Networked Learning with Digital Texts

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ABSTRACT

This paper sets out to examine the implications of the academic use of digital text among learners in higher education. Working from the perspective that the study and production of texts – in whatever form – is a defining academic activity, it seeks theoretical and evaluative insight into the effects of the shift in learning contexts from printed to online, digital text. It begins by demonstrating how the metaphors of stability and mutability can be applied to the two forms, and moves on to examine the accounts given by students of their experiences of working with digital text. The paper ends by offering some alternative perspectives on these accounts, each of which suggests that the cultural shift from the print paradigm to the digital mode is one which is rendered problematic by many of the discourses we engage in when we describe the tasks of learning, teaching and scholarship.

Keywords
Networked learning, text, literacy, digital text

INTRODUCTION: PRINT STABILITY AND DIGITAL MUTABILITY

Printed and written text, as stable materialisations of the workings of the reasoning mind, continue to function as dominant markers of ability in higher education. Where a student's success is determined often by his or her ability to express analysis in written form in essays and exam scripts, the worth of academic staff is still to a large extent measured by printed and published output. Throughout the university writing, captured in its print form, is still the primary marker of academic legitimacy. The linear, logically-developing scholarly text, with its hierarchical structure and build toward conclusion, is still the primary expression of the academic mind.

It is not surprising therefore that the codex book – symbolising the material embodiment of legitimate knowledge in the form of the stable, linear text – still sits at the heart of the university both physically, in the form of the library, and symbolically (it is interesting to see how the crests and logos of countless academic institutions repeatedly show the codex sitting at the very heart of the university's symbolic representation of itself). Printed text holds almost a talismanic status within the university, acting as a symbolic anchor, as a physically and metaphorically graspable embodiment of academic knowledge. It is also one of the primary means by which our identities as academics are defined and constituted. What then are the consequences for teaching, learning and scholarship when text 'goes digital'?

In contrast with the relative stability of the printed page, metamorphosis and mutability characterise digital text. The Ovidian metaphor has been applied many times to describe the digitisation of textual artefacts (Lanham 1993; Brown 2000; Rhodes and Sawday 2000). For Lanham, writing before the use of the internet became widespread, the 'perpetual immanent metamorphosis' (Lanham 1993: 11) of digital text is experienced largely through word processing. Even in its un-networked state, text digitised and 'liberated' from the printed page is a volatile substance. It can be cut, pasted, scaled up or down, presented in different font faces and font styles, and easily illustrated with digitised sounds, animation and images which are themselves infinitely manipulable.

According to Lanham, such capacity effects a radical change in the way we view text. The printed page has been naturalised over centuries to the point where it is no longer seen as a technology. It has become invisible in the sense that its material aesthetics are generally subordinated to its ability to function as 'a transparent window into conceptual thought' (Lanham 1993: 4). As Hayles has revealed (Hayles 1999), print is naturalised to the extent that we see the information it 'contains' as being separable from its material form. Digitisation materially problematises this ideal of transparency. Post-digitisation, the 'textual surface becomes a malleable and self-conscious one'. We no longer simply look *through* text to its meaning, we also look *at* it (Lanham 1993: 5). Its volatile materiality becomes an issue as we come to see its 'creation and production as inextricably entwined' (Hayles 2002: 373).

The printed page is stable in time and space. As Poster puts it, 'This page is here and now. One must physically move it to displace it or one must displace oneself to approach it. The page is an object in the world, obstinately enduring from moment to moment, subsisting in a place through the laws of inertia. (Poster 2001: 92). The digital text, however – 'mobile and changeable' – can be 'moved around the world in an instant'. A digital text is 'everywhere at once, so long as the appropriate technical conditions apply' (92). According to Poster, however, such 'temporal instantaneity' is not in itself revolutionary. It is the spatial instability highlighted by Lanham – the ability to alter the material arrangement of the text – which makes the digital text fundamentally different from the 'analogue' or print text (92).

Once networked, the digital text is not only subject to the typographical play that Lanham describes. It can also be formatted as hypertext, linkable at an instant to any other text on the network (such links are themselves volatile – every web user has experienced the frustrations of '404 – File not found'). The networked text opens itself up to intervention and alteration by a global readership, either intentionally through the embedding of methods for collaborative authorship, subversively through hacking and copying or mundanely through the variation and configurability of readers' browsers. The spatial configuration of digital text is not subject to control by author or publisher. Such texts are impossible to pin down without reverting them to their analogue form by printing them out.

