

SUE BENNETT, KARL MATON AND LISA CARRINGTON

4. UNDERSTANDING THE COMPLEXITY OF TECHNOLOGY ACCEPTANCE BY HIGHER EDUCATION STUDENTS

ABSTRACT

It is often claimed that all young people are highly adept with the digital technologies that infuse their lives, and that the way they think and behave has created a new gap between them and their teachers. It is suggested that to bridge this gap and ensure that young people are fully engaged, educators must incorporate digital technology more effectively into teaching and learning. This is problematic, however, because technology has had limited impact on education and has failed to be widely adopted as a learning support across many aspects of school and university education. More needs to be known about how technology is seen by young people and their teachers in order to understand the true nature of the problem that has been identified. This chapter will report on recent research investigating the reasons why digital technologies are adopted by university students in their everyday and academic lives. The findings provide insights into how the 'rules of the game' in different contexts influence the ways in which individuals perceive the utility of a technology and the ways in which they use it. This research draws on sociological concepts as an orienting theoretical framework to investigate and conceptualise these differences and consider what they mean for the integration of digital technologies in education.

INTRODUCTION

The idea that all young people can be regarded as 'digital natives' (Prensky, 2001) who are highly adept with digital technologies by virtue of their lifelong exposure to them has captured the academic and popular imagination (eg. Barnes, Marateo, & Pixy Ferris, 2007; Downes, 2005; Toledo, 2007). Though the idea emerged almost a decade ago, only recently has it drawn attention from researchers. This emerging body of work has so far been helpful in dispelling the myth of homogenous generations of 'tech-savvy' young people and in demonstrating the persistence of significant digital divides within populations (eg. Kennedy et al., 2009; Salaway & Caruso, 2008; Jones et al., in press).

This research has, however, contributed little to date to our understanding of how and why individuals choose the technologies they use. This is a significant oversight because a key assumption of the digital native hypothesis is that all young people use all digital technologies in the same ways, for the same purposes and with the

same frequency. This gives scant regard to variations in disposition, interest, opportunity and skill. It is a natural result of the simplistic generalisations on which the digital native idea is based, which serve to homogenise all young people into a single type.

Thus important questions remain about the nature and cause of detectable variations in what young people do with digital technologies and what they choose to access. A simple way of thinking about this is that at some level individuals make calculations about the extent to which a technology suits their purposes and needs. These deliberations involve determining a technology's value in terms of what it can achieve for an individual personally, but is also affected by a person's means and capacity to make choices and act upon them.

Bourdieu's concept of 'habitus' provides a useful orienting framework for understanding the diversity of young people's technology use. According to Bourdieu (1990), actors occupy a variety of social fields, each with its own 'rules of the game' or ways of working that structure these different contexts. For Bourdieu practices are shaped by: actors' 'habitus' (or dispositions structured by experiences); their 'capital' (or knowledge and know-how); and the state of play in struggles for status in the 'fields' they occupy (Lingard & Christie, 2003; Maton, 2008). Practice results from relations between a person's disposition (habitus) and his or her position in a field (capital), within the current state of play of that social arena (field). Importantly practices are not simply the result of one's habitus but rather of relations between one's habitus and one's current circumstances.

Drawing from Bourdieu's terms, technology practices need to be understood within their context of use, sensitive to the influence of an individual's habitus. Thus for any individual there is a complex interplay between the nature of the context they are engaged in and what they bring to that context, and this is an active changing process. Thus, investigations of young people's technology practices must ask questions not only about levels of access to technology and the frequency with which various technology-supported activities are undertaken, but must also account for the contexts in which those activities occur, and the value placed on a technology for performing an activity according to the logic of practice within that context. It is possible, and indeed likely, when considered in this way that there will be variations in the ways individuals perceive and use technologies based on what they bring to a context and how they experience that context. With these ideas in mind, this study set out to explore how undergraduate university students used and perceived technologies across everyday and academic contexts.

METHODOLOGY

Semi-structured interviews were conducted with 15 students from a large second year sociology subject in late 2007. The subject was chosen because it not only includes a large cross-section of Arts students, but is a popular elective for students specialising in other disciplines, such as Law and Education. It also had the advantage of not being skewed towards technology-based topics areas such as informatics or engineering, and so was likely to contain young people with varied levels of skills and interest in digital technology.

