Learning nests and local habitations: Locations for networked learning

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Abstract

In this paper, we return to two descriptions of the ways that learning is located in technology enhanced environments. The idea of a local habitation arose in the context of an ecological view of the way people shaped new technologies for their own needs and it stood in opposition to the idea that new media and technologies led to inevitable consequences. The second term learning 'nests' arose out of research that focused on student study-bedrooms. Both terms were useful in humanising the relationships between new networked technologies and their users and locating the students and teachers who made use of them.

We revisit the idea of learning nests understood as a local habitation using data collected as part of an ESRC funded project examining The Net Generation encountering e-learning at university. The report is based on 19 first year undergraduate students who took part in a cultural probe exercise. During 24 hours they received SMS text messages and recorded answers to a fixed set of prompt questions either using a small hand held video camera or using a small notebook.

Our findings illustrate how students give meaning to the array of technologies and services they are presented with. They show that the technological landscape has changed markedly in the past 10 years but that student practices do not seem to have moved as quickly. Students still use the kinds of learning spaces they used 10 years ago despite the increased availability of network access to the Internet and the increased ownership and availability of mobile devices. An area where there has been significant change is in the social character of students' engagements with networked technologies and the integration of the mobile phone, social networking and other social technologies into the everyday fabric of student life. However there is little evidence of significant change in student practices in terms of the adoption of mobile network access from this research and this should lead to caution in making predictions of change.

Keywords

Net Generation, Digital Natives, student experience, Higher Education

Introduction

> And as imagination bodies forth
> The forms of things unknown, the poet's pen
> Turns them to shapes and gives to airy nothing
> A local habitation and a name.
> (Theseus Act V Scene 1 A Midsummer Night's dream, W. Shakespeare)

Nardi and O'Day (1999) use this description from A Midsummer Night's Dream to introduce their conception of locality in the context of an ecological view of technology. By local habitations they mean settings in which individuals have "an active role, a unique and valuable local perspective, and a say in what happens" (Nardi and O'Day 1999 p ix). The emphasis in Nardi and O'Day's account is one that has a strong resonance with networked learning in that the stress is on connections and action in those "spheres where we have knowledge and authority – our own information ecologies" (Nardi and O'Day 1999 px). This located and relational view of technology identifies the way in which technologies are multi-functional and can have the same apparent configuration whilst having different meanings for a variety of populations that make use of the technology. Their claim is that local participants construct the identity of technologies through their patterns of use and the location of a technology is defined in terms of its position in a network of relationships. The discussion by Nardi and O'Day is focused on the capacity to have an influence and it draws a contrast between most people's distance from national policy and their capacity to influence in their own home, classroom, or workplace. The

approach they take fits neatly with the idea of a meso level of scale sitting between macro social structures and the contingency of local interaction (Jones et al. 2006).

Almost a decade ago Crook conducted research focused on a novel group of students that he described as 'partially virtualised' learners located in a traditional residential campus (Crook 2002 p294). He wrote about students' learning nests from his research investigating the networked study bedroom. Crook was researching and writing when extensive networking of student residences was relative new and much of the rhetoric around the application of digital networks to education focused on the virtual campus and the potential threat to place-based and campus located education. This paper takes the idea of local habitation and applies it to the learning nests that Crook described. The intention is to explore the ways in which networked technologies have impacted on learning spaces in the last 10 years and to investigate whether the rise of mobile technologies in particular has had a significant impact (Castells et al. 2007, Traxler 2009). A second interest is in investigating the role of student and teacher agency in the appropriation of digital and networked technologies and contrasting it to the rhetoric surrounding the ideas of the Net Generation and Digital Natives.

