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## **Narrative and learning with Web 2.0 technologies: towards a research agenda**

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### **Abstract**

This paper investigates the impact of Web 2.0 technologies on the ways learning can be conceived of as a narrative process within contemporary contexts, using blogs as an illustrative example. It is premised on the concept of narrative as a way in which individuals re-present and organize experience in order to learn from it and make it sharable with others within social contexts. The first part of the paper offers a theoretical analysis of the role of narrative in the social construction of knowledge by the ways it enables users of Web 2.0 technologies to participate meaningfully in the exchange of experiences and ideas. The second part of the paper offers a 'situated' analysis of the narrative practices engaged with by users of blogs. A 'narrative trail' is used to provide a contextualized instance of the narrative practices which are involved. The paper concludes by examining the research issues which are raised and suggests a research agenda which is needed to explore Web 2.0 technologies as social utilities affecting knowledge production, in which the adaptation of narrative theory is a central feature.

### **Key words**

Narrative, learning, Web 2.0, blogs, knowledge

### **Introduction**

What is narrative and what is its role and potential for learning within Web 2.0 contexts? This paper takes as its premise that narrative constitutes an important dimension of human learning. Cortazzi (2001) has argued that for the learner, engaging with narratives is a way to "organise and interpret experience and communicate it memorably in social contexts. In several ways, narratives make sense and give coherence to our personal and professional lives" (p. 1). By engaging with the world through processes, individuals re-present and organize experience as a way of understanding it (Bruner, 1985). Narrative, according to Bruner, is a 'mode of thought' – that is, a way of knowing that is based on our ordering of experience or 'filtering' of the world as we encounter it. We suggest that within Web 2.0 learning contexts, we need to understand more about how individuals participate in narrative processes in order to engage meaningfully with a variety of content. This is an area where research is needed which helps explain how a user of a social utility can learn from the 'narrativity' (Bal, 1985) of the encounter.

### **Narrative as a conceptual tool**

With Walker (2006, p. 104) and Falk and Dierking (2000, pp. 60-61), we see learning as "an adaptation to make sense of our physical and socio-cultural context" and as a "continually

refining capacity ... to intelligently navigate an ever changing social, cultural, and physical world.” Narrative, or ‘storying’, is viewed as offering an organisational frame for new experiences and knowledge creation and building. Indeed, Falk and Dierking (2000, p. 48-49) note greater effectiveness in mental organisation of information when recounted in the form of a story; and Mandler (1984) posits that narrative provides an organizing structure for new experiences and knowledge as well as for remembering them. We use the term ‘storying’ therefore to signal that we see narrative as a system of meaning-making. For Falk and Dierking (2000, p. 136) this involves discourse practices in the sense that individuals participate in dialogue - an iterative process of meaning-making which takes place between an individual and her environment. A related use of the term is Bal’s (1985) notion of ‘narrativity’ which describes the relationship between ‘an object and the internal representation it provokes’ (Walker, 2006, p. 105).

Doyle and Carter (2003, p. 130) argue that humans have “a universal predisposition to ‘story’ their experience, that is to impose a narrative interpretation on information and experience” and that stories capture “nuance, indeterminacy and interconnectedness in ways that defy formalistic expression and expand the possibilities for interpretation and understanding”:

We as human beings tend ... to interpret our lives by weaving comprehensive frameworks in which the incidents, people, actions, emotions, ideas, and settings of our experience are brought together, inter-related, and situated. In this process, we sort through our experiences, dividing the pertinent from the extraneous and filling in the gaps as we construct sensible renderings or accounts of our personal histories. (Doyle and Carter, 2003, p. 130)

In short, narrative may be viewed as a conceptual tool for structuring, organising and reflecting on information with a view to facilitating knowledge construction and building processes and to make it more memorable and learnable. Whilst this is broadly in line with well-established narrative theories of learning (Bruner’s ‘mode of thought’ 1985; Polkinghorne’s focus on narrative *form* and *function*, 1988), what is necessary in contemporary contexts is to understand the impact of technologies on the processes which are involved. We need to know more about how this ‘weaving’ and ‘sorting’ of Doyle and Carter is conducted within contemporary learning practices. New ways of conceptualising are needed, of how learners engage with emerging narrative practices. One key ‘conceptualisation’ which has potential to begin such an exploration is the ‘narrative learning trail’ (Walker, 2006).

