

Workspaces as ICT-enabled hybrid learning spaces

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Abstract

In this paper we take up the idea that ICT enabled global workspaces may constitute a new kind of learning space. While there is now a good deal of literature concerned with conceptualising companies as 'Learning Organisations', we are concerned here with the ways that individuals conceptualise learning and teaching in their work at local sites of a global corporation. Our study focuses on 3 people who constitute a work group, one located in Melbourne and two located at the Sydney office. The group constructs its role as the mediation of highly technical knowledge across and between local and global networks of communication within and external to the organisation. PaceSetters is a global company concerned with the design, development and support of health technology products. It operates with a network of distribution and marketing facilities spanning all continents. In this work, we focus on the metaphors people use to construct themselves as learners, teachers and knowledge producers, individually and in intersecting communities of practice. We pay specific attention to the integration of ICTs into the established work practices of these new learning spaces and to the ways in which conflicts are played out in new workplace learning contexts.

Introduction

Workplaces are, of course, old learning spaces as well as new ones. Since the industrial revolution people have learned at work, been inducted into the discourses and practices of their trades both formally and informally, and assumed the associated status, benefits and privileges that expertise can sometimes command. So the first thing we want to say about new learning spaces in general is that, in some important respects, they are not unlike old learning spaces. They are shaped in part by various forms of formal discipline training, the on-the-job training that happened, or didn't happen, and the experiences and expectations, developed over many years, of the people who have worked in them (Farrell and Holkner 2004). Increasingly since the Second World War, and particularly over the last 15 years or so however, relying on past and existing knowledge and practice has become difficult and dangerous for companies and individuals. This is partly because new knowledge has been venerated in global, hyper capitalist, markets at the expense of existing knowledge, with companies encouraged to view themselves (or at least talk as if they viewed themselves) as various forms of 'Learning Organizations (Senge 1991)'. These organizations view learning as a (possibly *the*) critical work practice and specialist, innovative knowledge as the ultimate product. It is also partly because the physical

(geographical and temporal) contexts in which work is conducted have changed radically, work practices are spread across a number of work sites, and ‘texts have become the contexts within which work is conducted’ ((Farrell forthcoming)). The integration of ICTs into existing workplaces and work practices has created new possibilities for learning spaces, but also new challenges as workers negotiate relationships and texts mediated through technologies which stand across predictable boundaries of time and place. Similarly, the collection and maintenance of digital materials has become critical practice for individual and organisations. Knowledge (and data and information) is a problem as well as a solution in globally distributed workspaces.

In this paper we want to talk about PaceSetters and some of the people who work there. We focus on how they talk about knowledge, how they see themselves as learners and teachers and knowledge producers, and how they struggle to create a ‘new learning space’ using their own (incommensurate) histories, experiences, beliefs, understandings - and ICTs.

Background

PaceSetters is a global company concerned with the design, development and support of health technology products. It has presences in North America, Europe, Asia (including Japan), Australia and Central and South America. Operating in a highly competitive market which relies on rapidly evolving technological innovation, it is, like all such companies, especially vulnerable to breaches of compliance and regulatory procedures applying in the countries in which it does business. Consequently, control of work practice across the global web of operation, while allowing for the flexibility and hyper-responsiveness the industry demands, is a major management challenge. The Australian operation is involved in clinical trials and collaborative health education, and, of course, with the marketing and sale of appliances in Australia. The company has a head office in an Eastern state capital city and smaller offices in a number of other cities. The company is organised into traditional departments, with managers and staff who are dispersed around Australia. From our point of view, PaceSetters is a network of people, technologies and practices stretched across countries and regions; joined together by communications networks. In this sense it is a *workspace* as well as a collection of physical *workplaces*. The project¹ we refer to here focused on a group of marketing and sales people who, together, create and sustain a significant part of this communication network. Our focus in this paper is on three of those people who together comprise the (troubled) Australian Marketing Team. We focus on the tension between

knowing as an active, lived experience [and] *knowledge* as a commodity within firms and markets (Scarborough 1999),

In terms of the technologies we ask more specifically, “In what ways can ICTs be effective parts of communication environments which allow knowledge to be ‘an active lived experience’, and why is it that they sometimes are not?”

