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Life, Learning and Technology: views from the learners

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ABSTRACT

There has been a rapid spread of personal information technology and social networking along with increasing demand for flexibility and choice in learning. This is fuelling international research interest in the holistic experience of e-learners. Over the course of a year, the Learner Experience of e-Learning study (LEX) interviewed learners from across the post-16 educational sectors in the UK in order to compile a snapshot of those very personal learning experiences. Through rigorous interview and analysis techniques, the study successfully explored the beliefs and intentions of learners in relation to their use of technology for learning, as well as the strategies and behaviours they displayed towards integrating e-learning with other aspects of their lives. This paper outlines the background to the study and its methodology, provides a critical evaluation of the main findings and concludes by highlighting the key implications for tutors in the planning and practice of e-learning.

Introduction

In recent years there has been mounting interest in the role that technology plays in the everyday lives of learners, particularly those of the 'Millennial Generation' i.e. children born between 1982 and 2000 (e.g. Prensky, 2001; Oblinger, 2003; Green & Hannon, 2007). Studies have focused on how the experience of growing up with computers, the Internet and video games might impact on student expectations of, and aptitude for, e-learning. For example, Veen describes 'a generation of students that has been born with a PC mouse in their hands and a computer screen as window to the world' (Veen, 2005, p.1). In post-16 education, however, the impact of technology is not limited solely to younger learners (Jonas-Dwyer & Pospisil, 2004; Garcia & Qin, 2007). Strong trends are now emerging across all age groups in relation to the rapid spread of personal information technology, the explosive growth of social networking,

and the increasing demand on students to fit learning into pressurised lives (e.g. Kukulska-Hulme & Traxler, 2005). There is a growing recognition therefore that the learner experience should be considered in a holistic way by fully acknowledging the integration of learning into increasingly complex lifestyles.

This acknowledgement marks a perceptible shift in focus from earlier studies that investigated scenarios where design and implementation were in the main controlled by the teachers or institutions (Mayes, 2006), often highlighting specific technologies or innovative pedagogical approaches (e.g. Dickey, 2004; Smith *et al.* 2005). The learner perspective was often focused on evaluating a particular course or a specific educational context (e.g. Maharg, 2001; Jones *et al.* 2001). As learner profiles become increasingly diverse, however, research into the wider impact of technology on the student experience is fundamental to developing a deeper understanding of their needs.

This paper will explore the interplay of life, learning and technology in students' lives by outlining the main findings from a recent study on the learner experience of e-learning which sought to elicit from learners some of the key influencing factors on their use of technology and their approach to learning. It will describe the rationale behind the study, outline the innovative methodology used, and draw on data from interviews with students from across the UK to evaluate critically the implications for the design and practice of learning and teaching with technology in tertiary education. It will conclude by identifying the key implications for tutors in planning and practice for e-learning and highlighting those themes that merit further investigation.

Project background

The Learner Experience of e-Learning (LEX) research study was funded by the UK's Joint Information Systems Committee (JISC) from May 2005 till July 2006. Its aim was a broad one: to capture an initial snapshot of the learner experience of e-learning across a range of UK-wide, post-16 educational settings.

An earlier scoping study on the e-learner experience (Sharpe *et al*. 2005), also funded by JISC, strongly shaped the underpinning theoretical and methodological basis of the LEX research. This comprehensive study revealed little evidence of the learner voice in the post-2000 learning technology literature, with the majority of the

research focusing on observable learner behaviours. Building on these findings therefore, the LEX team set out to discover what learners themselves had to say about the impact of technology on their lives and learning. The aim was to identify aspects of learner beliefs, strategies and expectations that could usefully inform the practice and planning of tutors, course designers, support staff and senior managers. Although the study encompassed higher, further, adult and community education, it was not a comparative one. Indeed, early indications suggest that variations between learners within sectors are at least as important as variation across sectors. This is reinforced by trends such as the increasing pervasiveness of social networking sites, the culture of sharing personalised digital resources, and the high proportion of students whose studies are integrated with work, family and leisure activities.

With that in mind, one focus of the study was on what might constitute an effective e-learner in relation to how they coped with the technology and employed it successfully to enhance their learning. The study also sought to investigate the role of technology in the learners' everyday lives, and to gain some insight into how learners used personal technologies such as social software tools and mobile devices to manage their learning successfully.

Interviewing learners

As described in the LEX methodology report (Mayes, 2006), the scoping study argued convincingly for a research methodology that was capable of capturing the affective, social and conative aspects of the student experience, in contrast to the conventional research focus on the cognitive. Two major gaps in data collection methodologies were identified:

- stories or narratives that capture the diversity of how students use learning technologies in their formal studies;

- attempts to elicit beliefs and intentions.