UNDERSTANDING THE COMPLEXITY OF TECHNOLOGY

The interviews were conducted in six focus groups to generate discussion between participants about the questions. All students in the subject were invited to participate in the research and it was made clear that participation was completely voluntary. Students were approached in their tutorial groups with the interviews conducted outside of class time immediately following the tutorial in groups from the same class. Interviews were of around 60 minutes duration.

A semi-structured interview protocols was used to ask participants about the range of information and communication technologies they used the most, using a list of common technologies as a stimulus, and asked to comment on why they used those particular technologies. They were also asked about which technologies they did not use and why, about what activities they undertook with the technologies they did use, about how they thought technologies might be used in the subject they were currently studying, and other ways they thought technologies might be effectively used to support them in their university studies. The purpose of the interviews was to collect data about not only what technologies young people were using, but also in what contexts they were used and how and why they were valued for particular purposes.

In the quotations reported in the following sections participants are identified using their focus group number rather than by a participant number. Due to confidentiality constraints imposed by the human research ethics procedures at the university, students were not individually identified during the interviews, making it difficult to accurately identify individuals from the group interview recordings.

RESULTS

Technologies Used

Students were initially asked to describe their access to key information and communication technologies, and to explain why they used particular technologies. [Table 1](#) summarises the technologies the students in the focus groups had access to.

Table 1. Summary of technologies used (n=15)

<i>Technology</i>	<i>Number of participants with access</i>
Desktop computer	6
Portable computer (i.e. laptop or notebook)	9
Electronic Organiser or handheld computer	1
Broadband Internet access (ADSL, cable or wireless)	6
Dialup Internet access	9
Dedicated MP3 player (e.g. iPod)	10
Digital camera (still and/or video)	4
Mobile phone	15

Portable computer One participant who did not currently have a laptop stated buying one was a priority as its portability would mean she could use it for wireless Internet in a range of locations including cafes, the university and libraries, and

also to share it with a friend. Laptop users commented on the portability of a laptop and the ability to connect to wireless Internet as a reason for laptop popularity.

Handheld computer Only one of the participants used a handheld computer and was enthusiastic about using it to take notes in lectures to use later for exams and essays, but suggested that it had taken her some time to become used to operating the small keyboard. Another participant had been given a handheld computer but found that it was not useful and did not subsequently use it:

I was given one and it was kind of too much technology for me. I didn't need all that technology. I didn't need to check my emails on the run. I didn't need to be able to have video calls. I didn't need all the crap and my life isn't so complicated that I need a diary or an organiser to work myself out. So I kind of I just needed the phone to call people and so it was just kind of wasted technology. (Group 4 (G4))

A similar conclusion was expressed by another participant, "You can do it all with your mobile phone now anyway" (G5). In the ensuing discussion about handheld computers, many participants commented on preferring paper diaries rather than electronic organisers, for example "I find a paper diary works much better for me" (G1). Reasons for preferring paper diaries were that the process was quicker and less "fiddly" (G1) because learning how to use a handheld computer or PDA was time consuming. One participant said, "I'm just too lazy to type it all in really" (G5). Another commented:

And you only write little things [in a diary], like you only write blah blah blah and gym, whereas if you get one of them [PDA], you've got to turn it on, you've got to find the thing, you've got to put it in, then you have got to... it's too complicated (G1).

Another participant commented that a paper diary provides a convenient visual reminder "right in front of you" (G1) which seemed "more organised" than a PDA (G1). In one focus group all the participants used the University's online diary, which was favoured because it was designed specifically to organise the information students needed to remember and as it listed the semester breaks.

Other reasons not to use a handheld computer that participants stated were that it was another item to carry around, for example in addition to a phone and potentially an iPod or MP3 and a digital camera, and subsequently another thing to lose. Financially the loss of a handheld computer was also significantly greater than a paper diary and it was also perceived as easier to lose or get stolen (G3).

Dedicated MP3 player One participant used her brother's iPod as she did not yet have her own. One participant used a phone to play MP3s. Two participants used a computer for playing music instead of an MP3 player: "I don't use an MP3 player because I play all my music through my computer" (G3). In addition, one participant had considered buying an MP3 player but had not yet "forked out" the money (G6).