Crook wrote about a technological context that has changed rapidly and the student environment he described is both strangely familiar and somewhat distant. Crook reported that the use of computer based collaboration was modest and the joint activity that took place between students was in their study bedrooms or located around routine social interaction, such as over a meal. He went on to note that almost two thirds of students reported that they discussed work in and around timetabled sessions such as walking between classes and lectures or in chance encounters over the preceding 24 hours. Crook reported that coursework was the main currency of these conversations and lecture notes were the main form of exchange (80%). Formal meetings with staff and other students were rare but both formal encounters and the improvised and unstructured meetings were highly valued. He suggested that the formal use of text conferencing and e-mail for debate was limited. Crook noted that there was little use of the discussion boards around courses and only 5% -7% of incoming email was study related. The heaviest use was of ICQ (an Instant Messenger) to exchange short messages with 60% of networked students reporting heavy use, though Crook suggested that "the use of this tool was largely limited to playful purposes" (Crook 2002 p302). Finally Crook noted that the focus on the networked computer and the single physical site for working through a graphical interface might lead to greater distraction and he noted that the intensive use of a networked computer was not always well focused on the curriculum. The picture was of an education focused on institutional requirements, the lectures, classes and assessment that took place around the supplied technological infrastructure. It is striking that the reported use of technology did not have a large social component and this might contrast with current use of social networking sites and suggests that a revisiting of the context might be of value.

The period Crook wrote in was one in which e-learning was still new and the debates about how networked technologies would impact on learning had a freshness that depended on the rise of the WWW in the mid to late 1990s. This phase of development was of course not the first and it followed a period of excitement that arose almost 10 years earlier with the impact of the Internet prior to the graphical interface and the inclusion of multimedia. Between these two phases there was a shift in the dominant metaphor for learning. The Internet gave rise to early forms of networked learning (Harasim 1990, Mason and Kaye 1990) which stressed communication and dialogue. The rise of the Web and the graphical user interface gave rise to a greater stress on access and the delivery of content (Weller 2002, Ryan et al 2000). Arguably these two approaches are deeply embedded in metaphors for learning and are given a different prominence as each wave of the new technologies arise (Sfard 1998). Sfard speaks about the acquisition and participation metaphors for learning whilst more recently Weller has described two different paradigms in relation to the use of the VLE as the broadcast and communication models (Weller 2007). Crook noted in his conclusions that there was little evidence that the practices of lecturers were strengthening a participatory approach and whether networks were to become a conduit for delivery or an arena for participation would depend on a deeper pedagogic discussion amongst university management (Crook 2002 p307). The development of broadband networks, the increase in mobile technologies and the explosion of Web 2.0 services has led to another step change in expectations and a new educational rhetoric around personalisation and participation. This paper will make a small contribution to this debate by examining the current and developing practices of first year students in place-based universities

The research context

This paper reports elements of a two year ESRC funded project The Net Generation encountering e-learning at university. The paper focuses on one data collected using the Day Experience Method (Riddell and Arnold 2007), although we also draw on some aspects of the interview and survey work that was also conducted as part

Proceedings of the 7th International Conference on
Networked Learning 2010 , Edited by:
Dirckinck-Holmfeld L, Hodgson V, Jones C,
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ISBN 978-1-86220-225-2

of the same project. A summary of the survey findings from phase 1 of the research can be found in Jones et al. (2009) and some of the findings from the second phase of research in Ramanau, Hosein and Jones (2010). The research was conducted in 5 universities that were selected to represent the main 'types' of university found in the English system and access was gained to 14 course areas (in each survey) across a range of pure and applied subject and disciplinary areas (see Table 1 for a more detailed description of universities and courses under study).

Table 1: University types and courses

Universities					
	A	**B**	**C**	**D**	**E**
Location	**Large urban metropolitan**	**Large urban metropolitan**	Large scale distance	**Mid size campus outside small city**	**Mid size with multi-site campuses in small towns**
Course units	**English**	**Sociology (Survey 1/ Social Science Key Skills (Survey 2&3)**	Science	**Modern Languages (2, German and Spanish)**	**Journalism**
	Bio-science	**Information and Communication**	Health and Social Care (Survey 1)/ Social Science (Survey 2&3)	**Computing**	**Psychology**
	Veterinary science		The Arts	**Accounting and Finance**	**Social Work**

The data reported here is largely confined to universities A, B, D and E as these were all place-based and the distance students at university C had significantly different study patterns and usage of ICT for study purposes and in their social life and leisure (see Ramanau et al 2010). Our focus in this paper is on the local habitations of students in place-based traditional universities as opposed to distance mode students.

