A different quality:
Hypertext, postmodernism, and disequilibrium

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Abstract: *The World Wide Web is almost a paradigm case of the way postmodern knowledge works. Among the many congruences between hypertext and postmodernity are the idea of text as "nonlinear, or, more properly as multilinear or multisequential", the conception of "textual openness, intertextuality, and the irrelevance of distinctions between inside and outside a particular text", and the cultivation of multivocality, in that "hypertext does not permit a tyrannical, univocal voice" (Landow, 1992, pp.4, 8 & 11). However, many approaches to online learning severely curtail these potentially anarchic elements of hypertext. Drawing on constructivism, which also converges in interesting ways with postmodernism, this paper argues that the capacity of the Web to produce disequilibrium in learners should be exploited rather than curtailed, particularly in the disciplines associated with the humanities. It describes the development of an online learning module that sought to maximise students' confusion as a way of introducing them to the connection between hypertext and postmodernism. The results were rather startling—only by throwing away the rule book in relation to both multimedia design and, to an extent, instructional design could the design objectives of the course be achieved, and the learning objectives of the students be facilitated. The resulting course module could not be evaluated in any traditional way, which suggests that measures of quality for online learning will need to be very flexible in a postmodern environment.*

Keywords*: hypertext, postmodernism, constructivism*

It is a commonplace of instructional design that in developing courses for the World Wide Web new educational models need to be deployed. Rather than simply transplanting pedagogical methods from face-to-face or traditional distance education to the new medium, academics should be developing teaching methods that grow out of the technology and capitalise on its strengths. Oliver, for example, critiques what he calls "conventional" Web-based learning, which is "organised around content" with "consolidation activities" (such as the use of a discussion list) tacked on (2001, n.p.). Similarly, Sims laments what he considers to be the misuse of computers in education: "How many 'online learning' sites are simply screens of wasted content? This is not how computer-based learning should be manifested, and it won't work!" (2001, p.2). At the same time, however, in many discipline areas, but particularly the humanities, there is a long tradition of reliance on a particular kind of pedagogy: one that is based on argument and critique, and whose primary mode is discursive. In this model, screens of content (while clearly not the best use of the medium) are certainly not "wasted". Lecturers want their students to read—to absorb, reflect on, and critique the work of others, and to develop their own defensible and rigorously supported yet flexible and evolving positions in relation to that work. They strongly believe that it is in that primarily textual engagement that students' learning begins.

Given this context, online learning may well seem not to have a lot to offer humanities students. Certainly it has administrative benefits for the educational institution, particularly over traditional print-based distance education. But the "bells and whistles" of computer-based learning—the more complex and exciting developments in multimedia—seem to be largely irrelevant in this learning context. There is nothing to simulate, no requirement for repetitive development of psycho-motor skills, and the higher-order thinking skills students are expected to develop—skills associated with analysis, synthesis and critique—are not skills that can be tested by a computer. In fact, these particular features of computer-based learning seem to fit more securely into an instructivist framework than into the constructivist one that underpins much of humanities education. In the humanities classroom, there is a high tolerance for ambiguity: as Thurber puts it, "the ability to deal with ambiguity—to decipher complex events, issues or statements—is at the heart of what we do in the humanities" (1991, p.2). Unlike constructivist frameworks, instructivist educational models do not cater for ambiguity. Within constructivism, however, learning is seen as "an interpretive, recursive, building process by active learners interacting with the physical and social world" (Fosnot, cited in Wulff, 2000, p.149). In the humanities, the "physical and social world" is mediated by texts—it is by interacting with those texts, and with fellow students, that learners build their knowledge.

The key tenets of constructivism as identified by Fosnot articulate very succinctly, I would suggest, the methodologies employed in the humanities classroom:

1. Learning is development.
2. Disequilibrium facilitates learning.
3. Reflective abstraction is the driving force of learning.
4. Dialogue within a community engenders further thinking.
5. Learning proceeds toward the development of structures. (cited in Wulff, 2000, pp.149-150)

In the classroom, many of these conditions are assured through the interaction of students, texts and lecturer—interrelationships that require learners to put themselves on the line, that are unpredictable, unstable and potentially destabilising, that enable learners to engage in "reflective abstraction", and that ultimately result in learners' development of their own meaning-making structures in written essays. Fosnot's second point, that "disequilibrium facilitates learning", is particularly challenging because it is so counter-cultural. It suggests that mistakes, frustrations, humiliations, dead-ends and disasters are an important part of the learning process. This premise is a challenge to attempts to schematise and control the learning process—to make it as smooth and comfortable and predictable as possible. Wulff goes further to suggest that educators should create opportunities within the learning environment for "ongoing public address of disequilibrium, such as making time and space to respect the mistakes and honor frustrations through display and interaction" (2000, p.150).