The inscription securely embedded in the printed page is therefore in contrast with the volatile, malleable text which shifts across the surface of our screens and throughout our networks. Where we read things *in* books and journals, we read them *on* the internet and the web. Print privileges the terms of *stability* and *depth*, where *fluidity* and *surface* belong to the digital. Within the context of learning, there is an implication here for the classic depth-surface binary dominant in educational development discourse – a theme I return to below. The shift in the materiality of language is, however, important in a broader sense in that shifting textual formations forge change both in our modes of thought and in the ways in which we are positioned as subjects. It is this fundamental *difference* which is often overlooked when learning moves online.

As this paper will suggest, the dominance of the print paradigm in higher education – including those areas of its activity which are delivered online – works to construct digital texts as inauthentic, to cast the new modes of authorship online as threatening, and therefore contributes to a culture which is resistant from the outset to the project of networked learning. To begin to approach how this might be the case, I will move on to consider a selection of the accounts given to me by students, describing their attitude and relation to digital text. These accounts suggest that, in the contexts of online learning, many learners look to the printed page as something materially and metaphorically 'graspable', an apparently stable entity imbued with an authenticity which contrasts with the unsettling mutability of digital text.

'GRASPABILITY': STUDENTS' ACCOUNTS

It's like, well it's quite strange because y'know it is this vast space of just, it's it's not even words, it's just sort of [pause] gigabytes and megabytes and all that, but just at the same time you're seeing it through a very small screen. So I I find that quite hard to sort of grasp, this vastness in this little box that's sitting on top of your desk. I I just [pause] you don't, you know that all that information's out there but what I ever use is just so small, you don't think about the millions and millions and millions of things that there is. If that makes sense!

Alison

The vast unknowability of this 'microworld of electrons' (Poster 2001: 82), the 'millions and millions and millions of things that there is' which – for Alison – must both be thought about and not thought about provide a vivid picture of the kind of digital imaginary which students grapple with when they engage with text online. In this section I will offer extracts from students' own accounts, looking at how they describe themselves as engaging with this digital world. It is an engagement largely expressed in terms of an awkward negotiation between the digital and print realms, where the volatility of digital text is almost always resisted in favour of the 'graspability' of print.

I should stress at this point that my aim in discussing students' accounts is not to suggest that they are somehow 'wrong' in their privileging of the print over the digital mode. My interest is rather in exploring why this might be the case by looking at the terms, metaphors and allusions used in their accounts. In general, I agree with the majority who find large amounts of text difficult and uncomfortable to read on screen. Such text is not designed to be consumed in its digital form. I explore these interviewees' accounts from within a perspective which is interested in the possibility of the emergence of new scholarly and pedagogical forms which work with, rather than against, the particularities and strengths of digital media.

These fragments are representative extracts from one-to-one interviews with 25 students. Alison, Daisy and Charlie are all 18 year-old students studying a first year course delivered using online group discussion and weekly face-to-face lectures. A small proportion of the course reading material is presented in digital form. Sue is a student in her forties, studying an entirely online professional development programme delivered to a small group of distance learners.

Possession

OK, so if you had to choose a medium you felt happiest learning from, what would it be?

Paper.

Why?

Probably because I'm most familiar with it because I'm so old. It's how I've always learned. Because I think of it as the common denominator, so even if I I was using the web I would print it out. Its just with paper you can always go back to it, you know where you are with it. In terms of actually looking at a lot of information on the web, you'd print it out anyway 'cos you can't really get a grip of the structure of it unless you actually see it. You can visualise it more.

Can't you go back to stuff on the web?

Well you can do, but you can't really get the shape of it, you can't scan it as easily as you can when it's printed because you've got other issues like robustness, you're reading something and then it crashes or you're reading it and you want to highlight something, I know it's possible to do that but it's harder. And also you can use it in all sorts of different situations, you can access it at base.

