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“Give me a Website and I’ll Wipe Out a Rainforest”: Student Constructions of Technology and Learning

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Abstract: This paper will draw on a two-year case study of postgraduate use of online blended learning resources. The paper will illustrate the contradictory and often counter-intuitive patterns of student use of technology in the production of academic knowledge. The paper explores four key analytical themes: the use of technology in the management of the postgraduate student identity, the role of technology in configuring existing identities and practices, the contradictions embedded in students’ understandings of their own technology use and the ways in which technology is implicated in the (re)construction of academic work. The paper concludes by highlighting the materiality of technology use and by suggesting that an empirical understanding of student identity and the cultural contexts in which learning takes place enables us to deconstruct the student as ‘user’, to trace complex and shifting processes and patterns of use and to gain an understanding of how students can benefit from technology in Higher Education.

Keywords: Student Identity, E-learning, Blended Learning, Case Study, Postgraduate Students, Technology Use

Introduction

HISTORICALLY TECHNOLOGY IN various forms has held forth the promise of improving education and the rapid growth of new information and communication technologies (ICTs) has been accompanied by a widespread interest in their applications for teaching and learning. Once the domain of distance education, web-based and web-enhanced learning is seen to be transforming the landscape of higher education, challenging traditional conceptions of the academy, creating new sites for knowledge production and consumption and opening up new virtual spaces for learning (Cheong, Park and Dutton 2002, Dutton and Loader 2002, Kazmer and Haythornthwaite 2004).

Campus-based institutions are increasingly supporting face-to-face teaching with web-based materials, broadly defined as blended learning, and a growing body of research has documented the value of these kinds of flexible, constructivist learning environments (Lebow 1993, Radford 1997, Chambers 1999, Tam 2000, Boyle et al. 2003).

However, while advocates and critics debate definitions of blended learning and its technological and pedagogical potential (Oliver and Trigwell 2005), limited empirical attention has been paid to holistic understandings of how students, as users, are enabled or constrained by these innovations (Sharpe and Benfield 2005). In particular little consideration has been given to the ways in which ‘academic’ and ‘everyday’ patterns and practices of technology use interact (Given 2002).

Focusing on the use of web-based resources to support campus-based learning this paper explores

student use of a blended learning environment as part of a conventionally taught postgraduate course. In developing an analytical account of the realities and practicalities of use I suggest that students engage with technology in complex and often contradictory ways. Technology is embraced as a tool for managing and defining the academic activity of ‘being a Masters student’ and needs to be understood as a social and intellectual construction. Student experiences of using online resources are not inextricably tied to and mediated by the technological but are shaped around existing work patterns and practices. Through technology academic work is reframed and re negotiated and blended learning resources act as symbolic devices and as virtual representations of ‘doing work’.

Researching the Blended Learning Environment

This paper draws on data from a qualitative case study evaluating the use of blended learning materials provided for a postgraduate course in social research methods as part of a Masters programme at a UK university. Course lectures were supported by web-based materials hosted on a custom-build website. This blended learning environment provided online readings, exercises to prepare for and to follow up on lecture content and spaces for synchronous and asynchronous interaction and group work. Qualitative fieldwork followed 2 cohorts of students over 2 academic years and a series of in-depth interviews were conducted with 26 students. Following the principles of Grounded Theory (Glaser and Strauss 1967) an iterative, theoretical and comparative



sampling and analysis technique was employed which focused on emergent analytical themes and relied on constant comparison across cases in the development of analytical categories (Ryan and Bernard 2003, Strauss, A. & Corbin, J. 1990).

Respondents ranged in age from 22 to 56 with 16 of the students registered for one-year full-time and the remaining 10 students registered on the two-year part-time degree programme. In a division which broadly represented the demographics of the course 19 students were female and 7 were male. In addition to their registration on the degree program 18 of the students were in some kind of part-time paid employment and, of these, 8 had access to and were able to use a networked PC in their place of work. Of the students without workplace Internet access, 7 had access in their homes while 3 students had access only to campus provision. Of the 8 students not participating in paid employment 2 had access to a networked PC in their home while the remaining 6 students relied on campus provisions, friends' computers, paid access in Internet cafes or public libraries.

The sample of postgraduate students all cited weekly use of the web-materials and were enthusiastic in their engagement with course materials presented in this form. While a cursory analysis could suggest that the case study represented an example of the kind of unproblematic and beneficial use of digital resources cited by constructivist models of technology enhanced learning (Lebow 1993, Radford 1997, Chambers 1999, Tam 2000), a grounded examination of the data highlighted complex and often contradictory patterns and understandings of appropriation. It was not evident that provision of this kind of online resource resulted in meaningful utilisation within the framework intended, rather, use was underpinned by multifarious structural and contextual demands and understandings.