### **Narrative learning trails as conceptual frames in social networking contexts**

Walker (2006, pp. 107-111) introduces the notion of narrative learning trails, by which the individual is seen as engaging with a complex interactive process when learning within a particular environment. It involves the appropriation of a range of resources available to the individual - physical, psychological, social and emotional. These inter-relate to inform the ‘chain of events’ which is unique to each individual’s learning experience:

A narrative trail is not merely a linear path but 'a chain of events organized into a coherent schema from a personal perspective (i.e. that of the narrator). And a narrator's perspective brings to light intentions, interpretations, and evaluations related to these events.' (Walker, 2006, p. 109).

Walker's ideas develop in the context of museum-based learning, a context which draws attention to the learning potentials of the relationship between conceptual spaces and movement around physical spaces. The learner brings together elements of physical and intellectual contexts (schema) to 'make sense' out of phenomena - this is the essence of a 'narrative trail' in museum-based learning. We suggest however, that this concept has wider applicability to understanding how individuals engage with social networking tools in Web 2.0 contexts, in which they must also bring together external social phenomena which are framed and presented in particular ways (e.g. within blogs, slideshows, audio-files etc.) with individual pre-existing knowledge in order to make sense out of the experience. Especially important is Walker's focus on the agentive role of the narrator as a trail-maker, which focuses on what he calls the 'narrator's perspective' in the learning process. Walker's privileging of the 'narrator's perspective' in making sense of learning experiences in altered contexts of time and space is essentially agentive. Agency is conceptualised within this context as a user's capacity to make unique choices, and is based on the learning potential which is contained within the creative tensions between users' interpretations and the intentions of those who post content. Such a learning potential lies in the possibilities of users engaging in an 'educational transaction' (Dewey, 1938) between personal knowledge and experience and socially agreed meanings – which is essential to knowledge construction.

### **Blogs - some issues for narrative as a tool for knowledge construction**

Blogs are particularly relevant for examining narrative processes at work within the social utilities offered by Web 2.0. We suggest that agentive processes of structuring and meaning-making are necessary to participate in an inherently unstructured and ill-defined information web that is the 'blogosphere'. The blogosphere, with its importance in facilitating online communication, arguably enjoys increasing importance in informal, as well as formal, learning contexts. We explore the demands made on the user, whose perspective is core to constructing meaning within this context. Despite syndication tools, blog rolling (recommendations of sites appearing in the sidebar of blogs), and searchability supported by tagging, engagement demands high levels of 'weaving' and 'sorting' – the technologies only become learning tools by acts of meaning-making brought about by the users. Whilst tools like blogs and wikis make possible the 'educational transaction' by collaborative sharing and construction of knowledge across time and space, at the same time they potentially create barriers around lack of linearity of information presentation, distributed storage across a myriad of locations and resource banks, lack of indexing and linking as well as of systematicity of classification of information. Resources and information are generally much more ephemeral and less structured, available in non-traditional formats only and presented in adherence to new conventions which pose challenges in relation to their reliability and validity. There is a lack of systematicity by which blogs are indexed and come to readers' attention. One key issue for research, therefore, is that around the potential of

the concept of a 'narrative trail' as a means by which users create coherence in Web 2.0 contexts which are ephemeral and distributed. The trail provides a way for users to achieve meaningful encounters with blogs by bringing a systematicity to the wealth of possible choices available. Reading a blog frequently involves following links to further related digital content of a variety of forms. We conceive of the trail as composed of a number of narrative 'nodes', or catalytic moments around clusters of choices for the reader. The nodes conduct a cohesive function, and create the network of engagements with content by which the reader experiences the blog. The narrative trail also provides a way of understanding the conceptual work that goes on, in the meaning-making which takes place around these choices, by which content 'makes sense' according to users' pre-existing schema.