Digital camera For two participants the use of a digital camera was situational - one was an overseas student from Malaysia and wanted to take photos while in Australia, another purchased a digital camera when they first became available as a cheap commodity, however, was now less likely to use one unless travelling or on holidays. She explained, "I'm going overseas in a couple of months so that will be coming with me, but it's not an everyday occurrence" (G3). One focus group talked at length about using digital cameras, relating that they preferred them in comparison to film photography because they only had to pay to develop the photos that they wanted, and could store them easily to computer. Two respondents had used a digital video camera, though one had only used it at [college] and one used it rarely "for special purposes" (G1).

Mobile phone Mobiles were used for "connecting to people" and staying in touch with friends (G4). Participants stated that the reminder function on a mobile was useful as an organising tool to remember birthdays or to phone someone, and preferable to an electronic organiser as it is also possible to call someone. One participant explained, "Things I am likely to forget I put in my mobile phone because it actually makes a noise to remind me, that something's due" (G1). Another participant commented that her mobile was used as a multi purpose piece of technology:

On my phone there is a lot of like, camera video recording and stuff, and my phone has an MP3 player on it so you are finding that your phone has everything you want and that the quality is actually getting really good on the phone. (G2)

Technology-Supported Activities

All participants used technology for communicating. Of these most stated that they used mobile phones, two specified emailing on computer, one used MySpace, and two others were not specific about which technologies they used to communicate. Five respondents commented on uploading photos under the category of 'sharing files' and also stated they sent group assignments to each other.

Accessing information was the other main activities and this included using computers, the Internet, library databases, Wikipedia and Answers.com. One participant explained how she used library databases for accessing information for essays, and other means of accessing information for looking up gigs and other "fun stuff" (G4). Wikipedia was used widely amongst participants to gain background information about a topic as participants acknowledged that they could not reference this site for university work. One explained, "There's Wikipedia if I need like a clear definition and then I can go to the library to actually understand what I'm researching" (G3). One participant subscribed to emailing lists and received information on social justice issues. This participant also described surfing the Internet for 'functional' purposes (G6), rather than recreationally.

In addition to these activities which participants identified spontaneously, a number of emerging technology-based activities were probed by the interviewer to determine to what extent these young people were engaged in Web2.0 activities.

This was of particular interest given that, at the time of the study, young people were regarded to be the quintessential Web2.0 users (Lorenzo et al., 2007).

Writing blogs. None of the respondents wrote their own blogs at the time of the interview, though a few had written a blog in the past. One participant wrote a blog whilst in secondary school when she had more time:

I write some stuff down, but I won't blog it. I used to blog on MSN Faces but that was only random things like oh, I am going to the Green Day concert or like, yeah I am going to the World Cup in soccer. Like things like that (G1).

Overall, most participants seemed uninterested in writing a blog in future except one who had considered writing an anonymous blog about "an issue of concern to me", but had not done so yet (G6).

Reading blogs. Three participants regularly read a blog – one participant read MSN blogs, one participant read band blogs, and one read the Sydney university blog, because her she knew the author. Another read a blog written by a friend to update others about her overseas travels:

Yes, yes, I have over the last year and a half I've... partly because I have a friend who lives... who's currently in Palestine, in the West Bank... But I'm not assiduously looking at because I'm at university and there's other things to do (G6).

Four participants indicated they read blogs very occasionally. One said, for example, "I see people put up blogs all the time and I don't really bother looking at them" (G2).

There was a common sentiment that most blogs were not very interesting and participants were judgemental about those who wrote them. One said, "Just like a 'vent your spleen' sort of thing, that's what I see it as, like had a bad day and they'll rant about something" (G5). Further two participants thought that blogs were self indulgent commenting:

P1: It's so self indulgent and people won't reply to your emails now like it's just like 'read my blog'. I'm like 'I don't want to just read about your life' like I find it really... oh yeah.