Sue

Sue's account is typical among students in its expression of the impossibility of 'grasping' the digital text. The overwhelmingly dominant response to text on the internet among my interviewees was to hit the print button. For Sue, paper operates as a stable locator; the mutability of digital text is contrasted with the spatial reliability of the page of print that 'you can always go back to'. The page of print offers an anchor for the reading subject, 'you know where you are with it'. The slippery, amorphous quality of the digital is contrasted, in this account, with the relative ease of comprehending the spatial reality – 'the shape' – of the text when it is printed out. For Sue, the relation between electronic and print text is expressed in terms of visibility or invisibility – 'you can't really get a grip of the structure of it unless you actually see it' – as though when using online text you are almost looking at it *without* seeing it. The volatility of the digital medium – its lack of 'robustness', its tendency to crash – is opposed here to the metaphorical groundedness of print, which can be accessed 'at base'.

Sue suggests that her preference for print is due to her age (mid-forties), but it is in fact a preference very much shared with younger learners.

How is reading a web page different from say reading a book or a paper?

I dunno cos, a web page, you can like eh scroll down a bit, but I don't know I just find it easier to print it off and like go through the things, highlight what I think's important. Like the book, like you've got it there in print and you can highlight it, and I just think y'know that's a lot easier than like going through it with like the thing 'cos like if it's late at night you're at the computer and your eyes are going you can like miss it, it's so easy to misread something in this quote and misref, like not reference it properly and then that's you in trouble for your exams and it's just like 'OK I should've just printed that off', so.

OK so it's just easier to read?

Yeah.

If it's from a printout?

Yeah 'cos like you might read it in your bed, you can read it like any time but to read a web page you have to be at the computer.

OK, so if you had to choose a single medium to learn from what would it be?

Mmm, probably [pause] probably books 'cos like again you can reference it, you can you can get like a good, you can reference it with like your bibliography, you can highlight it, you can underline it, but, you can always like print off stuff from the web site for it, as well so it's just like both. I just feel so much easier having something printed

out there, that's like mine to do what I want with it, and then I can chuck it in the bin once the essay's in! [laughs] You can do the sigh of relief, it's just ah!

Daisy

Daisy highlights here the physical discomfort involved in reading from a screen. Her preference for print also circles around a concern with referencing convention – print text has a security in its position within academic modes of legitimation which, for Daisy, digital text does not share. Referencing a text is a way of pinning it down. Daisy's doubt about legitimation, combined with the possibility of error resulting from the physical difficulty of reading from a screen, threatens a slide into failure as a student – 'that's you in trouble for your exams'.

The vision of intimacy Daisy describes with the printed page – 'you might read it in your bed, you can read it like any time' – suggests a kind of possession which is impossible with the more mediated modes of access to digital text. This image of, or desire for, possession of the printed page is the most striking thing about this excerpt from my interview with Daisy; when she says 'I just feel so much easier having something printed out there, that's like mine to do what I want with', she is suggesting the possibility with the print form of *having*, of grasping or owning, the text. By implication, this is something which cannot happen online. As Hayles reveals, the infinite and instant replicability of digital text means that it is access, not possession, which structures our relation to it (Hayles 1999), yet it is the logic of possession within which most of the students I spoke to were operating.

The printed page for Daisy becomes a metaphor for the task of essay production. The finitude of the page represents the delimitedness of the task, so that when the latter is finished, the former can be cast away – 'you can do the sigh of relief, it's just ah!'. The implication is that the digital text can never be cast off in quite the same way. Perhaps it lurks in the hard disk or on the network, never fully present and never wholly absent, representing the disturbing possibility of the task of the digital reader-essay writer being never quite complete.

Two windows

It's not something I enjoy, I like or would advise at all if they had a choice, I'd totally eradicate it but well I don't expect so but! [laughs] You just have to kind of go with it but I mean if there was a choice between reading from a screen and reading from a book I would go for the book every single time. I mean I don't like reading books but em you would always just get a lot more, you can't read properly on the screen, y'know the screen flickers, you only get like half the information, you don't take it in. There's always the feeling if you're reading something from the screen that you want to get it finished as soon as possible so you don't have to look at it any more. So. Uh I don't think it's real. It's very unreal, very fake. Not for me. I'm sure some people like it! [laughs]

[gap of 150 lines]

All I'd say, I'd much, if I had to learn something I'd much rather eh travel up to [name of university campus] and go to the [library] and sit and like sit by a window and like read, than y'know go to a computer, even if it was in the room, and go on the internet, even though it'd be so much easier just the whole y'know, you just wouldn't, you wouldn't be taking it in, you'd almost resent what you were learning, whereas if you've got quite a nice environment to do it in, and a real environment, y'know not just a computer screen, like you take more in.