Knowledge and Communication in the Australian Marketing team

Fundamentally, the roles of workers in this organisation might be considered to be the mediation of highly technical knowledge across and between varied networks of people who are spatially and temporally dispersed. Knowledge (both formal standardised knowledge, and the informal improvisation associated with on the spot problem solving) is overwhelmingly textually mediated through ICT-enabled communication.

Leigh is a senior manager in Pacesetters, responsible for the Australian marketing group and two other major business groups within the organisation. It is notable that the marketing team itself is located at head office, while Leigh is located at a large branch office. Leigh prefers to work at the branch office for personal reasons, but recognises that she is then forced to perform her role via a range of communication methods. Email and telephone are provided by the organisation for the day to day management of her teams, and a sophisticated video conference system is employed for her to join senior management meetings, which are always located at head office.

Alan, the marketing manager is located at the Australia head office, and is supported by Ian. Together they are responsible for the distribution of marketing materials that emanate from Pacesetters offices in various parts of the world, but principally from the United States. Given the broad range of functions that marketing provides, Alan describes his work as gaining and distributing knowledge.

...in conjunction with sales and other people throughout the organisation ... and taking knowledge from outside we are trying to get a strategy to go forward to increase our sales, is one part of it, the other part is ... develop strategies and attack that side of things of how selling strategies will be implemented in the field...[5]

Alan also describes two distinct aspects of organisational knowledge that fall within his area, knowledge about products, the ways that they work, are maintained and installed, and knowledge about the business of selling the products. In this work he understands communication and methods of communication to be critical to his effectiveness. In describing his work with Ian, he emphasises, "...I am very strict with him on communication..." and "...I will come down hard on him for specially written language or things which are ambiguous or just not well written...". [20] Alan is clear that written texts matter, and understands the task to be the transmission of clear, unambiguous and neutral knowledge according to established rhetorical conventions.

Working identities*In many ways, the interviews at different parts of the organisation revealed a consistent language of workers seeing themselves as both educators and as learners.*

Ian considers his role as "continually giving more information". Ian and Alan both recognise the tension that they create though seeing their own roles as providers of information, and yet frustrated that the sales team and technical workers do not give them

the “feedback” that would give them confidence that their work was useful. Ian and Alan receive marketing information in the form of clinical trials reports and publicity attached to emails. Marketing see part of their role as “weeding” and distributing the best from large PDFs from a large and relentless traffic of email that they receive. They recognise that the information they receive is overwhelming, especially to people in the field, and they understand that they are filtering information so that it can be used effectively.

Alan and Ian talk about knowledge as a ‘thing’, a static commodity which they get from external sources (the parent company marketing material or published clinical trials for the most part), provide to sales staff and which can be given back to them as ‘feedback’. The relationship they conceptualise here is linear and single dimensional, in so far as there is a relationship between themselves and the sales staff it is confined to the giving and receiving of information. When they talk about communicating they limit their aims to making language ‘clear’ and ‘unambiguous’, as if language can be thought of without reference to the contexts in which it is received. They view silence as absence of communication, not as potentially useful communication of an attitude or value.

Part of the problem for Alan and Ian is that the way they perceive their roles as knowledge producers contrasts with the way Leigh views knowledge production and dissemination. Leigh constructs her working identity as relationship building, and knowledge as collaboratively constructed problem solving

...I can look at things and go on and... then I often find solution just through dialogue very quickly... [421]

Leigh says she ‘look[s] more into relationships, rather than focussing too much on analysis’ [314-315] and identifies ‘her people’ as her major concern, ‘my responsibility is to them ... their development’ [40ff]. She is critical of people who think they can ‘roll out communication’ as if it were a product that had been developed, offering the view that ‘they’ are ‘atrocious at it [communication]’ and judging the ‘cascade of communication’ to be an assault on her staff, an avalanche of information that must be avoided for safety’s sake[718ff]. Leigh is explicit about using her phone to maintain personal relationships with staff in the Australian Head Office

I make an incredibly -... concerted effort... to try and understand the local need so I will spend what I call down-time if I don’t have to call people back... actually making the phone call to... find out well... how did that go or what’s happening in your house... [376]