P2: I just think it's a bit, you know, self-indulgent or something. If you're a great writer and you're telling funny stories but if it's just like, today I went to uni and I was really upset and whatever, who wants to read that. (G4)

Social Networking. Ten respondents used social networking sites (eg. Facebook, MySpace, Bebo) at the time of the study. Typical comments included:

You feel connected [on MySpace and Facebook] to people in so many ways without having to get on the phone and talk, and it is your daily schedule of what you are doing. (G2)

UNDERSTANDING THE COMPLEXITY OF TECHNOLOGY

Especially for people that who aren't that close to you and you wouldn't usually pick up the phone to talk to, or have a big conversation, but you still wanted to say something little, or, see how they're going. (G1)

Five participants explained that they used social networking for keeping in touch with people they knew already, especially friends that were not geographically close or not in frequent contact:

I don't really use it to communicate with my friends that I have now that live around me but it's like school mates that I haven't seen for five years. (G3)

Participants explained that Facebook and MySpace were a good to "keep in touch with" friends and family while travelling and share photos at no cost. Equally, social networking sites were considered a good way for friends travelling overseas to stay in contact. There was one exception with one participant preferring to phone overseas instead, in part because she did not have home Internet access but also because:

I would rather phone people in England... I love talking to them on the phone then we just have a good chat. It forces me to talk the on the phone. (G5)

Only two participants said they used sites like Facebook and MySpace for making new friends.

One participant used Facebook as a means of contact more due to not having a home landline and not wanting to pay for costly mobile calls:

We tend to either SMS and say 'meet me somewhere for coffee' or arrange it over Facebook and go out. I don't tend to talk on the phone to my friends nearly as much as I tend to meet them now and chat and that's it. I can't afford to talk to them without having a landline. It's too expensive. (G4)

Similarly, another participant explained:

I'm finding increasingly though my friends and I are using things like Facebook to organise things rather than over going back and forth with ten different SMSs. It just goes on Facebook now, you just assume that everyone kind of checks it every one to two days and that's that. So I've actually used my mobile phone less having joined Facebook. (G4)

Overall, the two main advantages of social networking sites discussed were that the lack of pressure to reply to a message immediately compared with SMS, and that it was free to use.

Several participants explained how they had used Facebook to share information for university:

When we did our group assignment everyone works and has all this responsibility, it's easier to just communicate online. It was like 'oh we should have it on Facebook. It would be heaps easier'. (G5)

Another agreed, "I've done that like for another subject running this semester. We've just all communicated via Facebook just because it's easier" (G5).

Although use of Facebook was popular, some participants expressed negative sentiments about it. Typical comments included: "You waste time" (G4) and, "I collect

friends I never talk to” (G4). Two participants admitted reluctance to sign up to Facebook at first, despite subsequently becoming quite addicted to using it:

I thought I wasn't going to do it, but I did. I joined up in the mid-semester break. I don't usually use it but like it's fun when you do. It's just a cheaper way to send out an invite to a party. (G3)

Participants also raised the issue of the quality of communication on social networking sites:

I just feel like Facebook's like meaningless communication. Like you see what your friend from 15 years ago is doing, it's sort of interesting but it doesn't like add to your life in any way. (G5)

Social networking sites were also viewed by several participants as a useful distraction, for example one said it was “good as a little break when studying in the library” (G2).

When comparing MySpace to Facebook, the latter was more popular amongst the participants in this study. One did not like MySpace because of the ‘extra’ information whereas he felt that Facebook was just social networking making it was easier to “avoid the crap” (G4). Another participant found MySpace overwhelming but thought Facebook looked more interesting (G6). In one group, none of the participants were on MySpace because it was “too complicated” and “takes up too much of my time” (G5).

Podcasting. Listening to podcasts was neither a widespread or frequent activity amongst the participants in this study. Of those that had listened to podcasts or watched vodcasts, five respondents listened to music from radio broadcasts, and one participant watched two episodes of a television program she had missed on YouTube. One participant downloaded podcasts from a regular radio series and sporting events, but admitted he often did not “get around to listening to them” (G5).

There was a general lack of understanding about podcast technology. Some participants did not know how to listen to or indeed understand what a podcast was. One explained:

It's really funny how, like you take things for granted, or you don't realise something because, I have got iTunes, actually I have had it for a long time... I just sort of go to audio, type in what I want and that's it. Like I have never looked at the other ones. So I suppose I just associated iTunes just with music (G2).

There was a belief expressed by one participant due to the name that this technology was iPod specific and therefore wasn't available to her because she did not own an iPod. Also one participant said she did not realise there were video podcasts which she could watch on a computer or iPod.