Charlie

Charlie, like Daisy, refers to the physical discomfort of reading from the screen, aligning it with the difficulty of absorbing textual information in its digital form. Empirical research (Lawless and Kulikowich 1996; Garland and Noyes 2003; Murphy, Long et al. 2003) supports his suggestion that 'you only get like half the information' from screen text when compared with print text – one report suggests a decline in reading performance of 40% or more (Lee 1996). While such research buys into the questionable logic that information is separable from its material form – making straightforward comparisons between print and digital text possible – it is clearly the case that, for many, reading large amounts of text on screen is physically uncomfortable and cognitively difficult. However what is most interesting in the accounts of the students given here is the terms within which they speak of digital text, and the metaphors they apply in comparing it to its printed form. Charlie's account is striking for its extreme resistance to computer mediated learning – 'I'd totally eradicate it', 'you'd almost resent what you were learning' – but also for its alignment of screen-mediated text with the 'unreal' and the 'fake'. The material instability of the text – 'the screen flickers' – places the digital in the realm of the inauthentic. By juxtaposing the two possible reading positions – by the library window or positioned in front of the window of the screen – Charlie's account nicely contrasts the serene view on a knowable material 'reality' of the one with the confrontation with a highly mediated 'fake'-ness and unreality of the other. Lanham's contrasted modes of

looking *through* print as opposed to looking *at* the digital text (Lanham 1993) are brought to mind, expressed here by Charlie in terms of the impoverishment of the latter.

PERSPECTIVES ON THESE ACCOUNTS

'Papyrocentrism'

One way of approaching these accounts revolves around the suggestion made earlier in this paper that academic discourse has historically been, and continues to a large extent to be, deeply 'papyrocentric'. Scholarly argumentation in its linearity and drive toward closure is to an extent informed and structured in synthesis with print convention, and formal modes of scholarly expression which operate within the terms of the digital environment have yet to be developed. The digital does not – and arguably cannot and should not – represent academic authenticity and legitimate knowledge in the way that the print form does. Thus in the 'late age of print' the majority of online learning experiences presented to students (and modes of scholarship available to their teachers) are offered from within an instrumental, print paradigm, in which the network is used largely as a method of distribution of text intended for print rather than as a site for the exploration of new scholarly textual forms. It is not surprising, therefore, that most quickly give up attempting to engage with text presented digitally in any terms other than those of print.

The use of the internet as a means of distribution of printed text is not necessarily problematic, aside from the inevitable burden of printing costs passed on to the students, and the neglect of a new pedagogic space caused by the failure fully to engage with the challenges of the digital form. It does, however, seem to set up a clash of expectation in students. For many – the ones discussed here are representative – the conflict between the print and digital paradigms is a cause of anxiety. Many learners appear to be disturbed by this mis-match between the two modes of textuality. For some – Charlie is an example – the anxiety resulting from having to negotiate the tension between the two textual forms appears to translate into an extreme aversion to the online mode.

There is no reason why learning from screen 'texts' need be a wretched experience. Several of the students I spoke to who complained of the physical discomfort of reading from screen, the feeling of wanting to get it over with as quickly as possible, were happy to spend many hours immersed in gaming environments. It is a significant challenge for educators and developers wishing to engage meaningfully with digital environments for learning to design pedagogies that do attempt to engage with the digital medium from outside the print paradigm, pedagogies that perhaps have something in common with the 'new critical vocabulary' which Hayles calls for in the way we think about the pedagogical issues at stake in the uses of digital text:

> This new critical vocabulary will recognize the interplay of natural language with machine code; it will not stay only at the screen but will consider as well the processes generating that surface; it will understand that interplays between words and images are essential to the work's meaning; it will further realize that navigation, animation and other digital effects are not neutral devices but designed practices that enter deeply into the work's structures; it will eschew the print-centric assumption that a work is an abstract verbal construction and focus on the materiality of the medium. (Hayles 2002: 373)

In the increasing focus within higher education on issues relating to multiliteracy and digital literacies (Tyner 1998; Cope and Kalantzis 2000; Kress 2003; Matthews 2005) and on the creative pedagogical uses of forms of textuality which are 'born digital', such as weblogs, wikis and web essays (Williams 2002; Oravec 2003; Phillipson and Hamilton 2003; Augar, Raitman et al. 2004), we can perhaps begin to glimpse something of a pedagogical future which engages fully with what is specific, and specifically valuable, in the digital mode.