Her use of ICTs to maintain durable relationships is sophisticated [757 carefully crafting intersecting channels of communication for specific purposes]. She identifies competing contexts as a barrier to effective communication, commenting that ‘some cultures can be quite extreme [773-774] and dismissing training in communication as merely instrumental ‘they get training , is sort of ‘how to do email’ [779]. While most of Leigh’s staff are appreciative of her efforts to keep relationships well-maintained. and are fiercely loyal, Alan finds her behaviour inexplicable:

...she's pretty much on the phone all day... it's frightening.. She's really on the phone more than is healthy and she's got a hands free mobile as well. [204]

However, while Alan and Ian have so far not relinquished their view of knowledge as a commodity to embrace Leigh's focus on 'active knowing', they are aware (and not without cause), that there is something missing from their attempts to disseminate knowledge, and that it is the critical something:

Ian says:

... it's terrifying to think that you spend a lot of time developing the message, making sure it's got the marketing spin on it and then they get it and it goes on the top of their pile and it just gets tall and doesn't go any further...[239]

Ian and Alan are trying to prepare a message as if it is perfectible, a professionally honed message that can simply be delivered to the customer and will do its job. From Ian and Alan's point of view, the sales staff are not active collaborators in the production of this knowledge, they are merely a (more or less ineffective) conduit of a knowledge product.

Communities Of Practice

The standardisation of knowledge and practice across global webs of production is an established mechanism for asserting centralised control and establishing a corporate 'culture', and there is a theme of standardisation that pervades PaceSetters. Procedures and protocols are in place for the provision of specific communication technology hardware and software, established ways of using them, and access to databases and an intranet. In practice however, workers develop their own smaller local communities and protocols which attend to local needs and conditions and which allow them some autonomy at work.

Workers in the Australian offices of Pacesetters are acutely aware of the dominance of the much larger U.S. and European offices. Ian's example of raising Australia's needs to the U.S. offices is described in terms of the tiny market, even the paper doesn't fit:

...a really big issue in Australia that we can't print to A4 which fits nicely in the patients' folder, whereas in the U.S. it's not even in their scope, they don't get any complaints... most of the time we got to run with the U.S. or Europe...[69]

While the people in the marketing department in particular are sensitive to their disconnected status in making changes to organisational marketing procedures, they take great care in establishing personal contacts with their overseas counterparts. They explicitly facilitate future communication and problem solving which may need to take place by email. Time differences preclude easy telephone contacts, but annual or biannual visits to the United States and European offices, with face to face meetings, are strategic.

In their day to day negotiations, Pacesetters workers are experienced and strategic in their use of communications technologies and the many particular ways that they impact upon their working relationships. Ian observes:

...someone who you've met face to face and spend some time with they tend to find it harder to ignore your emails. [98]

The complex human and technologically hybridised networks which develop in organisations like Pacesetters define their communities of practice (Wenger 1999; Gee 2000).

New Learning Spaces

These spaces challenge workers' understandings of colleagues and their roles and the value of written spoken and electronic texts of different kinds.

Leigh speaks on several occasions about the ways that she works with her colleagues. Because she is located interstate, she participates in senior management meetings via telephone conference, and more recently by videoconference. The videoconference is highly sophisticated, from a technical point of view, enabling multiple moveable camera views, and very large screens. The Head Office conference room has been set up with the screen almost in place of chairs around the table. The system has been built by technical staff in response to a small brief by senior management. Leigh, who is the only regular remote videoconference participant, complains about how her role as a manager is compromised through this technology while she is never consulted about its use:

...they'll all sit down they'll have their laptops they'll be looking and they'll say I'll send it through to you... so they might send me through a presentation that is saved through me which takes fifteen minutes to open...[165]

While PaceSetters make the technology available, and teaches people the technical operating instructions, they do not teach, or even explicitly acknowledge, the social skills required by all participants, and especially the chair of the meeting, to change the way they communicate if someone is participating by video. They do not teach, or even seem to understand, that information and communication technologies are social practices that must be integrated into existing physical and temporal work environments and into the existing work practices and power structures of local sites. Implicit is the view that Leigh is being accommodated by being allowed to work at the branch office and that the onus is on the person requesting the video link to make the communication work for them, or take the consequences. For someone in Leigh's position the focus of the meeting becomes a simple matter of getting heard, the business of the meeting has to become secondary to simply being audible.