In order to address both aspects, a qualitative, open-ended methodology was selected as most appropriate, giving the maximum opportunity for the learner voice to be heard. Two complementary approaches were chosen: an adapted interpretative phenomenological analysis (IPA) methodology and an 'Interview Plus'[1] technique. IPA emerged primarily in healthcare and psychology disciplines, and as

far as we are aware, LEX breaks new ground in applying it to the field of technology-enhanced learning. It is a method for exploring how participants make sense of their own experiences and rests on the premise that the interviewee is the expert on that experience (Smith, 2004; Fade, 2004). The innovative 'Interview Plus' concept recommends the introduction of a learning artefact such as a course-related e-portfolio or online discussion board to spark recall and encourage thinking aloud (Sharpe *et al.* 2005). The LEX team found that introducing an appropriate artefact later in the interview usefully encouraged the interviewee to focus on particular aspects of their experience pertinent to the study.

The intensity of the IPA interviewing and analysis technique necessitates a focused concentration on a small sample size (Reid *et al*. 2005). The four LEX researchers interviewed a total of 55 learners, either in individual interviews (22) or in one of six focus groups, which is a larger sample than would normally be recommended. In this case it was felt to be necessary in order to capture a suitably broad range of cross-sectoral and cross-disciplinary data. Subject areas covered by the study included business, languages, law, hospitality, social care and trade union studies, as well as basic literacy and numeracy.

Prior to the interview, participants were asked to complete a short questionnaire consisting of personal profile details plus specific questions on technologies used for learning prior to their current course. The group comprised 30 female and 24 male learners, with one not stating their gender. All ages were represented, with two notably larger groupings around the 16-24 (44%) and the 35-54 (36%) ranges. As illustrated in Table 1 (overleaf), their prior experiences of e-learning were varied. Email had been by far the most used technology for learning (69%), followed by computer-based course materials (38%). For a significant number (20%) of the participants, their current course was their first experience of using technology for learning. Some of these figures may seem surprising, particularly for email use, which we tend to consider as ubiquitous in post-16 education. This can perhaps be explained by the fact that respondents were specifically asked about technology for learning, rather than for communication or administrative purposes, or it may simply be indicative of the engagement, or lack of, with this technology by staff/faculty. Also, mature learners, who made up a substantial proportion of the sample (43% were over 35), were less likely to have experienced e-learning previously.

Learning Technology	No.	%
Email	38	69.1
Materials on computer	26	47.3
Computer based assessments	21	38.2
Video and audio files	15	27.3
Electronic whiteboard	14	25.5
Online discussion board	12	21.8
First experience	11	20.0
Online course	10	18.2
Partly online course	8	14.5
Learning on mobile device	4	7.3
Videoconferencing	4	7.3

Table 1: Experience of learning technologies

The innovative combination of open interview and Interview Plus proved a very powerful means of eliciting the thoughts, feelings and beliefs of learners. Interviews were digitally recorded and transcribed, with transcripts also noting hesitations and emotional responses (e.g. 'sighs', 'laughs'). These transcripts then represented the data for analysis (Smith, 2004; Fade 2004; Mayes, 2006).

IPA demands a thorough and meticulous approach to data analysis. Coding produced initial emergent themes, that, through an iterative process of re-analysis alongside continuous re-visiting of the transcripts, were then abstracted into super-ordinate concepts (as described by Mayes, 2006). Each transcript was coded, independently, by more than one member of the research team. As the LEX team were geographically distributed, dialogue around the emergent themes and connections was facilitated though the use of social software. This combined independent and team approach drew all the researchers into the analysis and revealed differences in judgement, hidden assumptions and conflicting understandings. Dialogues between team members facilitated the production of themes that were richer and better grounded in the transcripts and resulted in the development of concept maps which explored the relationships between them. The final stage of analysis included face-to-face meetings to develop a conceptual framework, leading to the creation of a series of five high level categories relating to life, formal learning, technology, people, and time, within which a further five dimensions encompassing the main influencing factors are situated, as follows:

1. control;
2. identity;
3. feelings;
4. relationships;
5. abilities.

The outcomes of the study are described in full in the LEX Final Report (Creanor *et al*. 2006). The remainder of this paper will now focus on a few key themes and highlight some of the wider implications of the outcomes.