Usefulness of Technologies for University Study

In this part of the interviews the participants were asked about how the technologies they were currently using assisted them with their university studies and about how technologies they were not currently using might be useful.

UNDERSTANDING THE COMPLEXITY OF TECHNOLOGY

Laptops Respondents discussed other students using laptops in lectures to take notes which enabled easier editing. One participant took notes in lectures, saying “it was heaps better than having to print them out and waste all that paper” (G5). However, having a laptop at university was also a distraction. As one participant put it, “It’s like having something there to distract you as well” (G1).

Digital video cameras. A group of Education students taking the subject as an elective discussed how digital video cameras could be useful as a learning tool both for themselves and for students at school:

The digital video camera is definitely useful in education if you can have permission from the parents to use it. You can take it to class and video-tape us doing lessons, so that we can hone our own teaching skills. Also for kids to video-tape things in their classroom. It’s a different way of recording it so they don’t have to write, like, a journal entry of how they did an assignment, they can just record it on a video camera. (G1)

Another participant explained that video-taped footage can be beneficial in modelling a behaviour or skill:

The most useful thing I find is when they are like, telling us in lectures, or teaching us how to teach, I find it really useful when I am watching a video of someone doing it, rather than us being told, this is what you should do. (G1)

Podcast lectures. Participants’ reactions to the use of Podcasts at university varied. Some said liked podcasts for lectures because they preferred learning through listening. Others said they found it hard to concentrate on a podcast and needed to see who was speaking in front of them at a lecture or tutorial:

I have listened to one lecture that I missed once on a podcast and I didn’t like it because it’s much easier for me to sit in a lecture and watch someone talk rather than [listen to a podcast]. (G1)

Several indicated they would be unlikely to listen to the recording afterwards, because doing so required motivation, for example:

There is the option [of listening when the lecture is available on a podcast] and I have done a few of them. Like, I had to do one last week that I missed online but it’s such a struggle to sit there and get through it, as opposed to just bringing myself here and doing it. (G4)

Last semester I did a course and they recorded the lectures and I started to skip the lectures but I found it more of a chore listening to the lecture at home. I’d get distracted and wander off, that kind of thing and I guess you’ve got all the gaps and all of that in it or if she cracks a joke that you don’t know or something like that. I mean it’s just boring and I was like I’ll just do the readings kind of thing, so it actually detracted from going to uni and learning. (G4)

It was agreed by some that podcasts would be good as a supplement to university teaching modes rather than a complete replacement. The perceived benefits of

podcasts included being able to: to make up a lecture missed due to illness; listen to a lecture when there was a timetable clash with another class; and pause it to have a break and then go back to it.

Furthermore, if podcasts were only a supplement then interaction with lecturers was not jeopardised:

[Podcasts] would probably be a bad thing because you can't then go to the lecturer afterwards and ask, you know sometimes they say that sometimes in a lecture has anyone got questions, do you understand, do you follow? If that was the case, with the podcast, you can't do that. You can't ask the question, you can't clarify anything (G2).

Social interaction. This theme was also evident in general discussion amongst participants about the use of technology in education. This following quote expresses this common sentiment:

I don't think technology... like solely having things online is a good idea because you're not going to get that interaction and the opinions of others that you want to hear (G5).

Importantly, the role of social interaction in a face-to-face learning environment was imperative to many participants. In particular, it was explained that the seminar format maximised social interaction with the lecturer, "Face-to-face contact with the tutor and getting to know them and their viewpoints, their personalities, just makes the experience all the more worthwhile" (G4).

Social interaction was perceived as something that you can only learn in a real classroom with real people, with participants commenting that they felt there was no "intimacy" (G2) in a virtual classroom:

Yeah I've often thought about how a university of the future would look like but I'm worried about the lack of face-to-face contact because I think that's really still... really, really important. And in while though I have imagined for example a virtual lecture, not having to come to university and watching it on your computer at home. I sort of feel that I would become more socially isolated or it would increase the propensity for social isolation, and I don't think that's such a good thing. I think there might be some areas where that would be useful, particularly people who have a disability, but then again shouldn't universities be inclusive? So I just think that this is sort of technology will be used as part of the way it has been done but in a more interesting way. (G6)

