Learners' expectations and experiences of the digital environment in the Further Education and Skills sector

A review of the literature conducted for the Jisc FE Digital Student project

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1. Aims

The purpose of this review is to discover existing literature on learners' experiences and expectations of the digital environment within Further Education (FE) and the wider skills sector in the UK. It aims to examine:

- what technology learners own and have access to when they enter FE;
- what technology learners expect to be provided with by their colleges;
- how learners make use of the technology and digital environments they are provided with and whether learners have a voice in determining availability and access to technology to support their learning;
- how learners' expectations of technology use are formed and change during time spent in FE;
- and what is distinctive about learners' experience of using technology in FE.

The review is part of a wider project to investigate learner's expectations and experiences in order to make recommendations on the services that that could be provided by colleges and Jisc to support learners' use of technology. The findings of the literature review will be complemented by focus groups with new and later stage learners in further education colleges.

The project outputs will support colleagues and senior leaders in the Further Education and Skills sector to monitor and act on changing learner expectations of learning in a digital environment.

2. Context

The most striking feature of the Further Education and Skills sector is its diversity: some students attend an FE college instead of school, some take vocational qualifications and others choose to study higher education (HE) courses within a FE college setting (Bhatt, 2012). The wider skills sector encompasses specialist colleges, adult and work based education and offender learning. There is great variety in the places where learners in this sector will learn and the qualifications they can achieve (Lucas, Spencer & Claxton, 2012). Learners come from a great variety of ages, backgrounds, prior experiences and achievements and consequently approach their studies differently.

Such diversity means that it is difficult to generalise about *the* learner experience. It is vital that we listen to our own learners in order to inform our choices about how we plan, support, introduce and facilitate learning activities, and to engage learners in the decisions that we make about their learning environments. Crucially, we need to understand what all learners bring to the learning context and to be able to understand how different learners interpret our planned activities, resources and environments.

The FE sector is responding with enthusiasm to the digital age, with many examples of creative uses of technology in the classroom (see for example Jisc, 2012). In recent years there have been numerous reports from sector organisations, calling for: a policy roadmap (ETF, 2014) support for FE college leaders (Fordham and Martin, 2014), developing teachers' competence and confidence (Rebbeck, Ecclesfield and Garnett, 2012), self-assessment tools (Coralesce, 2014), and using technology to hear from students about their experiences (LSIS, 2013).

Learners and their lecturers are living in a technology rich environment which is rapidly changing. Social and technological advances mean that learners' experiences and attitudes towards the role of technology in learning are also changing rapidly. It is therefore essential that the FE and Skills sector continues to conduct learner experience research at both the local and the national level to keep pace with changing learner expectations.

3. Method

The review has considered published material in both the academic and grey literatures. Members of the FE and Skills sector, and its stakeholders, have been consulted in the process, suggesting documents and papers. Some institutions which took part in the learner focus groups also provided internal institutional reports. We excluded papers before 2006 and literature in a non-UK context.

The search strategy included:

- Library databases: Academic Search Complete, Applied Social Science Index and Abstracts, British Education Index, ERIC, IngentaConnect, PsycInfo, Web of Science using keywords further education/FE AND technology/IT or Information and Learning Technology, post-compulsory education/VET/Vocational studies/A levels/apprentices AND digital environment/use/practices, VLE, learning technology or any combination of these terms.
- Content pages of relevant journals in the field: British Journal of Educational Technology, Journal of Research in Post-compulsory Education, Journal of Research in Lifelong Learning, Journal of Further and Higher Education, Journal of Vocational Education and Training, Journal of Teaching in the Lifelong Learning Sector.

A first finding is that there is very little published research from the FE sector in the academic literature on students' experiences of technology. Because of the scarcity of relevant peer-reviewed articles, we also searched for reports at:

- Community collections: Teaching in Lifelong learning at Bath Spa University, Excellence Gateway archive (case studies until 2008-2009) and the Jisc Regional Support Centres website for case studies in FE and Skills sector (case studies for 2013 and 2014)
- Organisational websites: Education and Training Foundation, Association of Colleges, Association of Learning Technology, Department for Business Innovation and Skills, Department for Education, Coralesce Ltd., Gazelle Group, Learning and Skills Network, Becta, Association of Employment and Learning Providers, National Institute of Adult and Continuing Education, Learning and Skills Improvement Service, Ofsted.

Institutional documents (mainly with data from surveys undertaken at institutional level) not publicly available were secured after contacting individually all the colleges that had expressed an initial interest in the study. We provided granular levels of anonymity to the individuals and institutions concerned, allowing respondents to instruct us as to how each document they provided us could be used and the levels of privacy and restrictions on distribution they required (consequently, some institutional documents are not cited directly but are simply referenced as "Inst.").

We encountered the following difficulties with the review:

- National projects, surveys and collections ceased after 2008-9 e.g. the Becta Learner Voice surveys.