Outcomes

Overview

The open nature of the interview encouraged learners to be frank about their experiences, and the detailed analysis of the transcripts revealed a number of recurring themes. These included aspects such as the emotional impact of technology on motivation and self-esteem, and learner expectations of how technology should and could be used to enhance their learning. Issues of control came strongly to the fore, as did individual strategies for coping with both the technology and the prescribed learning activities.

In terms of effectiveness, those learners who were confident in their ability to learn with technology displayed the following characteristics:

1. a sound understanding of their learning at a metacognitive level;

2. an awareness of the positive impact of learning on their own identity, leading to high levels of motivation and a constructive attitude;

3. the ability to capitalise on the affordances of technology for informal as well as formal learning;

4. a willingness to fully develop the skill set required, including ICT and communication skills, in order to fully engage with e-learning;

5. the confidence to overcome both pedagogical and technical difficulties;

and most crucially:

6. the ability to take advantage of technology to network with friends, peers, family and tutors in order to build up the personal support structures necessary for their learning.

Despite differences in gender, age, educational background and learning context, the learners' attitudes and opinions displayed marked similarities in several aspects, as evidenced by the selected quotes below. Indeed, as the research team discovered, attempting to match learner quotes with learner profiles proved to be a salutary exercise in highlighting the sometimes false assumptions and generalisations practitioners tend to make when designing, teaching or supporting e-learning.

Flexibility and preferences

Unsurprisingly, flexibility emerged as a key factor in learner appreciation of e-learning. Previous studies have shown that use of technology for learning can lead to a blurring of boundaries between the experiences of on- and off-campus learners (e.g. Jones *et al*. 2001), and our own sample bears this out. Of those taking part in formal courses, 24 were in full time education and 19 were studying part-time. The majority (71%) were also in employment, with 18 working full time and 21 part-time. Inevitably then, flexible access to course resources, communication, and tutor feedback were important aspects of their learning experience, particularly so for adult learners who often had to juggle family commitments. They valued the opportunity to fit learning activities into a busy day, as this learner explained:

> 'I can do them anytime, anywhere. At home, at work, when I've got ten minutes in between meetings, half an hour between other things … you can slot it in any day of the week, you don't have to take a whole chunk out of your day …'
> (Rebecca, *mature student*)

Learners also appreciated having one place to find course resources and feedback. They saw the Internet as a complete information resource in their everyday lives and increasingly expected learning to be accessible in the same way:

> 'I think that's very helpful, we get to work through that at our own pace and it's all on the web page at the college.   It's good that everything's on there so I can access it from home, I can access it from work, I can access it in here …'
> (Peter, *adult returner*)

'So that's really good, just to log on from home and you can see what's going on straight away, you know, … you just feel kind of connected, it sort of keeps you up-to-date.'
(Kirsten, *young undergraduate*)

Despite this, they had strong preferences as to why and how technology should be used for learning. They clearly valued having materials available in print where appropriate as well as in digital format, which they often saw as an important time saver. They also had clear views on which types of learning activities were best supported by technology, as these learners stated:

'Well to be honest I haven't really been watching the [video lectures], [laughs] because you can get transcripts of them and I would rather just read the transcripts, it takes a lot less time to read over five pages than it does to listen to somebody speak basically for half an hour.'
(Cathy, *young undergraduate*)

'I would prefer actually meeting because I find it's easier to discuss these things face-to-face, so I would rather we were all sitting in the same room talking about it … but quick questions that you just think of and you'll maybe not see any of them for a couple of days, it would be Blackboard or email that I would go with.'
(Peter, *adult returner*)

Attitudes and awareness

Experiences of using technology in everyday life can have a major impact on how learners cope with e-learning. The study uncovered a wide range of learner attitudes towards their own information technology abilities, along with a sophisticated awareness of those differences. Their relationship with technology was often described in very personal terms. The evidence suggests that this can affect attitudes towards communicating with both tutor and peers, and creates a 'them and us' mentality which may be difficult to overcome if not addressed by tutors at an early stage:

'There were 37 of us on this course and you range from total beginner, like myself, to really, like, IT specialist, so they had absolutely no problem and had a lot of confidence in talking to each other on discussion boards because they'd obviously done it before …'
(Michele, *adult learner*)

Several of the adult learners expressed the view that their younger peers were more adept at using technology, but it was also clear that once they overcame any initial reservations, the more mature learners adapted very quickly to e-learning, as this learner observed:

> 'I think a lot of the stuff that younger people would find a lot easier I find harder, but then again I think to compensate for that I try harder.'
> (Paul, *mature undergraduate*)

Learners expressed real attachment to personal gadgets such as mobile phones and iPods, and many were confident networkers, making frequent use of social software and collaborative tools such as MSN and MySpace:

> 'I think in the future people can't cope without their laptops. My main use of it is I guess social networking. It would be MySpace and Messenger and email, things like that, and then secondary would be information gathering … like I said, my home page is the technology website and current affairs, news. I have alerts coming into me so I get information, and then I use search engines for academic purposes.'
> (Emma, *young undergraduate*)

The human aspects of e-learning were also highlighted by learners as important influences. It was clear to them at an early stage if a tutor lacked confidence with technology or was not fully engaged in e-learning activities, and they quickly recognised situations where they were more skilled than their tutors:

> 'I think it depends on the teacher really … if they're on board with it a hundred and ten percent then you'll be included. If they're not then they won't use it and neither will you.'
> (Vanessa, *languages student*)

> '[online and classroom activities] still feel like they're completely divorced from each other because often the tutors don't know anything about the online projects … so you can't really discuss them and they're really different issues that come up.'
> (Cathy, *young undergraduate*)

Learners were quick to spot differences between tutor usage of technology and could find this frustrating, as these learners clearly expressed:

> 'Not all the tutors support Blackboard as well as each other, some of them are much better at it than others and when you become maybe comfortable with one tutor and he's extremely

helpful on it, you sort of expect that from maybe some of the others but there's probably a couple who don't use it much at all.'
(focus group participant)

Feelings and Choices

The study uncovered strong emotional responses to technology of which tutors were generally unaware (c.f. Hara & Kling, 1999). For new learners in particular the design of the learning environment could be a shock, whilst other more experienced technology users described it in terms such as 'quaint' and 'old-fashioned'. First impressions could be daunting and often had an ongoing impact on attitudes and motivation:

> '… no one really taught us how to use [the VLE] … We sort of got thrown in the deep end, so a lot of people on my course are still finding that they can't get into their web mail or they can't get into [the VLE] … we knew our password after a week in the library, so we're standing there fuming … no one seems to tell us …'
> (Laura, *young undergraduate*)

Learners often expressed concerns over how the course design influenced their learning and they were highly aware of issues relating to control and choice. Where choice over tools and activities was not available, learners often seized opportunities to take ownership of their learning:

> 'It just depends on how the course provider lays out the [online] course and how they allow you to access the course. Because of course they still control how you learn and at what pace you learn, even though access tends to be controlled by me … They don't dictate you must be there every Tuesday between 9 and 11 … that's the part that you can control. The rest of it is up to the course provider.'
> (Rebecca, *mature student*)

> '… we always text each other and say 'Oh, are you coming in at this time' or 'we'll meet at this time' [for group work] and so it looks on the face of it from the university website that we haven't been communicating all year but we have, it's just outside of that [discussion] board'.
> (Kirsten, *young undergraduate*)

Where learners were given control of their learning e.g. through learning logs, creating resources or building e-portfolios, the study

found the highest levels of engagement and enjoyment. They often used the technology to form their own support groups, and to pull in help when it was required:

> 'Yes, [the learning log] is probably the most enjoyable bit I've done. It's your own learning, it's all what you write which is … more interesting to you. … I think it's because … you can relate it to your own experiences and … you've got a free role …'
> (Nick, *undergraduate student*)

> 'I don't post [into the discussion board] as much as other people do. I use it, like, once or twice a week, but … we contact each other in the evenings over MSN Messenger if we're doing work quite a lot, or just text.'
> (Kirsten, *young undergraduate*)

Being able to control their own learning environment, both virtual and physical, can make an important difference to learners and may be vital to accessibility. This was essential to this learner, and her friend:

> 'You have your own set up at home; one of my friends has thalidomide but she can sit and type for hours because she's got it set up so that it's all here for her … so it's nice if you can do it in your environment that's set up for you and that you're comfortable in …'
> (Jenny, *adult learner*)

Discussion

The findings confirm many previous net generation studies by demonstrating the increasingly ubiquitous nature of technology in learners' lives (Seely Brown, 2000; Oblinger & Oblinger, 2005; Roberts, 2005). They also provide us, however, with a valuable reminder that our student profile is diverse in many ways, and that in exploring the expectations of a younger generation, we should remain mindful of the needs of adult learners (Garcia & Qin, 2007). Based on the expectations articulated by the learners therefore, tutors and course designers have much to live up to. Effective learners have refined views on e-learning and how it might advantage or disadvantage their studies. They believe that technology should be used to enhance their learning and are clear that they will not engage with it if they feel it is not to their personal benefit. From the outset, many learners display emotional reactions to e-learning which often impact on their attitudes and levels of motivation (see also O'Regan, 2003; Dickey, 2004). For most, technology is an integral part of their

lives and they feel particularly strong attachments to their personal gadgets such as internet-enabled mobile phones, MP3 players and laptops, which they use to support their learning, often experimenting with innovative usage.