I think it's a positive thing that you come to uni because there's other things going on. So if you don't even have the incentive to come you're not going to participate in other events or have a sense of a university community. And I've formed relationships with tutors and lecturers and talk to them about what they've done in the past, what their jobs are and I think that's really helped me like establish a sense of where I want to be and where I want to go with what I've learnt. So you wouldn't have that opportunity to form these relationships or with other people. I don't think technology can replace

actually standing next to someone and talking to them. It depends what you want to get out of it, like I understand maybe for a mature aged student and you have like other responsibilities and university... you're not going there for like any social aspects or any kind of like political or sporting kind of education then you know online might suit you better. (G5)

Virtual reading or virtual lecturing as a hundred percent of the course, I think that'd be a disaster. Socially a disaster. Sorry, but that's how I feel. I think it's really, really important that students bounce ideas off each other. I think it's really important that they get used to different age groups in different ideas, different experiences, different people look different. (G6)

Communication. One participant had liked a course coordinator who had used WebCT to update deadlines and make announcements, although he emphasised that the effectiveness related to the consistency of the coordinator, indicating that the technology was only "as good as the user" (G3P9). Some lecturers were not perceived as being so efficient at using WebCT or responding to emails. For this reason, this student suggested that getting announcements via SMS would be useful:

I'd prefer [SMS] to WebCT. I get confused with WebCT because you need consistency. Some lecturers will use it and others won't and that's really annoying, you'd kind of like everyone to use it or no-one to use it. (G3)

Some respondents had a previous tutor who called mobile numbers to update students that had missed a tutorial or to give information (G1). Another had previously been contacted by mobile phone:

I got called by a lecturer once because we had to submit everything through a plagiarism detector at [another university] and I hadn't done that so she called me on my mobile phone and told me to do it, so it was a surprise. (G4)

The same participant continued to explain that this was an appropriate course of action by her lecturer, however it would only be acceptable in extreme circumstances such as this.

The idea of receiving text messages from tutors and lecturers provoked mixed reactions. It was suggested that text messages could be useful to alert students about the cancellation of a lecture or tutorial at short notice (within 2–3 hours of it commencing) as not everyone would access email in time, "if you've got a reminder [on your mobile] sort of thing would be good 'hey your thing is due in one week'" (G5).

One participant thought texting was too informal, whereas others disliked it for different reasons. One participant said it would be "creepy" to get a text message from a tutor or lecturer (G5). Another explained:

I know people [whose tutor called them on their mobile phones]. It was really weird, like you don't expect to get a call from your tutor. You would be like, 'what are you doing calling me', 'how do you have my number?' You are used to getting email but getting a text message, it would feel like they are kind of watching you while you were outside uni. (G1)

One participant stated a preference for keeping a personal email that she did not give to lecturers or tutors so that she could keep her personal life and university separate, explaining “uni is more formal” (G2).

Participants also expressed mixed feelings about lecturers using Facebook, one noting possible tensions from the blurring of the formal/informal when used by lecturers. He explained, “It’s all about boundaries isn’t it, like there has to be a certain line and yeah that can obviously become a problem I could imagine” (G5). In general though, there was outright rejection of this possibility, once again, on the grounds of protecting privacy from authority figures who could spoil the enjoyment of the social sites. Typical comments included: “No because I don’t like that they could look at my personal life... and it’s got all my photos of me like partying on the weekend, so no” (G5); and “Facebook is a place for recreation and fun and friends” (G4).

Writing a blog or wiki. As with other technologies proposed for educational purposes, there were mixed views about writing blogs. Four participants stated outright that they would not write a blog, especially if it was to be assessed. Others felt embarrassed about presenting their opinions, for example “I’d feel silly having everyone read my stuff” (G3). Another disliked it because of the fallibility of technology:

Too much can go wrong. You get online and it doesn’t work and you haven’t got this plug-in or your cookies don’t work or oh it’s just a nightmare! (G4)

One respondent objected because personal communication was better:

I prefer the personal interaction, I just find computers so impersonal. It gets lost in translation. (G4)

Writing a blog was seen by some participants as a “bit of a hassle” for university, and too private to share publicly, though it may be acceptable for the tutor to read it and comment on appropriateness. Others were happy to write about a subject that they felt passionately about. Some participants felt that online reflections were reasonable to demonstrate understanding of the readings, to find out what others had to say, or to communicate if you preferred not to talk in tutorials. Some participants had already written a blog as part of their studies in law and social work. These courses required weekly reflections for interaction and feedback; however, the participant stated that because everyone left this to the last minute it did not work so no one actually benefited from it (G3).