The classroom can, ideally, be an unstructured space in which the lecturer can be truly responsive to the learning that is happening. The online environment, however, tends to be more highly structured. Much of the educational theory associated with online learning does take an explicitly constructivist approach (for example, Sims, 2001, p.5; Harper and Hedburg, 1997, p.4). But even within this context, there is nevertheless a strong sense that the key principles of educational design for the Web are structure and hierarchy. Sims, for example, critiques learning activities which form a "confused labyrinth of information, links, colleagues and navigation" (2001, p.9) while Harper and Hedburg emphasise (among other things) the need to give learners a "clear understanding of the metaphors used to structure information" in order to achieve effective use of "unstructured [multimedia] materials" (1997, p.7). In the area of multimedia design, the urge towards order is even stronger. For instance, outlining a series of approaches to developing hypertext, Seyer emphasises sequencing, hierarchy, the controlled release of knowledge and information, and the use of scaffolding for the user (1991, pp.93-103).

The need to establish a clear structure when designing educational multimedia materials will seem self-evident to anyone who has been involved in the development process; yet it is unlikely to facilitate that contentious "disequilibrium" Fosnot speaks of. Seyer stresses that "learning with a well-designed hypertext" should be "comfortable": "If you don't know the meaning of a word, just point to it and press a key—shzamm! An explanation will appear" (1991, p.2). According to a constructivist approach, however, learning should be anything but comfortable. In particular, it should not encourage the kind of passivity Seyer's description evokes. "Disequilibrium" is necessarily a dizzying, even nauseating, experience. The drive to tame or control the anarchic potential of hypertext so that users (and developers) won't get lost, overwhelmed, or confused ultimately limits the implementation of constructivist learning online.

I want to suggest, then, that to capture something of the constructivism of the humanities classroom in the online environment we have to be prepared to allow for a little anarchy. Hypertext is, after all, inherently anarchical. As such, it is closely associated with postmodernism. As Landow points out, there are "many parallels between computer hypertext and critical theory"; in fact, the two are closely interrelated in that "critical theory promises to theorize hypertext and hypertext promises to embody and thereby test aspects of theory" (1992, p.3). As an instance of this, he adduces the "ideal textuality" hypothesised in the 1960s by Roland Barthes, which, he suggests, "precisely matches that which has come to be called computer hypertext" (1992, p.3). He cites Barthes's description of this "ideal text": "it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one" (Landow, 1992, p.3). Such a (hyper) text challenges not only hierarchy and order but system and, potentially, meaning itself. While many online learning theorists (e.g. Oliver 2001) bemoan the linearity of so many online learning sites, and particularly of commercial online learning environments such as WebCT and Blackboard, very few would embrace such a radical anti-linearity (or, perhaps, multi-linearity) as Barthes describes here as a usable learning model.

In fact, as Usher and Edwards argue, education fits only uneasily into a postmodern framework. While "educational theory and practice is founded in the modernist tradition" and committed to Enlightenment ideals such as "critical reason, humanistic individual freedom and benevolent progress", postmodernism tends to debunk those ideals (1994, p.24). Instead, it "describes a world where people have to make their way without fixed referents and traditional anchoring points. . . . where knowledge is constantly changing and meaning 'floats' without its traditional teleological fixing in foundational knowledge" (1994, p.10). On the surface, then, it would seem that postmodernism and education have little in common. And yet education has embraced hypertext, in the form of the Web, with enormous relish. It has done this, however, only by minimising or eliminating altogether the truly radical implications of hypertext—its inherent postmodernism—and transferring to this medium the securities, structure and order of the older media. The challenge, then, for those using the Web for humanities education, is to take hypertext at its word—to harvest its potential as a destabilising, non-linear, multi-vocal medium in order to achieve that disequilibrium that is the key to effective learning.

Deploying Disequilibrium: Theory into Practice

This was the approach taken in the development of an online learning module at Central Queensland University aimed at introducing students to the relationship between hypertext and postmodern knowledge. The module, "Hypermedia, hypertext, and postmodern knowledge", is part of the course *Cultural Technologies*. The overarching aim of the course is to introduce students (many of whom are studying computing and/or multimedia) to the ways in which culture and technology interact, inviting students to explore and analyse specific instances of that interaction. The course has in the past been delivered to on-campus students using lectures and tutorials, with lecture notes available online. In 2001, it was developed for delivery to both on- and off-campus students completely online, and was offered in this mode for the first time in Term 2, 2002.