Pacesetters recognises the need for public information about their products, although they generally expect to communicate with health professionals and let them talk to patients. Alan notes the trend for public to seek out information.

...how can I get people to my website first... I suppose if they've got thirty-something kids who are net tech savvy I mean Australia has a very high early doctor seeing when it comes to all these scenes and they will look it up for mum and dad... but... it doesn't answer everything

The process of identifying and customising information for the wide range of interested parties is left to field workers and health professionals who have recommended a Pacesetters product. Alan regards marketing relationship with patients as mediated through educators. Pacesetters supports and distributes information indirectly to patients, and these are developed by medial and education staff outside the organisation. Alan notes,

...we've gone through it even if I didn't approve of it if those customers thought this was the best information...[135]

Texts and Technologies

In this research we were particularly interested in the texts used by the organisation and the ways in which the workers understood and managed them. The PaceSetters workspace is absolutely reliant on ICT-enabled textual practice – the making and using of written and spoken texts. People use texts to make and use knowledge, to establish and maintain relationships and to produce and reproduce, subvert and challenge, the hierarchical structure of the organisation.

Particular care has been taken by management to implement powerful and global communication via computers and telephony. In fact we have observed that far greater importance has been placed on synchronous – real time or near real time technologies than others. Field workers use mobile phones, SMS, pocket pagers, handheld and laptop computers. All field workers use all of these technologies.

Office based workers like Ian and Alan rely much more upon email and telephone for day to day activities. Much of their work revolves around the management of large texts and data sets. Given this fact, and given their frustration at the lack of use people make of the knowledge stores, it surprised us that virtually no attention seemed to have been paid to the ways that data and information might be stored and retrieved. In an otherwise standardised environment, our questions about storage and retrieval of information revealed uncoordinated and individualistic methods of archiving. Workers were aware of the lack of systematised knowledge bases, apart from one which was managed and accessed by an office data manager. Ian's apologetic language was notable on this topic.

...well electronic copies, easy I save them in a reserved area in my inbox, sorry in My Documents, usually send my boss his copy as well and sorry I also keep a day file, if anyone from the field asks for a hard copy...[190]

It became evident in our interviews with many staff at Pacesetters that primary value is given to information obtained directly from another worker in real time. Workers, and marketing staff in particular recognised the quality and enormous quantity of information texts, and also of the particular experiences or wisdom of other workers; particularly technical staff. Even so, the task of seeking information for oneself even when it might be easy to find in some pile of papers or laptop computer's disks was apparently dismissed. It would appear that this particular view of knowledge is problematic. Alan and Ian treat knowledge as a textualised commodity. From (Blacker 1995) perspective, knowledge is only knowledge if it is encoded. Documents that have been identified and weeded, need only to be distributed to become useful. Their frustrations at workers not using the materials was seen as the other person's fault, in that they did not recognise the value of the material, or even that they would not provide "feedback" so that better materials could be better delivered. Field workers describe themselves as "too busy" to wade through the overwhelming amounts of marketing material, but they readily consult each other by telephone for advice and recommendations. This is hardly surprising, given that the missing dimension in knowledge construction at Pacesetters sometimes appears to be the particular community or social context that allows the individual to contextualise and structure information texts into usable knowledge.

The shift for people in this organisation to value databases of texts in any form appears to lie in a fundamental move to understanding knowledge as socially produced and used. Rather than ignoring the social context, or trying to render it neutral in certain forms of text, the social contexts in which the available data is embedded needs to be recognised and legitimised. While there are commercial software packages that could meet Pacesetters needs in data management, the adoption of one of these implies much more than deployment and training, it would require reconceptualising what constitutes knowledge and knowledge work

Learning at PaceSetters

For Ian and Alan, images of learning are about surveillance and punishment. In seeking the "feedback" that they feel a desperate need for, they suggest going in the cars of the field workers to see how they work, checking to see where the marketing materials are being used, and opportunities for marketing to deliver its knowledge. Ian and Alan do not see knowledge as collaboratively constructed (although the fieldworkers do), they consider that documents, sometimes with application notes, are simply distributed, and the difficult part of putting them to use is the responsibility of the recipients. This is of course consistent with the view that ICTs provide organised access to information and that people are expected to locate and make sense of them when they need to. Other interviews with field workers at Pacesetters identified situations where marketing materials had been used to create training and client education documents but field workers invariably conferred with each other about these developments and readily shared the finished products. The marketing group were actually unaware of this work. Our view is that knowing the social contexts, field workers were able to reformulate the materials into local knowledge, but they did not consider that materials were particularly helpful.

