

# ***Cultural Ecologies in Online Education***

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## **Abstract**

Provision and uptake of online education continues to expand as internet access becomes easier and geographically more widespread. Nonetheless many providers continue to present courses using delivery formats that seek to resemble, electronically, a model of educational practice familiar in North America and Europe. Subsequent attempts to manage cultural difference in cross-national courses online have relied on understandings derived from theory that equates nationality with culture. This paper proposes an alternative way of looking at the online education environment (especially the role of the technology used to deliver it), by using an ecology metaphor and reviews the discussion by applying emerging themes and arising ideas to two case studies – of an online class and of an online workspace and informal repository for tutors

## **Keywords**

Culture, cultural ecology, technology, software, delivery platform, online classroom

## **Context**

Learners can now not only access education 'anywhere, anytime' that they can find a place to access the Internet - as early providers boasted - but with the aid of mobile phones, PDAs, and other wireless devices they can also find it while on the way to or from 'anywhere' too. Furthermore, they need not be simply information receivers either, with the aid of Web 2.0 applications learners themselves can create independent, user controlled, online spaces without need for offline resource support. Use of these spaces continues to be extended further by means of the plethora of access points available wirelessly via mobile phone networks once mobile devices are able to process educational programmes. Areas of the developed and developing worlds where electricity or telephone resources are limited increasingly gain access as a result. Within all these spaces there lies the possibility for learners to generate their own content too.

Despite this proliferation of technologies, users and cultures of use (Thorne 2003), the basic structural design of the majority of institutional learning systems is still based on a particular design of face-to-face learning derived from North American and European educational practice. This will often mean that the delivery platform used by institutions as an interface between learners and content will mimic a face-to-face classroom. First entry online will be into a whole-class area designed to be facilitated by a single teacher and from which access may lead to separate areas for occasional small group or seminar work (each area labelled much as might be in a physical learning environment); there will be strict controls over which areas can be written to by each identified category of user (e.g. student or tutor) and formal systems for submission and recording of individuals' assessment material. Undoubtedly part of the reason for a persistence of this model is equally entrenched assumptions about how learning and education are done such as the belief that it is not the learning that has changed, merely the way that the learning is delivered. Or, that if learning is the purpose of the environment, then that learning must of necessity involve the transmission of some factual (to be memorised) content between a specialist (teacher) and a novice (learner). Generally, less attention will be paid to any role that the technology in use may have in the learning/teaching process, than will be paid to the actual subject content. It is also likely that the educational institution online will have a vested interest in maintaining a particular version of doing education that is easily understood by potential users of its facilities – would be students and their families – in order to offer reassurance and add credibility to their position in the education market.

Traditionally, issues of culture, such as those discussed above and, for example, like the increase in the number of culturally mixed classes arising as a consequence of the introduction of online education, have been explored through frameworks which equate culture with nationality (Hofstede, 2001; Hall, 1959

&1966; Hampden-Turner & Trompenaars, 2000). But, as I have argued elsewhere, (Hewling, 2005) essentialist concepts such as nationality are less than helpful by themselves. Characterising individuals culturally as homogeneous microcosms of particular (different) nation states belies the complexity and significance of individual difference and experience in the social process of being human and of learning. These nuances are more usefully served by conceptualising culture as 'not an experimental science in search of a law but an interpretative one in search of meaning' (Geertz, 1973), an 'active process of meaning making and contest over definition' (Street, 1993).

Furthermore, prior cultural experience and knowledge are not the only things that determine how students approach learning online. In the online context seemingly familiar elements such as language may behave differently – in general it is text-based language which is used to facilitate interaction online, words without the benefit of accompanying gestures familiar from the face-to-face class. And, time, online, becomes a tool to manipulate relationships in new ways. This is mainly an asynchronous world, not just across time zones in cases where the class is globally recruited, but also in response to individual preference and circumstance within a single geographic location. In the online environment participation means that learners may actually remain invisible for any or all of their time in class since they will appear to others only when they make an electronic mark (Kaplan, 1995) - perhaps by posting text messages in order to interact with colleagues - although their existence may be sensed in other ways at other times. Asynchronicity also facilitates the persistence of interactional activity - at least for the duration of the course. Interpersonal exchanges such as discussion board postings may continue to be available for participants to view throughout later discussion in a way that is not possible in transient face-to-face interaction, and the facility to review and reflect may assist learners to construct knowledge in a more meaningful way (Cannone-Syrcos & Syrcos, 2000, p.175).