The design of this course for online delivery largely reflected the lecturer's commitment to the discursive model of reasoned argument and critique. In 11 of the 12 modules, a linear text was enhanced with links to relevant online resources, the development of animations presenting important interactions between culture and technology in a visual way, and an interactive timeline enabling students to compare and explore (through hyperlinks) key technological, cultural and historical events. Weekly asynchronous interactions between students were also part of the course design.

In the module on hypertext, however, the opportunity to use the Web, the pre-eminent instance of a hypertext system, to teach the philosophy of hypertext raised the possibility for the course lecturer and the educational designer of using the medium not only to explain that philosophy but actually to demonstrate it. We decided to create a hypertext that would exemplify, rather than simply describe, postmodern knowledge. In doing so, though, we realised we would be pushing the students to their limits, and breaking away from some of the standards of "good practice" in both multimedia and instructional design. But that was very much the point. Postmodernism is radical; it breaks all the (conventional) rules. If the students "get" that, then the module would have succeeded.

In effect, then, we wanted to try a form of experiential learning—a mode of learning which Usher and Edwards explicitly connect with postmodernism: "In giving value to the experiential and the learning engaged in as part of everyday life, the claim is being made that . . . There is no single ordered view of the world to be imparted, but multiple 'realities' to be constructed through an already interpreted experience" (1994, p.199). The experience we were asking students to draw on was not only their experience of the hypertext "labyrinth" we would construct for this module but also, indirectly, all of their previous experiences in using the Web. We hoped to recall, and intensify, students' experiences of the (frustratingly?) open-ended, complex and random nature of the Web, and give them opportunities to reflect on how (or whether) they managed to make sense of it, to learn from it, to retrieve information from it.

That experience would then become the basis of their reflections on how this kind of experience differs from the more linear experience of reading on paper, and even of face-to-face discussions.

Because we wanted to create an experience of frustration and confusion—to maximise the disequilibrium—we did not want to provide any clear structure to help students make their way through the module. We decided to begin with a list, more or less free-associated, of concepts, people and narratives associated with hypertext and postmodernism. Rather than shape these into a coherent discourse about either hypertext or postmodernism, we wrote brief "chunks" of information about each, found or developed images, and researched relevant Web sites. These were our raw materials, the nodes on our web. Putting these together without inadvertently implying some kind of structure proved difficult. We found that it was surprisingly hard to design something without a design: without any order, any beginning or end. The mere selection of links for the home page, and the order of the links on the page, unavoidably seemed to carry significance.

To get around this problem, we decided to make the links on the module home page completely random. When students first visited the page, they would find only the image of a web—no links would be visible. As they moved their mouse over the web, links would randomly appear; and each link would disappear when the mouse moved away from it. At every subsequent mouse-over, the link would change. As well as enabling us to avoid a "beginning" point, this helped to create the sense that the site was open and unbounded (rather than closed and defined), evolving and dynamic (rather than static), and required ongoing exploration. The links led to various lexia: a single word, line of text, or image; a discursive paragraph; another Web site, or a series of Web sites. In defiance of the tried-and-true principles of good design (cf. Neilson 1999), no distinctions were made for the user between any of these links; the only way to find out about each link was to click on it. We did not want to privilege any particular type of narrative or knowledge (e.g. image, text, essay, word) over any other, nor to impute authority to certain bits of text (such as those generated by the lecturer) over others. Again, the idea was to "abandon conceptual systems founded upon ideas of center, margin, hierarchy and linearity and replace them with ones of multilinearity, nodes, links, and networks" (Landow, 1992, p.2).

The use of random links also made it impossible for conscientious students to simply click on every single link on the site to ensure they had "covered" all the material. Instead, students were almost sure to get lost, to feel anxious about whether they had covered all of the material, and to forge their own paths—the outcome we were seeking. We also wanted students to actually read—not only the chunks of information we provided but the texts, articles, and Websites they would come across outside of our site. As Landow writes, "conventional reading habits apply within each lexia"; it is only "once one leaves the shadowy bounds of any text unit, new rules and new experience apply" (1992, p.4).