White (2006) distinguishes between topic-centric, one-blog-centric, and bounded blog communities. One notable characteristic of blogs relates to authorship which revolves largely around blog owners, with some blogs allowing for comments from (registered) users. As such, they tend to have monologic or broadcast qualities, consisting of more or less unrelated, if broadly thematically bound, individual postings. In these cases, the potential of blogs to act as dialogic tools for learning is limited. The need for content to be an object for shared reflection, perspective-taking and discussion is paramount within a dialogic view of learning, summarised by Ravenscroft, Wegerif and Hartley (2007):

the dialogic approach to learning emphasizes that the main mechanism for learning is taking the perspective of another in a dialogue. It also suggests that induction into dialogue is a way of teaching general thinking skills such as creativity and learning to learn (Wegerif, 2005). With this approach dialogue is an end to be valued in itself as perhaps the most important goal of education (p. 44).

Whilst blogs can include iterative and transactional aspects (by the extent to which individual postings, implicitly or explicitly, relate to others, for example through hyperlinking and commenting) blogging is a highly heterogeneous practice, and its value as a potentially dialogic one in Wegerif's terms is yet to be understood. Communities are no longer defined by technological platforms and, judging by bloggers' blog-rolls, much more loosely defined: whilst certain blogs and sites appear time and time again in particular topic-based communities and communities of practice, there is also a considerable divergence in the range of blogs linked to, and by implication, regularly read by, individual bloggers. At present, we would argue, the criteria that determine what makes blogs iterative, and what doesn't, as well as what makes individual postings productive as 'teaching texts' (see Pachler and Daly, 2006a and 2006b), their inter- and intratextuality, is little understood. Research is needed into the ways in which users visualise and realise relationships between individual postings and different blogs into meaningful learning trails which may have dialogic potentials. These are all manifestations of narrative as practice, by which learners engage with Web 2.0 technologies and make sense of their world – including how they appropriate the technologies within meaning-making processes. Related to that are questions around social dimensions attendant to what is attended to and framed, by whom and for what purpose, i.e. how power is manifest and how author and readership are shared, who or what acts as filters, barriers or amplifiers (see Kress and Pachler, 2007, p. 18 and White, 2006).

In a definition of blogging given by bloggers, it is described as an inter-dependent practice, involving both the personal and the public, on a scale which can be viewed as either close-to-home (e.g. by the blocking of a search engine so it can't be found) or global, but which is in the vast majority of cases the latter: "A blog is a personal diary; a daily pulpit; a collaborative space; a political soapbox; a breaking-news outlet; a collection of links; your own private thoughts; memos to the world" (Blogger.com, 2007). Making sense of this across blogs makes considerable demands of the creative and semiotic work to be done by the user, where linked content requires the serial interpretation of images, language and content format which can have little contextual continuity. The content of each blog is a unique configuration of the resources available, organized with varying degrees of attention to 'readability' and 'accessibility' by the blogger. The notion of 'sharing' these outputs is subject to huge variation. Is 'sharing' just 'making available'? Or offering a collaborative experience which changes all parties' perceptions of the content being blogged? A brief survey of blogs focused on the blogging/m-learning field<sup>1</sup> raises questions about the dialogic/monologic nature of the blogging experience, and the challenges to sense-making. Many blogs rest on an assumption that the reader already knows why he or she is visiting the blog. That is, they assume that a contextual coherence in the reader's experience is there from the start, based on a set of expectations and shared interests which have brought the reader to the blog in the first place. Blog titles can be elusive – not necessarily excluding, but based on the premise that the reader does not need signposts to what they are reading about. It is also indicative of the fact that it may not be possible to capture where the content will take the reader anyway. The impossibility of capturing and anticipating the participatory experience is implied in some blog titles dealing with Web 2.0 technologies, such as 'Andy's Black Hole' 'Ubiquitous Thoughts' and 'Snurblog'. The assumption is that the reader has been led there by being part of a culture which engages in Web 2.0 technologies. As a new reader, part of the experience of constructing a meaningful narrative out of the reading is based on is working out 'where do I fit in?' and 'should I be here?' Blogs can require a considerable degree of monologic engagement on the part of the reader, at the same time as involving them in a social space for engaging with content. It is the reader's job to 'make sense' of the content and its organization. The 'personal diary' dimension of the blog makes this a venture into another person's narrative construct for the reader, and requires them to engage in something which has been uniquely designed to organize another person's experiences and understandings, and often to make them understandable to a community of 'regular users' (see Figure 1 below).