Equally, there are entirely new elements actively involved in interaction, differentiating it from face-to-face classes, familiar or otherwise, and presenting challenges for those wishing to understand discursive practices online. In particular, the role of technology itself - specifically the course delivery platform or the software being used to facilitate online participation - is influential. I shall now look in more detail at how one of these new elements, technology, an apparently passive element in online education, operates in practice as an active and evolving element in the doing of two online education settings. I will then propose an alternative way of looking at the online environment (and especially the role of the technology used to deliver it), by using an ecology metaphor and I shall apply emerging themes - and ideas arising - to these two case studies

## **Case study one – a Blackboard class**

This was a class of masters level students studying open and distance education entirely online by means of a Blackboard delivery platform which housed subject content materials – chiefly downloadable texts – as well as offering a number of discussion boards for the exchange of ideas and, separately from the main discussion boards, boards for the sharing of small group and individual course related activities. Yet another separate area provided synchronous text 'chat' discussions and another link allowed participants online access into the University library. Data collection methods and analytic techniques such as content analysis of student messages, analysis of online activity logs, and one to one interviews with students and tutors, were used to investigate culture in this class (Hewling, 2006).

Students in this class drew on concepts and understandings from face-to-face (f2f) education environments to describe and explain their online experience, making direct analogies between online events and occurrences and those that were familiar to them from f2f whilst also grappling with new ways of being and understanding. Within the class particular practices, for example the way messages were addressed and styled, evolved over time; one would student model new behaviour from another, or from a tutor. The existence of a distinct institutional culture was apparent when participation patterns were examined in relation to another similar online class in another institution (Goodfellow & Hewling, 2005).

Interpreting technology, however, was problematic. Many students assumed that their previous, experience of computing and other online environments would prepare them for the online class but their prior knowledge was, in practice, of limited effectiveness since the knowledge required went well beyond

technical skills. In fact technology responded to use by students in such apparently inconsistent ways that at times it seemed to have a mind of its own. This was partly to do with the server set up at the University which meant that content and messages were held on four different servers globally. These were only synchronised intermittently so it was not unknown for students to see an online conversation one minute but find it gone again shortly afterwards just at the point that they were ready to contribute to it, but this was not the only explanation. There were various technical – as in hardware and software – issues and failures, e.g. server maintenance, ISP download speeds, mechanical failure etc. but there was also an overriding issue of control – or lack of it. There was only limited potential for participants to negotiate with many technical functions in the online class; e.g. students overwhelmed by the number of messages they saw on the discussion boards had no way of filtering them - by topic for example - to suit their own needs. They could opt to display only new messages, but message body content could not be previewed before full display, and unless the authors of the new messages had amended the title lines to make them unique, many messages seemed to have the same title despite their content being different. Discussion board messages, having once been displayed on screen, reappeared every time the board was displayed - they could not be erased permanently, just 'deleted' in terms of being 'marked as read'. Attempts by users to adapt the platform to their own needs and preferences were futile; control was not in the hands of those to whom it seemed to have been given (i.e. students).

There was frequently confusion in the minds of the students over the authority relationship between the university and the delivery platform. There was good reason for students to see them as synonymous – the university had, after all, chosen the platform to deliver its courses; it is the online public face of the university. However, given the platform configuration and, consequently, the way it interacted with other elements within the class, it needed really to be seen as being a separate, and often uncontrollable, force in its own right. This was not because it was disconnected from the university's control but because it could only function with the collaboration of multiple inputs, the combination of which was a) variable and b) beyond the control of any other single element present in the class. This was something that it was hard for students to understand.

## **Case study two – the PROWE repository project**

The Joint Information Systems Committee (JISC) PROWE project ([www.prowe.ac.uk](http://www.prowe.ac.uk)) created two online community workspace and file storage facilities (informal repositories) at the UK Open University and the University of Leicester to allow distance tutors in each institution to develop, store and share materials for professional self-development. The workspaces at each location used different software but offered broadly similar facilities including blog and wiki spaces and the possibility of creating groups to share resources and, potentially, to re-version and/or develop new materials if users wished to do so. Materials developed could be stored and shared amongst tutors and, in the case of the OU storage, all materials needed to be labelled with access permissions at the point of uploading.