Figure 1: Day Experience Kit.

The kit students were provided with consisted of a small video camera (Flip or Creative Vado camera) and a small notebook. The students all had their own mobile (cell) phone that we could send messages to. Students were sent SMS text messages over the course of 24 hours. Each student received approximately 11 text messages and the times that these were sent were flexible. Students were asked when they would like the messages to cease at night and then start again in the morning. All students were provided with these questions to answer when they received a text message and as a reminder they were attached to each notebook:

What time is it?
What are you doing?
Are you using any technology and, if so, what is it?
Where are you?

Proceedings of the 7th International Conference on Networked Learning 2010 , Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

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Who are you with?
How do you feel about it?

Each student then recorded their responses when it was appropriate to do so as close as possible to the receipt of the text message. They could do this either in the form of a written response on the notebook or in the form of a video clip, either to record a diary entry on the camera or to video the setting they were in. We received a total of 172 video clips from 18 students. These ranged from 1 clip to 20 clips and one student was unable to complete the task due to a problem with their phone but she provided us with a diary for the 24 hours. The ages of our students varied and covered both Net Generation age students (those born after 1983) and students over 25 at the time of the research.

The survey data

In this short paper we do not have the space to provide a full report of the survey data but a report of the first phase can be found in Jones et al. (2009). We report some headline findings here from the second phase of research. In both phases of research we found high levels of laptop ownership. Amongst the place-based students in the second phase research directly related to the Day Experience intervention 90% of students reported laptop ownership. They also reported significant levels of ownership of other devices (see Figure 2).
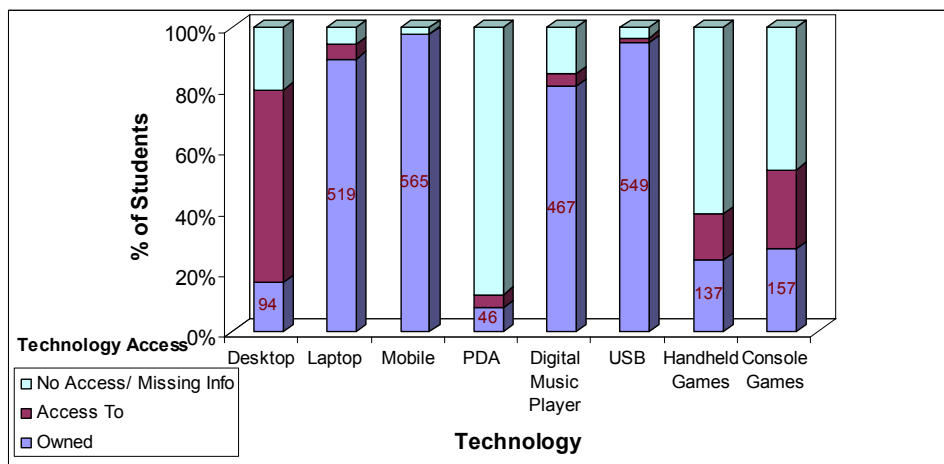
Figure 2: Technology ownership

An issue with some importance in terms of the changed technology landscape in the past 10 years is the issue of portability. Some insight can be gained by examining internet access as 95% (549 students) of the students had personal Internet access 95% (549 students) and 5% of the students (27) didn't have personal access.. However, 68% (395 students) of these students had either wireless or mobile broadband access which would enable Internet access that was not confined to particular locations. For the remaining students, 27% (154 students) had either dial-up or wired-broadband, which meant that they were confined to a particular location.