Depth and surface

Another way to approach the issue of authenticity and textual medium is to consider it in relation to the discourses we engage with when we discuss approaches to learning and the design of effective pedagogy, and to examine whether such discourses work to deprivilege the kinds of academic activity which might take place through digital media. In this final section of the paper, I discuss as an example the binary proposed by Marton et al (1997) in distinguishing between 'deep' and 'surface' approaches to learning. In recent years, this binary has been subjected to significant re-appraisal, from perspectives which critique phenomenographic method (Webb 1997; Haggis 2003; Lindsay 2004), to those which attempt a reconciliation of phenomenography with critical pedagogy and a reconceptualisation of its key terms (Mann 2001; Ashwin and McLean 2005). While recognising the value of the deep-surface approach model to practicing teachers, my aim here is primarily to explore the way in which the shift into digitality might prompt re-consideration of the depth-surface binary as a trope by which we can understand the ways in which learners approach text online.

Digital text, particularly when it is on the web, appears to ask us to adopt a way of reading which is at odds with the academic tradition of careful attention, 'deep' reading, 'absorption' and close analysis of written text. When we read on the web we scan and skim, we follow links, we move on quickly over the surface of the text, we 'play' and 'surf' (Morkes and Nielson 1997; Dyson and Haselgrove 2000; Rho and Gedeon 2000; Wilson and Tan 2005). To adopt such a way of reading is, in its very act, to adopt a questioning attitude to the authority of the text. As Lurie points out:

> HTML, hyperlinks, frames, and meta-tags are the essential building blocks of the web. They combine to create a highly associative, endlessly referential and contingent environment that provides an expanse of information at the same time that it subverts any claim to authority, since another view is just a click away. (Lurie 2003)

In its endless referentiality, its atmosphere of 'flickering signification' (Hayles 1999), the web inclines us toward a deconstructive mode of reading which seems to run counter to students' – and perhaps teachers' – expectations of how reading should be conducted within learning contexts.

Discourses drawing on the distinction between deep and surface approaches to learning (Marton and Saljo 1997; Ramsden 2003) – still one of the most influential binaries current within theories of learning – offer interesting perspective on this issue. The deep and surface approach model still has 'foundational status within higher education research, practice and development' (Webb 1997: 195), being regularly applied both to traditional learning contexts and to those which are mediated by computer technology (for some recent examples see (Hara, Bonk et al. 2000; Jelfs and Colbourn 2002; Richardson 2003; Heap, Kear et al. 2004)). It is of particular interest in the context of this paper in that the original research from which it emerged was to a large extent concerned with the ways in which students approach learning from (printed) texts (Marton and Saljo 1997).

Surface and deep approaches relate to the *intention* with which learners approach a text, and are often aligned with the related atomistic-holistic binary (Svensson 1977) which expresses the nature of the *process* adopted by the learner in approaching the learning task (Entwistle 1997: 18) The deep approach is associated with meaningful understanding of a topic or concept, while the surface approach is associated with rote learning and task completion (Marton and Saljo 1997: 43). A surface approach may be seen as a sometimes strategic response to the expectations arising in educational contexts from society's 'static and factual conception of knowledge' (Saljo 1997: 104), but it could not be said to be the privileged term in the deep-surface binary. For Ramsden, 'Surface is, at best, about quantity without quality; deep is about quality and quantity… Surface approaches are uniformly disastrous for learning…yet they may permit students to imitate authentic learning and to bamboozle their teachers into thinking that they have learned' (Ramsden 2003: 45-6). My intention here is to explore the way in which this model works to construct a dominant view of textual interaction in learning contexts which deprivileges students' modes of engagement with specifically digital text. A brief summary of the terms brought to bear in describing the deep as opposed to the surface approach to learning from texts will be useful here:

– where a deep approach works to take an '*holistic'* view of the text, students taking a surface approach '*atomise'* the text, failing to apprehend the 'intended relationship between parts and "wholes"' (Saljo 1997: 101)

– to take a deep approach is to pay attention to the *structural cohesion* of the text, whereas a surface approach involves a type of reading which *fragments* the text or '*distorts'* its structure by focusing on 'key words and phrases' (Laurillard 2002: 43); in taking the surface approach, learners' 'awareness skated over the surface of the text' (Marton and Saljo 1997: 44)