The Convergence of the 'Academic' and the 'Everyday'

A key emergent theme in the analysis of data related to the respondents' perception of their identity as 'student' and their understanding of the Masters degree more broadly. Research suggests that postgraduate students enter or return to higher education with socially and economically shaped motivations and concerns about what they want to gain from academia: perspectives which shape their experiences as students (Haywood 2002). An important element in understanding their experience of higher education is a recognition of the ways in which the activity of 'education' is embedded in their daily lives rather than being viewed as a separate and distinct sphere (Given 2002, Haythornthwaite and Kazmer 2003).

While a balance of academic and everyday life is required of all students it places particular demands on mature students, reflected in a literature which focuses predominantly on the barriers and conflicts faced by mature students in dealing with their distinct 'academic' and 'everyday' realities (Given 2002). For the postgraduate respondents their identity as student was one of multiple identities (for example as parent, partner and employee) and the Masters degree was approached as a short term, highly concentrated period of work, coupled and juggled with this wider set of identities, responsibilities and concerns. By necessity the respondents' identity as 'student' required and demanded a degree of fluidity as academic work time was situated in the wider context of their lives. This created different social worlds within which the students must operate and these social worlds were not static or isolated but shifted, interacted and impinged on each other. It was in this interaction of the everyday and the academic that the respondents defined the blended-learning environment as 'invaluable'. The students used the website as part of a strategy of coping with the demands of academic work alongside their other social worlds and identities. The ability to engage with course materials online was understood by the students as a way in which to manage and support academic work and acted as another social world in which to juggle responsibilities and obligations:

"For a couple of hours at home I'm a student, then I'm a Mum in the afternoon, then for another couple of hours in the evening I'm a student again, then I might be talking to an old work colleague and I've got my work hat on, online it's quick and easy to just get back into the student hat." [Katherine]

In line with Given (2002) I argue that a holistic view of the student experience is required in order to understand the ways in which technology can enable new structures and forms of learning. In re-framing use of technology in the context of students' academic and everyday realities, barriers or challenges, like the juggling of multiple roles, become structural *opportunities* when technology is conceptualised as an organisational tool linking separate social worlds. These narratives of convenience find support from literature that illustrates the ways in which the symbolic and social meanings and roles given to ICTs are shaped by the contexts of existing routines and practices (Silverstone, Hirsch and Morley 1992, Selwyn 2003).

The respondents consistently cited the main benefits of the resource as convenience and ease of access, relieving some of the pressures of time in the balance between their academic, domestic and employment responsibilities. Students focused on the

benefits of being able to access necessary resources during the week without having to travel onto campus to use the library: the majority of students living outside of what they defined as a reasonable catchment area for the university. The web resources were useful in that they reduced the 'jobs' that they had to complete in their limited time available on campus outside of teaching hours.

For some of the students this ease of access was related to their existing working practices. Of the students able to access a PC during their paid employment use of the website was integrated into existing working patterns. This use, in line with the fluid nature of their identity as student, allowed respondents to carry out academic work within the context of their working day: use that was either encouraged by their employers or time that they felt they could 'get away with'. The importance of this ability to multi-task was again articulated in terms of convenience and ease of access to required academic resources outside of allocated 'university time':

"I always work with a computer screen in front of me, I'm never anywhere where there isn't one, home or work, so it's very easy for me. I can get stuff I need when I'm not actually on campus or in 'student mode'...Even that little bit of time saved makes life easier, I suppose the biggest thing is the convenience factor."
[Julia]

This kind of blurring of boundaries between academic work time and employment work time, in addition to the multiple roles juggled by students, reflect what Gant and Kiesler (2001) have described as a differentiation of the social meanings of time. Gant and Kiesler argue that wireless technologies enable people to cross space, time, activity and social networks, blurring the boundaries between work and personal lives and restructuring the social meanings of space and time. Technology reduces temporal constraints and muddies the separation of work and personal lives eroding bounded social practices (Gant and Kiesler 2001). Similarly, for the Masters students, the boundaries between academic work, employment work and leisure time were eroded by the demands of the degree programme and the web-based blended learning resources enabled further disintegration of these boundaries.