Insert Figure 1 Blog entry from 'Andy's Black Hole' here

The blog entry makes the reader immediately aware that he or she is entering a particular culture, with tacit agreements in place about how knowledge is shared and made meaningful among users. It contains a large number of hyperlinks which are important to both the uninitiated, to supplement understanding of the topic, and to the experienced, to provide the detail that concerns them. The large number of links involved in negotiating the first two sentences disrupts any expectation of rhetorical wholeness. The reader can:

1. ignore the links, and attempt to gain an immediate sense of the culture of the blog, at the risk of incomplete understanding of its content

2. click on all of the links, and become more informed straight away, but risk fragmentation of the initial thread by engaging with a large amount of complex information
3. click on one or two links, to find if they can be used in an indicative way, giving just enough information to make sense of the content at this early stage.

The assumptions here are that sense-making is dependent on:

1. a knowledgeable reader, who is familiar with the content of interest and can make these decisions so that they support, rather than hinder, understanding
2. if not knowledgeable, then an experienced reader, who makes autonomous decisions based on experience of other blogs, to decide how to engage with the unfamiliar.

Either way, demands are made on the reader to create a narrative trail of use. The user must decide – what do I want to transact here? What kind of relationship do I want to have with this information and with this blogger? The ‘weaving’ and ‘sorting’ of Doyle and Carter (2003) extends beyond a content-focused practice. The act of sense-making is far from limited to engaging with the hypertextual content as an entity in itself. The reader is engaged with a much wider narrative of ‘being’, by which he/she is positioned as actor in a social context with other social actors, and must work out what the experience will be like and how it is conducted. A personal narrative of being is being constructed through the interaction between the user and the blog’s various utilities. The narrative may confer varying degrees of agency upon the user, ranging from a high degree of control of sense-making and participatory practice, to a high degree of uncertainty and exclusion.

A trail through the m-learning blogs reveals several common features, despite the varying formats and ‘readability’ of each (accessibility of blogs defined by reading difficulty in terms of language complexity, Weller, 2007). Despite the lateral linking of content via hyperlinks, the selection of links is essentially a linear process. In most cases there is a ‘working through’ of a considerable degree of conceptual and contextual content to be done, to be sure that the reader has found all that is relevant. The amount of choice means that there is concern about overlooking something important which is lodged in a series of connected items. The user is in a constant process of meaning-making involving judgements of relevance, interest, importance and readability. Sidebars containing menus and blogrolls can help to provide a map for the process. Items are sometimes numbered to show blogging threads related to the same theme, and use of font can vary to highlight a potential pathway. Links such as ‘read more’ and ‘comments’ give some blogs a narrative ‘macro-structure’ (a recognisable set of organizing frameworks or *form*) within an overall coherence of use. But all of this is inconsistent between blogs. Most blogs, even where such signposting exists and provides a commonly understood macro-structure, make considerable demands on the reader to organize their own experience. They raise the question – who is learning what here? What has the author gained from the narrative work involved in sifting, constructing and organizing the material? What does the reader gain from experiencing it in this form? In many ways, it takes a devoted reader to engage with blogs as a learning practice – it takes persistence to explore a blog. A sidebar in these blogs typically offers help by allowing links to be ‘Filtered by category’, allowing the reader to view