Table 2: Internet access

	Dial-up	Wired Broadband	Wireless Broadband	Mobile Broadband
Yes	61	444	366	138
No	326	47	112	259
Not Sure	120	56	67	123
Missing	72	32	34	59
	579	579	579	579

From our survey data we can report that students thought that network connectivity was important for:
Keeping in touch with other students (4.5)
The ability to contact tutor (4.5)
Access necessary for study at university (4.6)
(5 point scale with 5 = Strongly agree, 1 = Strongly disagree)

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Interestingly students still thought that access to university computers was still important by their disagreement with the statement "I don't rely on the use of computers at university" (= 1.7). Students also tended to disagree with the negative statements; "I am not clear about how the use of ICT can improve learning" = 2.2; and "I am reluctant to use ICT in university studies" = 1.9. This suggests that students have at least some notion of how ICT use can improve learning and a positive attitude to ICT use in their studies. Finally a second area of significant change, presaged in Crook's (2002 p p302) comments about ICQ is the growth in the use of social technologies such as Social Networking sites, Instant Messaging and the near ubiquitous use of mobile phones for SMS text messaging. Our surveys showed a high use of Social Networking (see xxxx 2010) and in general a high use of ICTs for social life and leisure that accelerated between the beginning of the year and the survey conducted at the end of their first year. Notably only 8% of the students (46) indicated that they never used Instant Messaging.

A day in the life

The Day Experience intervention provided us with an insight into a normal day's activity for a range of first year university students. We have grouped their responses to illustrate the span of the kinds of day we found represented in our data. When we report the data we indicate the student's age, university and the course they were studying as these factors were significant in the responses to our survey questionnaire.

Typical days

The kinds of days that were typical depended upon age related contextual factors such as family and work responsibilities. Older students were more likely to have their days ordered by the kinds of responsibilities they had outside of the university setting. Younger Net Generation aged students were more typically focused around the work of the university and the kinds of social life and leisure opportunities offered by a university life.

Vignette 1. Beth is a young student studying a science based course. Like many students she balances a busy social life that includes sport and a range of leisure activities with academic work. Her study room is a comfortable space with a range of technologies at hand including a laptop computer and a mobile phone. The day moves between different spaces but often within the confines of this room. Arrangements are made on Facebook for sports activities and email is checked for both study and social purposes. The VLE is accessed at the end of a sequence of activities that, despite being a first year student, is already described as a habit that moves from social activities in towards her work.

> Right, I've just flicked on to the internet and I'm just checking my Tiscali e-mails which is the first thing I usually do and see whether anybody interesting has bothered to contact me. Usually there are only Facebook notifications - looks as though there is one from my football team which means I probably will actually go on to Facebook which is never a good idea to see what all that's about. I usually follow the same thing each day, I log on to my Tiscali e-mail see whether anything interesting is on there, usually there isn't. Then I go on to BBC sport because I'm a bit of a sport addict and see what's happening there. Then I check my [University] student e-mails because there's usually a lot more going on there. That could be if there is any lecture changes or exam results out that I need to be aware off. Then I log into [local VLE] and the lecture writing up begins.

> This is the portal home page, got all sorts of stuff on that, my e-mail, [local VLE] my life saver, random announcements that may be of interest to us, not really. Here's [local VLE], if it wasn't for this it would be so difficult because I'd be scrambling down notes in my lectures and I really wouldn't be paying much attention. So thanks for this, it's an absolute life saver.

> I think I've missed the last couple of texts, I've been far too busy playing football need a good respite from all of this hard work. I think I left to go to football at about quarter to seven and I've just got back at quarter past nine, so back to the hard work, I've got to continue with the lecture I was doing earlier. If there is anything.. I need back up I need to actually look that up on the Internet, I just need to look up a few definitions... (Net Generation female studying Veterinary Science University A)

Vignette 2 Helen is a busy Mum. She moves from university to home and then picks up the children. Her early evening is full of domestic work and engagement with her children while they use their own technologies, mainly games. Later in the evening when the children have gone to bed she begins to work in a corner of a

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Networked Learning 2010 , Edited by:
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domestic room that is equipped with a laptop computer and a desk. Work goes on for a couple of hours before bed and includes working online as well as reading for the next day's classes. In the morning Helen goes to the lecture theatre early after dropping the children off and works on her laptop online until the lecture theatre fills up for the first class.