Only one participant commented directly about writing a wiki entry, saying “I am never really confident enough in myself like in what I know [to write in a Wikipedia site]” (G2).

DISCUSSION

A key finding from the study is that popular technologies tended to be those with what was deemed to be sufficient functionality without being excess to requirements. Even for these young people it was possible for a technology to be regarded as too

elaborate or complicated for the purpose, for example using a handheld computer as an electronic diary. Related to this was the general observation by many participants that ease of use and convenience were important – according to participants if the overhead of learning to use or to operate a technology was too high for its perceived usefulness, then the technologies itself would not be deemed useful. Furthermore, some technologies were not used often or were deemed less important because their functions were seen as too specialised and not for ‘daily use’. These themes are consistent with concepts from the Technology Acceptance Model literature (eg. Teo, 2009), which highlights the importance of perceived usefulness and ease of use. Cost sensitivity was also a theme, which considering that the participants were all university students is not surprising. It does, however, demonstrate how this factor is important in decision making, for example in the non use of handheld computers which were regarded as too expensive and could easily be lost, the choice not to purchase an iPod if another device would suffice, and the popularity of Facebook as a free service.

The findings also suggest that technology was regarded as valuable for supporting two main types of activities – accessing information and communicating (with social networking as an important sub-set). There was very limited self publishing or use of other Web2.0 tools (other than social networking) and a number of participants were not aware of what blogs and wikis were. These findings are consistent with similar studies conducted at around the same time (eg. Kennedy et al., 2007). This suggests that ‘consumption’ rather than ‘creation’ of information was much more prevalent amongst these participants. This contradicts claims made at the time that amongst younger generations “bypassing traditional authority channels, self-publishing – in print, image, video, or audio – is common” (Lorenzo et al., 2007, p. 2). It is also evident from the interviews that not all participants regarded themselves as technically skilled in relation to digital technologies, commenting on needing help or raising concerns about technology being too complicated to use. This also runs counter to the popular image of the digital native.

It is also evident that the participants made subtle distinctions made about forms of technology used for particular functions. For example, mobile phones and Facebook were both regarded as important tools for maintaining social relationships with family and friends. Phone calls were regarded by some participants as more intimate or immediate and reserved for family and close friends, while Facebook was said to be particularly useful for maintaining more distant relationships (similar to idea of online networks as means of maintaining weak social ties as suggested by Jones, Ferreday & Hodgson, 2008).

Participants also demonstrated a capacity for critiquing both their own and others’ technology practices. A number commented on the potential for technology use to distract them from other activities, for example the distraction of Facebook during study time. Others explained the difficulties they experienced trying to motivate themselves to ‘catch up on’ missed lectures by listening to podcasts. This suggests these students were aware of the need for them to be motivate themselves to be self-regulated learners but did not necessarily see technology as a means to assist them achieve this. Participants also demonstrated varied perspectives on what activities were valuable or ‘socially acceptable’. For example, few participants expressed interest or experience in self-publishing activities, some explaining that

they did not consider it a good use of their time. A small number, however, were derisive of other people's blogs, indicating they considered the activity to be self-indulgent. These attitudes carried over to discussions about the potential usefulness of blogging as part of university studies, which drew reluctance from some, who assumed this would involve sharing something private, like everyday blogging, rather than an academic form of reflection. This suggests that practices in everyday life are imbued with particular assumptions; in turn suggesting that blogging for academic purposes would require a re-imagining of the familiar form of the activity. This finding has implications for attempts to re-cast everyday technology practices into academic forms and suggests the need for sensitivity to the differences between the 'rules of the game' in these contexts.

This is further highlighted by the preference expressed by some participants for a strong boundary between formal and informal environments, with a number commenting on what might be appropriate for university and what should be reserved for fun and friends. Some students were particularly resistant to the idea of the university intruding on their personal online spaces, some likening it to surveillance. Others were less concerned with potential intrusion and saw value in the possible convenience offered. This further highlights the situated nature of technology use in terms of how it regarded by individuals for a purpose in a particular context, and how that varies between individuals.