E-learning practitioners aim to encourage independent, self-motivated learners (Timmis *et al*. 2004), yet the evidence presented here suggests that as learners develop a more sophisticated view of e-learning, there continues to be a certain reluctance on the part of tutors and course designers to incorporate the level of flexibility and choice that new generations of learners are demanding. At a basic level, this may be as straightforward as designing collaborative learning activities which acknowledge students' use of social software (Littlejohn & Pegler, 2007), empowering students by inviting them to facilitate online discussions and engage in peer review (Rourke & Anderson, 2002) or creating flexibility through re-usable digital resources (McGill *et al*. 2005).

From the interview data gathered, we can deduce that e-learners expect:

1. evidence of a sound rationale as to why technology is being employed and how it will benefit their learning;

2. e-learning to be fully integrated with more traditional approaches in a way that is relevant to their context;

3. essential course materials to be easily accessible online, and where appropriate, also available in alternative formats;

4. all course tutors to have up-to-date ICT and e-tutoring skills in order to provide a consistent and well-supported environment for learning;

5. to be given a positive introduction to e-learning through supportive induction sessions and starter guides on the e-learning environment;

6. peer support and collaboration to be acknowledged as an important aspect of learning with technology, which may take place in different ways using a variety of communication tools;

7. to be granted more personal control and choice over learning environments, learning activities and the range of technologies used.

Conclusions

It is clear that student approaches to learning are changing, underpinned by their widespread use of technology. Evidence from the LEX study suggests that a mismatch often exists between student expectations of e-learning and institutional provision across all post-16 sectors. Whilst students become more confident and diverse in their usage of technology, many institutions are understandably concerned about security and control issues, particularly those surrounding mobile devices and social software tools. This confirms earlier predictions that 'attitudes and aptitudes … may create an imbalance between students' expectations of the learning environment and what they find in colleges and universities' (Oblinger, 2003, p.6). If the interplay of life, learning and technology is to be fully supported, learning design needs to recognise the complexity of learners' lives by acknowledging their varied experiences of technology and providing sufficient opportunity for personal choices. This may be a daunting prospect for tutors and course designers who in many cases have become by default the 'digital immigrants' as described by Prensky (2001). Nevertheless, this affords them an important opportunity to reflect objectively on the value of the new tools and to work with their students to bring a fresh perspective to their use for learning (Senjov-Makohon, 2006).

While some of the themes that emerged in the study may be familiar, others are less so and warrant further investigation. These include:

1. the 'underworld' of digital communication among learners;

2. the increasing prevalence of informal learning through technology;

3. the extent of learner choice and control over technology, learning activities, and their learning environment;

4. the emotional aspect of technology enhanced learning and its impact on confidence, self-esteem and motivation to learn.

LEX data collection took place at a time when great changes are taking place in the use of personal technology and online social networking. The transformation in the way people use technology in everyday life for communicating, building networks, finding information and much else, is profoundly affecting how technology for learning is seen. Although the LEX study offers only a snapshot of the learner experience, it has opened a small window onto the previously hidden world of student attitudes, feelings and behaviours towards technology. Further longitudinal research exploring the

learner journey over an extended period of time is now required to help us understand in more depth the full complexity of the e-learner experience.

Notes

[1]   The term Interview Plus was coined by Helen Beetham, consultant to the JISC Pedagogy strand, to describe the conduct and analysis of individual interviews supported by appropriate learning artefacts.

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Kathryn Trinder is a Research Fellow (e-Learning) in the Caledonian Academy at Glasgow Caledonian University. Her background is in visual communications and learning technology. She has worked in the fields of media production, development of teaching and learning materials, learning technologies and pedagogies, and staff development in e-learning for almost 20 years, and is currently developing and teaching e-learning at postgraduate level.

Doug Gowan is Chief Executive of the Open Learning Partnership (OLP), an educational charity with trustee membership from three further education colleges based in north London. The OLP was established in 1997 and specialises in developing all aspects of e-learning, Moodle services, learner surveys, connectivity, mobile and wireless access, online qualifications, learning centre capacity building, staff training and consultancy on project management.

Carol Howells is an e-learning developer, also of the Open Learning Partnership, and has 11 years experience of designing, developing, and supporting e-learning for a wide range of learners and tutors. She has extensive online course design, VLE administration and teaching experience in Internet studies, web design, ICT and tutor training.