> It's just gone seven o'clock and I've just turned on the laptop ready to start some work. The children are busy on Nintendo DS's. Ok we'll talk again later…
>
> Hi the time now is 20.16 and I've just started work on my CV. The children have now gone to bed so there should be peace and quiet.
>
> Hi its me, I'm still working on my CV the time now is nine o'clock and now I'm getting tired. [Camera moves around the room showing books on a shelf to the left and the laptop in front. As the camera pans right the scene moves from a work station to a living room in dim light with a TV turned on to the rear of the workstation without sound]
>
> Not much has changed from before, still working.
>
> As you can see the fish are going to sleep, it's very quiet. I don't think you can see the dragon who's fast asleep. The television is off, the Wii is off, and I'm still in my corner on the computer. Just put all the washing to dry, made a cup of coffee, and going to start my next lot of work. Everybody else has left me, so I'm very tired now, bye.
>
> The time is now 23.15 …as you can see [laptop screen showing graphs and data] I'm working on cinema attendances and I'm very, very tired now and I'm going to bed in a moment. (Non-Net Generation, female, Information and Communications University B)

Locations

The common locations for all students were dedicated work spaces at their term time home, either within a permanent residence or in a student study bedroom. Students of all ages living at a permanent residence routinely showed either rooms that were dedicated to study or were multifunctional, with a study area and areas set aside for other activities. Other locations were the university library or multi-media centres, lecture theatres and computer labs. Most of the work was reported as taking place in the dedicated study areas at home, with little evidence of work being undertaken using mobile devices (Examples 1 and 2), however there were a number of clear examples of the use of mobile devices away from the study areas (Example 3).

Example 1. Study area in a permanent home address
> As you can see I'm in my spare bedroom, which has got washing, place where I keep my washing, my exercise bike which usually just sits in the corner, my desk which has my laptop and all the current things I'm working on at the minute, my ironing board and a couple of bookcases. At the moment I've only got two bookshelves that I use for my work and this is basically where I spend most of my evenings. Usually two to three hours an evening, depends on what I've got to do. And then some of the, I've got a normal computer downstairs which is attached to a printer, which I print everything off but this is basically at the moment where all my work gets done. (Non-Net Generation, female, Social Work University E)

Example 2 Study bedroom (as the most common situation 2 examples included)
> I'm watching TV still and I'm using the laptop [camera pans around the room and shows a small TV, the laptop with Skype video screen showing a call in progress] and, what else as technology, mobile phone as well, that's the only technology, laptop, television, mobile. I'm on my own and in my student halls and I am comfortable in my environment (Net Generation Male Information and Communications University B)
>
> I'm still doing my homework, it's a different homework this time but I'm using my laptop again, on Facebook and also using MSN to talk to my friends. I've also got like an on-line dictionary in here which is helping me rather than using the book 'cos its much quicker, like a proper dictionary 'cos its much quicker. I'm in my room so I'm surrounded by all my stuff which I like. (Net generation female, German University D)

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Example 3 In a public area using mobile device(s)

> I am currently in the MRL [Multi-Media Resource Laboratory] and the technology I am using as you can see Microsoft OneNote for note taking, Microsoft word and WebCT which I'm currently downloading some assignments off. I'm on my own doing work and the environment I am sitting in is comfortable as you can see, [view of sofa seating with more formal area in the rear of the shot] which is fairly busy as well. I am currently using my laptop for doing my studies and mobile phone for communicating with other students. (Net Generation Male Information and Communications University B)

Interactions

Students varied considerably in the amount of face to face social interaction. All the students were connected and most were connected all the time with contact maintained with other students, friends from home and the resources needed for study purposes. Some students spent most of the 24 hours without any face-to-face contact with others but even these students had contact mediated through one or other communications technology such as Social Networking Sites, SMS text messaging, or Voice Over Internet. In some cases there were examples of social interaction within student study bedrooms around computers. These were often face to face interactions with the computer device forming a point around which social interaction took place. This could be games playing, Social Network site interaction, photographic images or work related items.