"I don't feel that I have the luxury of devoting myself to one activity and having the web content means that I can blur my student life with the rest of my life and while that's probably not terribly healthy either it allows me to manage everything I need to do to get through it [the degree]." [Rob]

This assimilation of technology into existing working practices suggests a form of technological appropriation that is consistent with literature that advocates the benefits of digital resources as part of a programme of 'anytime' effective, distance learning (Kearsley et al. 1995, Dearing 1997). Although the Masters degree was not formally a distance program many respondents lived and worked some distance from the university and spent limited time on campus. As a result the students appropriated the website as an easy and convenient way to access resources and incorporated use of the website into their existing working practices, citing the benefits, convenience and importance of this flexible access.

The Contradictions of Convenience

Convenience was consistently cited as the key benefit of the website, yet there was an inherent contradiction in the students' conceptions of convenience and the reality of their use of the resources. While the kinds of flexible patterns of working outlined in the previous section are perhaps unsurprising, more analytically interesting was the appropriation of the website by those students who did not have access to a computer at work or at home. Those students without direct access outlined rather counter-intuitive and convoluted means of accessing the resources in their creation and construction of wider networks and contexts of access that involved husbands, friends, partners, colleagues and frequently several computers:

"Well I don't have the internet at home, so I usually go to the internet café near me, it's not very studious because obviously it's a café, but it's fairly convenient for me to look things up, I don't print there as it would cost too much so I find what I want then email it to myself here [at university] and then print it off here, it's easier than coming in all the time and saves me time, it's pretty convenient, if a bit longwinded." [Kevin]

Despite the complexities of their access and the broad networks involved the availability of the online resources was viewed as convenient and access perceived as unproblematic, yet common understandings of access and convenience do not easily apply to the more dynamic model outlined by the students. Access was not defined as a one-on-one with a computer but was conceptualised more broadly as remote and via other participants. Those respondents without a PC consciously constructed mediated forms of access:

"I get my boyfriend to look at stuff at work, I'll send him URLs and things, he's got easy access

and his boss isn't too bothered about him using the internet for other things, which is just as well, so if there's things that I want to download then I send him an email with the link, get him to open it and print it out for me and then he bring it home and I can take it with me on the train and read it. All very complicated but it works for me." [Vicky]

While literature warning of the creation of 'digital diploma mills' (Noble 1998) presents an image of the 'wired' student at their desk, readily drawing from online resources in the production of academic goals, this image of the networked student bears little relation to the respondents' experiences of utilising these resources. For the respondents 'convenient' access and usability was actually embedded in other social spaces and other social relationships. This mediated proxy access highlights a need to problematise understandings of technology use and to recognise use as a complex construction. Setting aside debates surrounding access as a political and economic issue, this points to the analytical danger of assuming access as an unproblematic 'fact'. As Miller and Slater (2000) suggest, in their insistence that the 'virtuality' of the internet requires explanation as a practical accomplishment, the myriad of off-line contexts and structures that shape people's experiences of the internet need to be understood as continuous with and embedded in other social spaces.

In this sense we need to think about the internet as both produced *and* consumed and in an evaluation of what educational technology means to students we must understand the ways in which they structure and define their access. Equally we must acknowledge the non-technological artefacts and relationships which shape their experiences of technology use. As Wakeford (1999) argues:

"Technology cannot be equated with the computers alone...technology is constituted by both discursive practices and alliances of materials and meanings...the technology exceeds the boundaries of the machines...a range of encounters and artefacts which had not previously been recognised for their alliance with the technological." (Wakeford 1999: 196)

For those students without direct access to a networked PC or 'the Internet' their use of the technology and of the online resources was constructed in terms of networks of accessibility and their own understandings of what access to the materials constituted. These processes of production and construction therefore *became* their experience of the technology in an educational context. This challenges many of the assumptions in the literature about how students use digital resources and presents a different reality

of patterns of use: illustrating the importance of understanding the varying contexts of use and of questioning narratives of a digital divide as a primary barrier to this use.

Producing, Consuming and Constructing Academic Work

All of the students described their primary use of the resources as downloading and printing journal articles and book chapters provided online as PDF files. The printing and collation of the readings from the site formed the basis of the students' appropriation and occurred irrespective of their ability to directly access the website. The respondents readily invested their own resources to print out the readings, either at home or through the networks of paid and unpaid access outlined above and referred humorously to the economic and environmental cost of their printing habits:

"The irony's not lost on me - give me a website and I'll wipe out a rain forest - I've got a far bigger pile of paper for this course than anything else, which is strange in many ways because the website's always there, it's not like I have to take it back to the library, but I'm still printing off, I think it's because I like the way it's almost like I can make my own book of the stuff I want to read." [Marion]