all the entries thematically. Some mean something within existing schema, or frames of understanding – ‘Australia’ and ‘Channel 4’ for example. But ‘hhl2007’ as a menu choice establishes again the sense of insider/outsider user identities. A link to ‘flickr’ as a category requires the reader to submit user details and make a particular type of commitment to the encounter. The user must decide – what do I want to transact here? What kind of relationship do I want to have with this information? A personal narrative of engagement emerges, one of use, which involves the individual in context-making processes which affect the role of user as learner, and affect perspectives on knowledge itself. The learning encounter becomes redefined as one involving serendipity, with implications for knowledge-making of the ‘road not taken’, which can be either enfranchising or disorientating, or both. It demands a revised view of knowledge within these conditions, one which is explicitly linked to altered roles for the user. This is entirely consistent with conceptions of reading and meaning-making within contemporary conditions. Hermeneutical theories of meaning-making have been, broadly speaking, characterised by a shift in the location of meaning within a text from the author or the linguistic construction of the text itself, to the reader as the prime, if not only, source of meaning. The significant shift in hermeneutical theories of text in the latter part of the twentieth century was towards what can be broadly termed ‘reader-response theory’, by which the reader makes meaning according to a variety of contested perspectives (Freund, 1987). Freund explains the considerable diversity within the field:

Agreement about the lie of the land is rare...The concept of ‘audience’ or ‘reader’ may be anything from an idealised construct to an actual historical idiosyncratic personage...Personifications – the mock reader (Gibson), the implied reader (Iser)...the ideal reader (Culler)...the informed reader or the interpretive community (Fish) – proliferate...(ibid. p. 7).

What is relevant to this paper, and is the common theoretical argument within contemporary textual hermeneutics, is that the meaning of a text cannot stand independent of the reader. At the core of disputed hermeneutical approaches, is the question of whether the reader can entirely make the meaning of a text, and what relationship this has to a view of reality. The core difficulty is of recognising the relationship between an individual’s interpretation, and the socio-cultural context in which the reader exists and is therefore able to think. The interpretation is not created by a sublime connection between a reader/user and the text: “Most of us recognise that no reading is innocent or without presuppositions...all...responses are deeply imbricated with the kind of social and historical individuals we are” (Eagleton, 1983, p. 89).

It is the ‘reader’ here who is accorded the prime role in making meaning, and thus takes an agentive role in the construction of knowledge. This is not confined however, to readers of static texts. It extends to other forms of socio-communicative practices where individuals are involved in constructing meanings together which make sense of their experiences: “there is always a great deal more at stake...such theories are more or less definite readings of social reality” (Eagleton, 1983, pp. 89-90). We believe this has high applicability to exploring how readers engage in sense-making in contemporary web-based contexts.

## A learning trail

In this section, we undertake a 'narrative trail' (Walker, 2006). We explore the learning issues raised by how the user interacts with the environment of a blog, and explore this interaction as an ongoing iterative process between the user and the blog, involving continuing decision-making based on choices about how to engage with blog content. Edublogs, as might be expected because of their interest in learning and teaching with technologies, have a distinctly dialogic relationship with the reader. One such blog, The Ed Techie ([http://nogoodreason.typepad.co.uk/no\\_good\\_reason/2007/11/blogs-easier-to.html](http://nogoodreason.typepad.co.uk/no_good_reason/2007/11/blogs-easier-to.html)), is used here to illustrate the development of a learning trail. Its key words, 'Educational Technology, web 2.0, VLEs, open content, e-learning, plus some personal stuff thrown in', indicate that the blogger's personal and public domains will both be brought to bear on how the reader engages in sense-making with the content.

One collection of narrative threads can be derived from the entry entitled 'Blogs easier to read than formal publications'. The author has undertaken a brief experiment on the 'readability' of blogs, using FLESH software, based on a piece of research he has read. This forms the core narrative which is the focus of reader engagement (see Figure 2, below).

Insert Figure 2 Blog entry, The Ed Techis here

The blogger voices reservations about the methods involved in the experiment, and a reader may want to conduct a quick check on the software used to conduct a test of 'readability', provided through a hyperlink (see Figure 3, below). This provides a brief explanation of the software, with an option to follow further links with more technical details, or return to the point of the blog, which describes the author's findings. The links are there for those who wish to carry out their own experiment as a result of reading the blog.

Insert Figure 3 Hyperlinked webpage on 'Flesh' technology here

The reader then has an option to examine the research paper the blogger refers to, which provided the original idea for the readability test, in which case he/she is taken by hyperlink to a different kind of text, an academic article on the Higher Education Academy website. The genre used is the academic research article (see Figure 4, below).