Friction, conflict and the technology of new learning spaces

Interviews with Pacesetters workers identified a number of methods for dealing with the impacts of communication technologies on working relationships. Field workers' preferences for telephone contact with each other and with clients included message codes that could be sent via SMS or voicemail so that a telephone contact could be organised. Office workers, and marketing in particular, frequently spoke about the importance of face-to-face resolution of problems, although all issues with the larger offices in U.S. and Europe are dealt with by email unless urgent. Resolution of urgent problems with these offices were by telephone calls made early in the morning.

Considering the large number of communication technologies made available to Pacesetters workers, it was observed that many had developed strategies to prioritise particular communications to specific "channels". Alan and Ian made a practice of employing every available technology system in sending their (written text) messages. Field workers have agreements with each other that they would not use shared diaries or email for work in the field, but maintained frequent communication and support through mobile telephones. Advanced facilities for diverting telephone messages to SMS, for example, were regarded as "annoying" and interfering with real work. For Leigh, Alan and Ian, these communication technologies were irrelevant since they always preferred meetings and telephones. Even so, they made extensive use of shared diaries and voicemail, but only amongst themselves.

A range of temporal issues affect the resolution of problems, including the timeliness of responses, implied urgency in the channels that deliver communication, size and time scope of the communications to name a few. For Leigh, urgent matters are expected to appear in voicemail.

... you know sometimes human resources issues happen where you know something awkward may have happened to somebody... I'd typically be checking my voicemail every hour and a half or so. [410]

Leigh's disposition is to manage relationships in such a way that the technologies are consciously employed rather than adopted without question.

...I am pretty much a problem solver through discussion... I can look at things and .. then often I find a solution just through dialogue very quickly often so from that aspect that's why it's my preference ... but you don't often email if it's a big question.

This disposition makes her highly critical of the videoconferencing system that forces her to strain her voice, and to test and adopt strategies for overcoming the disadvantages of being temporally and geographically displaced and controlled.

Conclusion

In new learning spaces like PaceSetters, knowledge is *the* commodity of the business and knowing a critical practice animated in 'active lived experience'. The pace and scope of

change make it tempting, but dangerous, to concentrate on one to the exclusion of the other. It seems, however, that Leigh is focussing exclusively on the collaborative construction of knowledge – on knowing – building and maintaining relationships which allow the construction of knowledge (problem solving) ‘on the run’. Alan and Ian, on the other hand, focus on refining the message (the commodity), on creating a good text without asking ‘good for what?’ or indeed paying attention to the conditions of reception that are faced by workers who are expected to make use of marketing’s work. Leigh, refers to “transparency” [123, 220, 251, 270...] in the workplace and as we have noted, constructs herself as a problem solver who uses relationship building as a fundamental strategy. She doesn’t ignore the technological and other infrastructures provided by the organisation, but uses them in very different ways.

In some important ways the Marketing Department at PaceSetters can be understood as a globally distributed New Learning Space where the production and diffusion of knowledge across a global field is critical to the success of the company. People in the department talk about learning and knowledge, see their work as being ‘knowledge work’, and see ICTs as pivotal in learning and teaching. The unacknowledged tension between knowledge as a (textual) commodity and knowing as an ‘active lived experience’ is palpable in the team, creating unproductive tension and bad marketing results. Ian’s fear that nobody uses the marketing materials may be very near reality. In some respects too, the marketing department represents the least positive aspects of the workplace as an Old Learning Space. Fundamentally traditional ways of using text and communication are reinforced through senior people (like Alan) teaching junior people (like Ian) without taking account of the demands of the globally distributed workspace, to very conservative effect. While new technologies are enthusiastically utilised, they are utilised within traditional communication paradigms. Leigh’s experience with videoconferencing left her ‘sounding like a fishwife’ –shrill and humourless. This made her feel powerless at meetings, a woman with no voice in the executive structure. New Learning Spaces do not imply that new learning will always take place.

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