Rather than engaging with the website as a technological medium per-se it was utilised as a way in which to compile an offline, paper facsimile of the online content. Pollock and Cornforth (2002) suggest that there is little evidence to show that learners find electronic study resources appropriate to their needs, citing examples of student requests for disks or handouts from online course companions. They suggest that the success of a technology is reliant on a functionally redundant physical token. The enthusiastic utilisation of the website by the postgraduate students sampled does not indicate that the electronic resource was wholly inappropriate to their needs, but in light of respondents descriptions of a growing mass of printouts the need to invert Pollock and Cornforths' suggestion is clear; the *website* became redundant as the students created their own functional *physical* token of the technology:

"Now we're nearing the end of the course I'm not really using the site as much, I've already downloaded and printed out the stuff for the last couple of weeks and got that all organised so there's not really the need, obviously I might go back for some stuff, but basically I've got hard copies of it all now." [Paul]

However, it would be premature to assume that the provision of paper copies of the website content would have been viewed as a comparable resource, or to reject the notion that the technology itself held some inherent value as a medium of delivery. In an interpretation of the students' understandings of the significance of the website as a medium their reflections on their own working patterns provide some insight. The students' desire for a physical hard copy of the blended resource is in part created by their familiarity with working with physical texts and readings from the website, once printed, were used as part of existing working routines. More explicitly the annotations, notes and cross references added to the printed copies formed an integral and fundamental part of what the students defined as 'doing' academic work.

The students' engagement with the website as a technology can be understood in terms of these definitions and categorisations of different kinds of academic work. The process of downloading, printing and then working with the readings became part of their construction of academic work for the course. In the same way that the respondents' constructed 'access' and 'the Internet' in the process of their appropriation, they also constructed definitions of 'work' which shaped the ways in which they used the blended learning environment as a medium. 'Doing work' included accessing resources from the website and then personalising these resources in the process of meeting coursework requirements. In this sense the website, what would commonly be defined as the infrastructure of work, became part of the work itself.

For the students, the importance of the website as a technology was as part of this process of 'doing work'. Accessing the site prompted a sense of engagement with the course and the students drew on emotive language in their descriptions of the importance of feeling involved and connected with their academic identities in the light of their multiple roles and responsibilities as postgraduate students. The website therefore acted as a symbolic device, a marker and a representation of doing work:

"It has become a web-space that acts as a mind space really. The actual process of printing and then reading and working through stuff I've printed out is a form of doing work and the collation of online materials offline is absolutely part of that process. Even though I know that this is a rather nebulous connection it's meaningful for me." [Louisa]

The student understandings of the technology as a resource and as a medium illustrate the distinct differences between the design and intended use of a technology and the realities of its actual use, emphasising

the need for a holistic understanding of patterns and practices of producing and consuming academic knowledge.

Blended Learning and Materiality

The postgraduate students embraced the virtuality of the technology in their complex definitions and constructions of convenience, accessibility and flexibility, yet their use remained grounded in producing 'real', offline, material versions of the online content. In materialising the virtual in this way the students were not privileging 'real' or offline materials and the website was not viewed as inadequate or insufficient, yet the processes of making the virtual real dominated their use and their understandings of the resource were based on ideas about materiality.

In drawing on notions of virtual and real as a broad structure for analysis I follow a stance of 'academic scepticism' concerning the terms and their use and emphasise the need to deconstruct and explicate the hyperbolic rhetoric which permeates much of the academic and popular debate concerning ICTs (Woolgar 2002:11). One major implication of positioning the virtual in opposition to the real is the inference of major and profound change and transformation, which prompt responses of uncritical enthusiasm and cautious suspicion and scepticism (Woolgar 2002) what Crang, Crang and May describe as the two sided cult of authenticity: both a celebration of virtual replications of the real and a criticism of the virtual as a poor substitute for the real (1996:6). The assumptions and implications that underlie discussions of the virtual and the real obscure the range of experiences that the terms encompass and claims about the virtual as a definable social space or, conversely, as a poor imitation of real experience, have limited analytical value.

In the context of technological innovations in higher education these opposing responses are an accurate representation of the pedagogical hopes and fears outlined in much literature and debate, however, a holistic focus on the realities of student use illustrates a much less dramatic and less transformative empirical reality. In the context of student use it is of more value to understand the virtual and the real as technical, temporal, contextual and social constructions.

These understandings go some way towards developing an understanding of the experience of learning to learn online. Different students are likely to engage with the resources available to them in a variety of ways and indeed students vary dramatically between and within institutions and across academic disciplines. However, highlighting a holistic picture of the complexities and nuances of student use helps provide a framework with which to think about

pedagogically effective blends of online resources and face-to-face provision and contributes to research which aims to understand the structural, social and

cultural contexts which shape new teaching and learning practices.

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