Structured activity was virtually non-existent in PROWE, users determined how much or how little they used the facility; this was a very informal environment. And, this context was experimental - the environments had a fixed lifespan although at the University of Leicester the software was integrated with other university systems and there was some continuity of use. In fact the PROWE project activity generated a huge interest in blogs and wikis across the UoL and has had a noticeable longer term impact. Both the environments operated with the intention that they were about sharing and that by forming communities of practice tutors, who had little opportunity (being involved in distance teaching) on a day to day basis for interaction with each other, would be able to support and provide professional development opportunities for and amongst themselves through use of these environments (Hewling, 2006).

PROWE users ranged from the highly committed who went to great lengths to see what they could do with the system through to those who barely entered the environment and never contributed anything. Some complained that the system software was to blame for their non-participation since they were not familiar with it. Even the more enthusiastic users found difficulty at times working out how the system operated and cited 'technical' problems. There was an expectation amongst many users that either their previous IT skills would help them use the new environment or, based on past experience of new systems in the university, that 'the system' would be supported with a 'help' facility, training etc. in order to help

them use it. There was indeed a bespoke user manual in online and hard copy versions but in fact few tutors used it. There were many complaints that the system was not intuitive enough but there was also only limited commonality in users' descriptions of what might make the system more intuitive.

## Discussion

Technology is not neutral or passive in either the online class or the tutor workspaces. It is an active participant. Its interactions with other participants online lead to unpredictable results. The net effect of its inconsistent behaviour is to offer the impression that technology has agency. This might imply that it has some kind of free will but, in fact, the appearance of agency is more to do with random acts by different tools, functions etc that users club together under the single banner of 'technology'. In the class, for example, participating in discussion by posting a message is not just the technology of creating the message and pressing the button to send, it also includes how the software was designed, how well the server is working today and, even, whether or not the electricity stays on throughout the activity. Technology is not a medium through which activity automatically happens but is an integral part of the cultural activity and evolution of the environment. Very little of what 'technology' does in the class or in the workspace can actually be accurately predicted. There is little theory presently in the field to help with understanding the implications of this situation, modelling such situations as static as PROWE at first attempted to do was unproductive and an alternative had to be found (PROWE/Hewling, 2006).

The first attempt was to use Actor Network Theory (Latour, 2005) in which the idea that in any network (in this case the group of elements that make up the online education environment) all human and mechanical elements 'may be regarded, in different ways, as actors – entities that can act (or fail to act) to support the network as a whole' (Cornford et al., 2002, p.174). All are participants in maintaining the functioning of the network such that 'any of the elements in the network might cause the breakdown ... In short all these elements have to work together' (ibid. p.175). However, although all the players in the environments considered here may function at the same time they do not necessarily work together, in the sense of co-operating or supporting each other, in fact, quite the contrary.

In the case of PROWE the more flexible metaphor of an 'ecology' was found the most useful tool for understanding the working of the environment, drawing on the work of Nardi and O'Day in information ecologies (1999) which suggests that there are certain key characteristics of ecologies such that an ecology is a system, 'marked by strong interrelationships and dependencies amongst its different parts' (p.51). These parts may be very different but they are closely interconnected and develop in relation to each other, 'change is endemic' (p.51). Using this metaphor PROWE activity was seen to involve very complex and multifaceted connections and intersections between different parts of the environment. Any activity or change for one part had a knock on effect for others.

The ecology metaphor also suggests that an ecology will exhibit 'diversity' (p.51) – of species and within species. In online education these 'species' would include tutors, students etc. and within, individuals and group of individuals. In the case of technology a species might be software and different programmes or tools the diversity within. Ideally all these should work in a complimentary way but Nardi and O'Day also offer the idea of 'coevolution' (p.53) to talk about the way in which different activities and species have to evolve in relation to each other, seeking perfect harmony but not always succeeding. They also offer the concept of a 'keystone' species, a species which is crucial to survival of the whole system (p.53). These may not always be the biggest, most obvious species; indeed, according to the roles that individuals are playing at particular times species may alternate the role of keystone. In PROWE keystone behaviours were demonstrated by all the main participant species at different times and in different operational situations and interactions. An interactive model of these as initially mapped in the project can be found on the PROWE website at <http://prowe.ac.uk/ecology.htm>

## Moving forward

Online learning environments cannot easily be understood by theory drawn from, or based upon, the f2f classroom. However similar content, or learning agendas within environments may be, there are fundamental differences in how classes and workspaces online create and sustain themselves, in the

cultural environment they generate. Technology is not simply a tool for delivery of content but, like other participating elements, is actively involved in the culture generation processes. Adopting an ecologies approach in order to examine the complexity of relationships and processes at work in online education environments offers potential and merits further attention by research.

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