– readers taking a deep approach '*focus on what is signified'*, where those taking a surface approach '*focus on the "signs"'* (Ramsden 2003: 47)

– with the deep approach there is a focus on '*what the text was about'*; with the surface approach the focus is on '*the text in itself'* (Marton and Saljo 1997: 43)

– taking the deep approach involves the learner in grasping and preserving 'the *author's intention, what it is all about*' (Marton and Saljo 1997: 45), while an appropriation of the 'intended' meaning by the reader is an attribute of the surface approach [my italics]

The deep approach – with its focus on structural coherence, stable signifiers and engagement with authorial intention – privileges a mode of approaching text which fits well within the print paradigm. By contrast the terms used to describe the surface approach – a focus on the materiality of the text ('the text in itself'),

nonsequentiality, an engagement with textual 'fragments' rather than 'wholes', a tendency for the intention of the author to be subordinated to the reader's own meaning-making endeavours – map on to the modes which have been associated with hypertext in particular, and digital text more generally (Bolter 1991; Landow 1997; Ryan 1999; Poster 2001; Hayles 2002; Carter 2003; Lurie 2003).

The strong focus on authorial intention as the guarantor of meaning in the deep-surface approach model is significant for the concerns of this paper. For Saljo a 'major learning problem' with the surface approach is that 'the text is not decoded on the premises on which it was written, and the reader, in his or her role *as learner*, does not seem to be directed towards reconstructing its messages' [original italics] (Saljo 1997: 102). Saljo acknowledges that, in the learning context, the relation between reader and author is defined by an asymmetric distribution of power, making it necessary for the reader-learner's own meaning-making activities to undergo a 'temporary subordination' (80) to the author's reasoning in order for successful (deep) learning to take place. However, the assumption is still that the marks on the printed page – stable, unambiguous – act as the material manifestation of the 'original' meaning and intention of the author. The learner taking the deep approach will, in turn, approach the text with something like reverence, with the intention of extracting the author's 'message' complete and unaltered by their own acts of meaning-making. In this 'ideal' approach, the reader-learner is very much subordinated – temporarily or otherwise – to the author-teacher.

Even were this an appropriate model for thinking about the relation between the reader and author of the print text, which is itself doubtful, the digital author is very different from its analogue counterpart. Distributed, fragmented, often anonymous or collective, authorship in the digital realm is far closer to what Foucault conceptualises as a post-'author-function' state (Foucault 1988; Poster 2001; Bayne 2006) than to the humanistic, intending author assumed in the deep/surface approach model. How then can a mode of reading – an approach to learning – which looks to authorial intention as the ultimate guarantor of textual meaning survive the shift into the digital?

If the deep approach depends on stable signification and a humanistic view of both author and reader, it also relies on a vision of the structural cohesion of the text which is difficult to maintain in the digitised, networked mode. The learner taking the privileged deep/holistic approach will concentrate on 'preserving the original structure of the discourse and therefore preserving its intended meaning' (Laurillard 2002: 43). Such terms – 'original structure', 'intended meaning' – become problematic when we attempt to apply them to the structureless, distributed, mutable, profoundly 'ungraspable' realm of internet textuality, where simply to read, to pass over the surface of the text, is to engage in a kind of critique of textual authority. To continue to operate within the terms of the deep-surface approach model while investigating students' approaches to learning from digital texts involves working within a discourse in which the online mode is deprivileged from the outset.

If we continue to find the deep-surface approach model to be the best way of thinking about learning we might, therefore, be obliged to conclude that digital text is not a good learning medium. If, however, we wish to begin to consider learning from digital text in a way which is informed by the specificities of the digital paradigm, we may need to step outside the deep-surface binary and perhaps begin to see it as an element within a dominant educational discourse which could actively work *against* the types of learning which take place online. If we see students themselves as operating – consciously or otherwise – from within this discourse, it is unsurprising that their accounts revealed perspectives in which 'authentic' reading and learning took place within terms very like those described by the deep approach.

In these accounts, the privileged mode is one in which textual structure and meaning are stable, graspable and knowable. Digital text – slippery, uncomfortable, hard to 'absorb' – belongs to the realm of the inauthentic. It seems that a shift within the culture and terminologies of understanding learning, a nurturing of new pedagogies and new ways of knowing through these emergent textual forms are needed, if we are to begin to engage with the digital on its own terms.

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