Insert Figure 4 Hyperlinked article from the Higher Education Academy here

If interested, the reader can then go one of three blogs which have been the subject of the experiment and have been 'searched' for readability using the FLESH software, such as the one in Figure 5 below.

Insert Figure 5 Hyperlinked webpage of blog used as data source for experiment here

This blog itself is linked to a further piece of research which inspired that blog...and so the trail is composed of a number of narrative nodes. These form catalytic moments involving choices for the reader. The nodes create a macro-structure which links the trail in a logical way which can be judged as more or less cohesive in terms of thematic focus or



appropriate/usable content for example. At the same time, the experience is not of a narrative whole however, in that there is no over-arching macro-organization of material into a pre-formed meaning. Narrative is rather an act of context-making on the part of the reader, brought about by engaging with the social utilities of the blog which have been created by another individual, but which can only exist via chains of hypertextual material provided by further individuals. Out of all the possible choices, the reader becomes their own narrator, as they create what Walker (2006) terms a 'coherent schema from a personal perspective'. The trail can also take the reader into the blogger's domestic or 'private' world of 'going for a 10K run' and having 'a dinner party for my wife's birthday' (see Figures 6 and 7 below)

Insert Figure 6 [Hyperlink to blogger's twitter page 1 here](#)

Insert Figure 7 [Hyperlink to blogger's twitter page 2 here](#)

Such choices indicate the availability of different epistemic orientations towards blogs as social utilities, based on individuals' beliefs about 'what I need to know' to make sense of the blog. The choices made around narrative nodes are core to the ways the reader organizes experience to make sense of it, and are thus key to the narrative process. By these, an emergent narrative evolves through participating in blogging as both an individual and a social practice. We use the term 'emergent narrative' to imply a set meanings held in a provisional state of connection by the user. It is continuously evolving and exists within the context of fluidity of meanings, which change as choices are made. The nodes which constitute the narrative trail in this particular blog include:

- choices about interest in the personal/public domain of the blogger
- choices about engaging with technological affordances, e.g. by choosing to download software to enable new types of engagement to take place via further links
- choices about engaging with the 'academy' via published papers linked to the blog
- choices about the context within which the blog is nested as an 'edublog'

They are choices which determine the degree to which a meta-level engagement is achieved by the reader, in which the agentive role becomes embedded within the sense-making process. The reader arrives with a pre-existing set of understandings about what things mean which provides an orientation for the choices made, and a means of checking for plausibility and reliability of the choices made. The set of understandings held at any particular moment is what can be considered to be a 'contingent narrative', to which the reader constantly refers to whilst engaging with learning trails. It is the means by which an underpinning sense of connectedness exists, by which the reader-as-narrator of his/her own experience is able to draw on schema based on narratives which have proved trustworthy in the past, and which have passed into their organization of experience to date.

Some of the narrative nodes to be negotiated are predictable as ways of connecting with and directing the trail. Others are less predictable – for example the choice to engage with the blogger's personal domain and read narratives of domestic/family life by following links to *twitter*. Although these have, ostensibly, nothing to do with the 'experiment' which has

been blogged, they are part of the social networking, and rely on users' identities as persons as part of the construction of the experience of the blog. The focus of engagement may shift entirely, and move out of the educational domain. The blogger's online persona is composed of multiple identities – he is an academic who engages in scholarly work; a colleague (frequent references are made to those he works/blogs with regularly); a husband whose wife is about to have a birthday; a physical entity who goes for runs of 10 kilometers... All of these are narratives of the self, by which the blogger has constructed a complex context for engagement. The choice to engage with all or none of this is the reader's. We can engage with each persona separately, focus on just one, or consciously resist some. We can read all of them, and engage in a more complex kind of context-construction by the ways in which we make choices about connections between a range of personal- and professional-oriented intra-textual narratives. Making sense of the blog involves making sense of the blogger. This is essential to the social aspect of blogging, which views the social as an effect of engaging with others, rather than as something demanding interactive web-based practices such as 'commenting' on blogs. Most 'comments' are not iterative – they tend to act as isolated signs of response or interpretation, evidence that a person has read a blog entry and has been affected in some way. Back-and-forth iterative exchange which constitutes sustained dialogue may occur only rarely, and is not essential to a conception of blogging as a social utility. The range of comments requires investigation to ascertain what evidence they contain of the social construction of knowledge within the blog.

