology to examine the qualities of different objects in different spatialities. This approach, he suggests, can expose hidden enacted realities, their collusions and their limits. A fourth option is juxtaposition, placing noncoherent objects against one another, then moving them around, to explore the tensions and fluidities that emerge among them in different configurations.

Some writers now are exploring multiple ontologies that are enacted simultaneously as workplace learning (Hitchin and Maksymiw, 2009; Mulcahy 2007). Suchman (2007) shows in her examinations of work activity: How and where is agency produced? she asks. Where is alienation located in everyday interconnected assemblages of objects, hands, eyes, and intentions? How are new realities constructed from sociomaterial intra-actions? A continuing dilemma in any of this work, taking up any of Law's suggested methodological approaches to study workplace learning, is the researcher's implication in

the enactment of the different reals. What is being constructed and represented as multiple ontologies still emanates from a knowledge-making authority. The demands are high in such work for reflexivity, for tracing the researcher's complicity in the webs of action, and for accounts explicitly acknowledging their fragility and their presumptions.

Ultimately, the field of education is inherently purposeful. Debates about purposes for intervening in learning, and about the most desirable directions for learning, are a central dialogue in any educational studies. In adult education, these debates are intimately linked with questions about the common good, and about the kinds of society that support human dignity, well being and fairness for all. This is not to suggest that the job for adult education is to prescribe a normative direction for workplace learning, though some have tried to do so. Amidst the many languages and overlapping territories, old maps of workplace learning are at best blurred or torn. In fluid regions where multiple ontologies are acknowledged, refracted through myriad languages and representations, adult education research could accept a dual challenge. First, as Law (2009) suggests, to focus on making difference rather than making similarity. To accept incoherence and messy objects. Whatever approach is adopted, whether tracing different reals, performing ontological archaeology, comparing different goods, or juxtaposing messy objects, we might consider delineating – and accepting – difference, rather than always seeking relations and seamless continuity.

And second, within these multiple ontologies, adult education might seek to explicitly foreground questions of purpose in workplace learning. To surface hidden normativities, including our own, and to foster debates about purpose. This tacks away from our normative tradition in adult education, which usually drives us to decide the good and critique all else, or prescribe the educational forms and content that will create it. Adult educators and researchers might better invest effort in truly appreciating the multiplicity and undecidable ambivalences enacted in activities we variously call 'workplace learning'. The starting point might be to consider carefully our own purposes in studies and practices linked with workplace learning, as endeavours of education: what we can best contribute, and what we do and don't do well. What is distinct about our world? How are *we* complicit and juxtaposed with the environments we study? How can we appreciate the different other worlds that co-habit workplaces, without either folding them into our own ontology or colonizing them with our own purposes? By no means are such questions meant to advocate abandoning educational purpose. Instead, they interrupt the construction of our purposes, and compel us to closely interrogate the moral imperatives and anterior categories that we may be imposing upon others.

Biesta (2007) writes that to take difference seriously means that we have to give up the idea that we can know otherness before we can adequately engage with it. We differ *in the moment* where we encounter and experience difference – which more often than not means: as it confronts us (Biesta 2007). We could, then, consider our responsibility with respect to adult education whether in the workplace or elsewhere as helping to open encounters with difference. That is, encounters for purposes of expanding people's experiences and possibilities of what it means to be human. Again, this is not about simply experiencing diversity, as though *difference* consists of interesting variations that need not disturb our own world's norms, values and interests. As Bhaba points out, diversity 'doesn't generally recognise the universalist and normative stance

from which it constructs its cultural and political judgements' (1990, p.209). Instead, this is a responsibility to do with expanding our own, and others, opportunities to actively meet difference. Not to simply treat it as another worldview, a curiosity, which can be folded into one's own little settled ontology. But to meet difference on its own terms, as a unique and different world to our own. When we focus on making difference, rather than similarity, we might be better positioned to consider the bridges and juxtapositions that can be fruitfully undertaken with collaborators enacting expertise and objects from other worlds.

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