A final theme worthy of comment is the strong resistance expressed by most students to the prospect of technology replacing the social interactions they deemed necessary for an effective learning experience. Many expressed concern that their experience of learning at university would be degraded if technology was used as a replacement rather than a supplement to current teaching methods. Most still expressed a desire for teaching staff to not only use technology more effectively but also for more effective teaching in general through smaller class sizes and more interactive methods. This further suggests the need to be sensitive about the nature of the context, in this case the nature of social interaction in a learning context, which may differ from the nature of social interaction in a personal context.

CONCLUSION

The research reported in this chapter aimed to develop a broader understanding of young people's technology practice, moving away from documenting levels of access to technology and the frequency of particular technology-supported activities, to develop a deeper appreciation of how young people come to value and use technologies for particular purposes. While this is a small, exploratory study it does highlight the importance of the ideas an individual develops about a technology (formed through experience as part of an ongoing process), in conjunction with the nature of the context of use. This suggests that not only are variations in technology use between individuals is to be expected, but also that perceptions and uses of technologies in different contexts are likely vary. This has implications for how universities approach the integration of technologies intended to support student learning, particularly when those technologies are associated with particular practices and values in contexts outside formal education.

UNDERSTANDING THE COMPLEXITY OF TECHNOLOGY

REFERENCES

- Barnes, K., Marateo, R., & Pixy Ferris, S. (2007). Teaching and learning with the Net Generation. *Innovate*, 3(4). Retrieved September 5, 2009, from <http://innovateonline.info/index.php?view=article&id=382&action=article>
- Bourdieu, P. (1990). *The logic of practice*. Cambridge: Polity.
- Downes, S. (2007). Places to go: Google's search results for the "Net Generation". *Innovate*, 3(4). Retrieved June 27, 2007, from <http://www.innovateonline.info/index.php?view=article&id=455>
- Jones, C., Ferreday, D., & Hidgson, V. (2008). Networked learning a relational approach: Weak and strong ties. *Journal of Computer Assisted Learning*, 24(2), 90–102.
- Jones, C., Ramanaua, R., Cross, S., & Healing, G. (in press). Net generation or digital natives: Is there a distinct new generation entering university? *Computers and Education*. (Accepted 15 September 2009).
- Kennedy, G., Dalgarno, B., Bennett, S., Gray, K., Waycott, J., Judd, T., et al. (2009). Educating the Net Generation - A handbook of findings for practice and policy. *Australian Learning and Teaching Council*. Retrieved October 19, 2009, from http://www.altc.edu.au/system/files/resources/CG6-25_Melbourne_Kennedy_Handbook_July09.pdf
- Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., et al. (2007). The Net Generation are not big users of Web 2.0 technologies: Preliminary findings from a large cross-institutional study. In R. Atkinson, C. McBeath, S. K. A. Soong, & C. Cheers (Eds.), *Proceedings of the 24th annual conference of the Australasian Society for Computers in Learning in Tertiary Education* (pp. 517–525). Singapore: ascilite.
- Lingard, B., & Christie, P. (2003). Leading theory: Bourdieu and the field of educational leadership. *International Journal of Leadership in Education*, 6(4), 317–333.
- Lorenzo, G., Oblinger, D., & Dziuban, C. (2007). How choice, co-creation, and culture are changing what it means to be net savvy. *Educause Quarterly*, 30(1).
- Maton, K. (2008). Habitus. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 49–65). London: Acumen.
- Prenksy, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6.
- Salaway, G., & Caruso, J. (2007). *The ECAR study of undergraduate students and technology*. Boulder, CO: EDUCAUSE.
- Teo, T. (2009). Modelling technology acceptance in education: A study of pre-service teachers. *Computers & Education*, 52, 302–312.
- Toledo, C. (2007). Digital culture: Immigrants and tourists responding to the natives' drumbeat. *International Journal of Teaching and Learning in Higher Education*, 19(1), 84–92.

Sue Bennett and Lisa Carrington
University of Wollongong
Australia

Karl Maton
University of Sydney
Australia