As well, we wanted to encourage (even force) students to discover, and engage with, the material in their own unique ways—to have a learning experience that would be uniquely theirs. As Featherstone suggests, within a hypertext, "[t]here no longer is a correct sequential way of reading or proceeding; the work has become directly activated by the particular purposes, or whims, of the user" (1998, p.13). To frustrate the idea that there is a "right" way to go about "reading" this module, we had to be careful to make no one approach look preferable to any other. The "desire" of the learner was to be the key motivating factor—not the intentions of the designer. To this extent, we had to be prepared to give up some control—not to be too dictatorial about what the learning outcomes for the module should be. We had the intention of introducing students to some of the broad contours of postmodernism; how they responded to this, which particular aspects they explored, how much or how little detail they went into, whether they loved it or hated it, whether they even discovered it, were all up to them.

Further, we wanted this experience to be at some level a playful one, with an element of surprise, a few dead-ends, and some unexpected and perhaps extremely tangential pathways opening up. We saw this playfulness as an important part of postmodern knowledge: "Rather than being seen as a problem or a source of error and confusion, the fluidity of the world and its constantly changing images are identified as pleasurable, something to be enjoyed" (Usher and Edwards, 1994, p.199).

Clearly, too, we wanted this experience of a "postmodern space" to be empowering rather than disempowering for students. This, however, created a real design dilemma. Harper and Hedburg point out that "the constructivist learning experience may not look welcoming" to the learner: "It may seem daunting and complex to those who feel ill-prepared for such creative freedom and choice of direction" (1997, p. 4). They identify a whole range of possible problems that result from the capacity of the student to "branch down multiple paths and rapidly change the direction and focus of the learning sequence", including "disorientation", "cognitive overload", and "flagging commitment" (1997, p.5). The dilemma, then, for us was that if we added in the kind of learner support that would seem to be indicated to avoid these problems, we would be bringing order to the chaos, minimising the confusion, and restoring equilibrium where we had sought to cultivate disequilibrium. In other words, our learners would not be getting the very experience (of frustration) which would form the basis of their understanding of postmodern knowledge.

Our only real imperative was that the students reflect on the ways in which they interacted with the site, and thus identify the ways in which that interaction differed from interactions with other (educational) sites and other texts. As Wulff points out, "one purpose of reflection is to provide the necessary space for learning and for the development of knowledge at a deep level" (2000, p.151). Some reflection could be facilitated, we felt, simply by making students aware of the ways in which they interacted with the Website. Accordingly, one of our random links directed students to make a note of which links they followed and the order in which they followed them, as well as to estimate roughly how much time they spent at each site (with a codicil to the effect that there was nothing punitive about this—they could spend as little or as much time at any site as they wanted). Further reflection would take the form of a group discussion: we gave the students a choice of questions focusing on the experience of navigating the Web site, and asked them to send a brief response to one of those questions to the discussion list some time during the week allocated to this module.

One of the reasons that we felt this minimal level of "scaffolding" was warranted was the context in which students were encountering this module. Their expectations of the kind of learning required by the course were formed by the more conventional modules which preceded this one. This had the benefit of making the impact of the unstructured labyrinth of Module 11 much more dramatic—students could immediately compare their experience of more traditional modes of knowledge as exemplified in this course with their encounter with "postmodern" knowledge. But it also meant that some guidance in how to deal with this sudden departure from the norm was required. Students had not had an opportunity to build up any of the skills that might be helpful in dealing with a less structured learning environment, so it seemed only fair to give them a couple of signposts, however obscured. We kept in mind, however, that students were likely to be familiar with the anarchic space of the Web—in fact, our intention was to prompt them to reflect on how anarchical Web-based knowledge is compared to other forms.

Generally speaking, of course, anarchy is not a quality that is much cultivated in education, despite the great rush towards online learning and the embrace of hypertext such a rush would seem to imply. Much online learning seems to seek to minimise and contain the explosive potential of hypertext—its extraordinary capacity to create disequilibrium. However, if we see disequilibrium as a key factor in learning, as constructivism suggests, it may be possible to make much more use of hypertext, and to be much less cautious about its potential for proliferating meanings, possibilities and learning pathways. Such uses are necessarily going to be problematic. Usher and Edwards suggest that a postmodern text is one that follows more the contours of desire than of reason (1994, p.3). How does an instructional designer cater for the contours of desire? How does a multimedia developer build such a site? How does a student find in it the contours of their own desire? Even more to the point, how does a lecturer assess those contours? And how does an external quality review board determine their quality? Nevertheless, I would suggest that, in true postmodern spirit, these complexities should be celebrated rather than feared, and the potential richness of the learning experience offered by hypertext, particularly to humanities students, should continue to be explored.

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