We remain skeptical of looking for outward signs such as comments, as indicators of complex internal learning experiences. Social presence in blogging is a subtle phenomenon, by which the dialogue with the reader is conditioned by the presence of the blogger and the awareness of their multiple-identities as a 'real person'. Blogs which offer little signposting towards the blogger's persona as multidimensional may thus inhibit the sense-making process for the reader, allowing a narrower range of choices to be made about what kind of interaction with content it is going to be. The narrower the range of narrative nodes, the less dialogic engagement with narrative processes of meaning-making are available to the reader. These are areas which should feature in a research agenda for learning with the social utilities of Web 2.0.

### **Conclusion - towards a research agenda**

Narrative can be seen within blogging contexts as a dynamic, experiential phenomenon – a lived process of meaning-making by which participants reconfigure what they 'know' and how it fits in with existing conceptual frameworks, and involves them in appropriating technological and social resources as part of 'making sense' of content. There are well-rehearsed arguments for the democratizing effects upon knowledge-building practices of the growth of technologies, and increasingly so with arguments that Web 2.0 technologies have allowed participants to personalize the ways ideas are expressed and communicated. As illustrated here, this is partly because within micro-communities, participants have to assemble meaning independently and make a coherent whole out of the narratives they encounter. The organization of meaning is not pre-structured or pre-defined, but evolves through the complex negotiation of narrative nodes which act as catalysts for meaning-

making. The 'meaning' of the blog is potentially exploded and reformulated by how the user brings together its constituent parts in a unique narrative trail made up of the interactions between the range of content and the users' personal conceptualizations. Choices made both result from and contribute to the particular ongoing dialogic processes which are fostered by engaging with Web 2.0 technologies. From this perspective, learning can be seen as both a cognitive process taking place in the learner's mind as well as seeing it as socially and culturally embedded in practices brought about by technologies. Such a perspective assumes that the social conditions in which learning takes place are essential, and that learning is a process involving individual cognition and socially negotiated meanings. This argument for the need to understand discourse processes as a foundation for designing for learning has been advanced by Ravenscroft (2004), and underpins his qualification of Wenger's (1998) privileging of community in collaborative learning contexts "Surely learning is a process that takes place within a participation framework **and** an individual mind?" (author's emphases) (p. 135). It also relates to the argument made by Garrison and Anderson (2003), that educational goals rely on a transaction between the individual and the social, the private and the public "where individual experiences and ideas are recognised and discussed in light of societal knowledge, norms and values" (p. 4). In blogging contexts, demands are made on the learner to make sense of electronic content to enable both private and shared experiences and ideas to be organised and made significant, or given meaning. Related to this, a variety of questions is raised which emerge from a narrative trail, and which form the basis of a research agenda:

- What is the relationship between monologic practices, which can be embedded within blogging as a 'broadcast' medium, and socially constructed knowledge?
- What strategies can be developed by users to work productively with the cognitive demands involved in negotiating social software such as blogs?
- How can knowledge construction be supported by fostering inter- and intra-narrative contact between users?

These emergent questions are relevant to contemporary pedagogical development. There is a need to consider how learning contexts, both formal and informal, might take account of users who engage in multiple, co-existing monologic and dialogic practices. It is an emerging challenge to consider the relationship between such a range of practices and the social negotiation of meanings. We need to consider these questions where practices such as blogging play a role in transactional learning experiences, and if blogs are to be truly 'social' utilities in the sense of enabling the construction of shared meanings towards socially responsible educational goals.

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<sup>1</sup> <http://andysblackhole.blogspot.com/feeds/posts/default?alt=rss>

<http://snurb.info/node/feed>

<http://feeds.feedburner.com/TheEdTechie>

<http://ubiquitousthoughts.wordpress.com/feed/>

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