Example 1 Alone

> I am practising for my theory test that is tomorrow at ten thirty pm [view of laptop]. I'm sitting in my room and I'm playing, actually I'm not playing, I'm using my laptop for these questions. [Background noise of streamed radio from laptop] and I was using, I did just use my phone to text my girlfriend and I'm sitting in my room, that's about it so far. But I'm very nervous about my theory test (Net Generation Male Broadcast Journalism University E)

Example 2 Mediated contact

> I am sitting at home [study bedroom]. The technology I am using is a laptop of which I am on Skype to my friend, you can see him there say hello, [another voice says hello, view of video image of the other person on Skype] hello, he's from Wigan so he talks like this [imitates accent] and I am using my mobile phone as well. Who I'm with, I'm not with anybody at the moment apart from my friend, say hello (second voice says hello) hello, he's from Wigan and I am very comfortable in my environment. (Net Generation Male Information and Communications University B)

Example 3 Interaction around computer

> I'm sat in the library with Tom, Ravsi with Kirk and Sam and we are doing our marketing formal assessment. Am I using any technology? Yes I am. I am using my MacBook and we are working with KeyNote which is the equivalent of Microsoft PowerPoint. My mouse and my mobile and USB sticks and that's about it. How do I feel about it? I don't feel anything in particular about using this technology, I don't know does anybody else? (others agree) Everyone seems to be good, but no it's cool it's helping us with our presentation for marketing which is formally assessed on Thursday. So we're just getting used to it, the slides and whatnot. (Net Generation male Accounting and Finance University D)

Discussion and Conclusions

The settings that students reported are local habitations in the sense that students make use of available resources by negotiating the meaning and relevance of a technology within their own life flow. They illustrate an active agency because students do not just act uniformly in relation to the array of technological artefacts and services they are faced with. Each student has their own study practices, subject area and network of relationships. All of these experienced within an institutional context help shape their reading of the technological landscape encountered as first year students. In this sense this work reinforces comments made elsewhere about the mediated institutional power that is evident in the patterns of student engagement (Lea and Jones 2009). The survey work conducted for this research project showed that students tended to use the same technologies for social life and leisure as they did for study purposes (Jones et al. 2009), even though when they enter university they are introduced to new technological tools and services that are university specific e.g. local Virtual Learning Environments. Engagement with technology is not simply the action of an individual student, the motivations are often associated with institutional requirements.

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ISBN 978-1-86220-225-2

The changes in the past 10 years are illuminated in sharply different lights. The technologies have become much more mobile and their incorporation into everyday life almost seamless. Perhaps the most common comment made to us during the research was how surprised the students were by the amount of technology they used and its significance for them. Despite the widespread use of the mobile phone, laptop computer and wireless and mobile Internet connections it is also striking how close the locations of student activity remain to those described by Crook in 2002. Despite the increased possibility of mobility made available by new devices and the spread of accessible network access to the Internet, students still largely inhabit the spaces that were described when network access was fixed. Students are still working in study bedrooms, dedicated work spaces in permanent homes and the university provided library or lab spaces. It is entirely possible that we are on the verge of a significant change as the cost of technologies and network access fall and the efficiency of mobile devices increases, but there is little evidence of widespread change at this time. Students in our sample were using laptop computers and smart phones, including the Blackberry, but they had not adopted the habits seen already amongst mobile workers. Even on a campus university there is relatively little day to day use of laptop computers carried by the student on site. One of the ways there has been considerable change is the way that technology is now integrated in student social life and leisure in ways not predicted in Crook's work. The student in 2002 was presented as being open to technological change and the partial virtualisation of the university but with clear limits provided by the lack of social interaction in the mediated environment. This was contrasted with face to face encounters that allowed for much richer exchanges. Whilst aspects of this account remain true it is striking how much has changed. Students now engage in rich, and often mediated 'face to face' encounters (see the example of video Skype above). Technology and partial virtualisation has given way to a much more integrated use of mediating technologies in all aspects of social life and leisure amongst students.

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ISBN 978-1-86220-225-2