- Little quality research investigating learners' experiences and expectations in the sector. Where there has been an exponential increase in small scale studies of learners' experiences in higher education, providing rich sources of data, we found only a handful of projects conducted with students in further education, and none after 2010. The main studies on which this review is based are listed in Table 1. We need to stress that the FE sector is very different from the other education sectors and there is a paucity of research from practitioners working in it. This has to be understood within the context of a heavy reliance on casually contracted staff, high staff turnover and extensive face to face teaching requirements. In addition the sector has experienced much disruption since 2010 with many sector organisations, which previously would have commissioned research into learner voice, losing their government funding.[1]
- Although there are many reports of practice of using technology to support learning, they tend to present a teacher centred view and are rarely supported by formal evaluations.
- Most sector reports which make recommendations for policy and practice in using digital technology do not incorporate or refer to evidence from research into learner experiences and expectations.
- Collections of case studies are not tagged for 'learner experience'. For example, for the Jisc RSC case studies, we searched by topic using the tags or tag bundles on the Delicious bookmark listing; however the process was very time consuming as learners' experience is not included in the listing, nor it is possible to use other keywords (i.e. only the available tags on delicious) and so we needed to read them all in order to choose.

Consequently only a small proportion of the academic papers and organisational reports which we considered were included in the final set for review. All included documents were uploaded to an Endnote database which contains: 8 peer reviewed articles, 23 sector reports, 25 case studies and 7 unpublished institutional documents. There is tension between a desire to recognise a great amount of innovation we found in the sector, and the limitations of case studies of practice which present a teacher centred view of the learner experience and frequently set out to make a case for the benefits of the investment made in technology. Our approach has been to make use of frameworks and findings based on trustworthy research and illustrate these with examples using stories and quotes from the case studies.

1 At the time of writing a new sector body, which has replaced the Learning and Skills Improvement Service (LSIS), the Institute for Learning (IfL) the Centre for Excellence in Leadership (CEL) and the Learning Support Network (LSN), is influencing the sector and driving forward change. The Education and Training Foundation, as the new sector body is required by government to be self-funding by 2016. Expectations of organisational sustainability make funding for research something of a luxury in times of financial constraint, making this research project all the more important.

Table 1: learner experience research studies in further education (2006-2014)

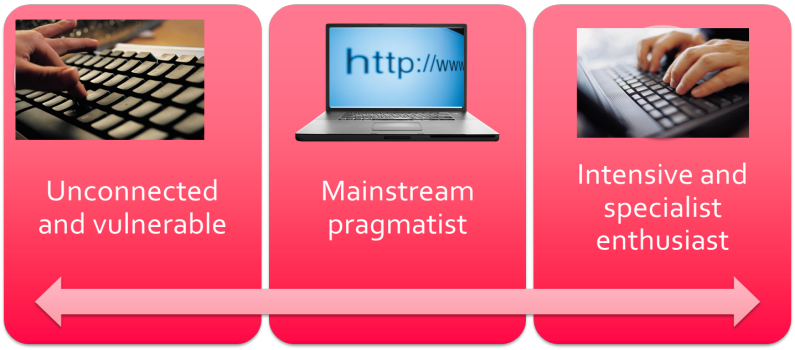
Reference(s)	Project Name	Funder and dates of data collection	Summary
Miller & Satchell (2006) Mannion et al (2009)	Literacies for Learning in FE	Economic and Social Research Council, Teaching and Learning Research Programme (2003-2006)	The collaborative ethnographic study focused on the use, refinement and diversification of literacy practices as students participate in FE courses.
Attewell et al (2009) Attewell et al (2010)	Mobile Learning Network (MoLeNET)	Learning and Skills Council (2007-2010)	An initiative that supported 104 action research projects using mobile technologies involving approximately 40,000 learners and 7,000 staff.
Davies & Good (2009) Davies et al. (2010) Davies (2010)	The Learner and their Context	Becta (2008-2010)	The research team interviewed 132 young people and visited the homes and family members of 35 of them to talk about their technology use.
Becta (2008)	Survey of FE learners and e-learning	Becta (2007)	4000 phone interviews, stratified sample to reflect FE population, asking about confidence, access, use of and attitudes towards technology.
Pepler (2009)	Learner Voice Pilot study	Becta (2009)	Pilot to see if a learner voice survey could complement annual college e-maturity survey of staff views. Received 745 responses from students at 4 colleges (unrepresentative sample).
Dailly (2010)	The ETNA Report	Jisc RSC (2007-8)	Analysis of the skills and attitudes towards technology in Scottish FE from 678 learners who completed an online survey (response rate 0.001%, unrepresentative, self-selecting sample).
Bhatt (2012)	Digital literacy practices and their layered multiplicity	Unknown - PhD research.	An ethnographic single informant case study with a student on CACHE Certificate Child Care Level 3 in a FE College in West Yorkshire.

4. How do learners experience the digital environment?

Given the diversity in the learner demographics, backgrounds, qualifications and modes of study, it is unsurprising that learners in further education experience digital environments in a myriad of different ways. There is tendency in sector reports to present learners as confident, positive and motivated about the use of technology. For instance, in the eLearning & IT Strategy of one FE college it is stated that "modern learners expect and are familiar with technology and global communication" and that "social networking sites such as Facebook, Twitter and Myspace are regularly accessed by young people and adults". The strategy aims to capitalise on learners' use of media communication and meet their expectations (Inst., ELearning & IT Strategy, 2009). This language is typical of the way in which learners, especially young learners, have been characterised, as if they have access to technology, are proficient in its use and have ideas to contribute about its role in learning.

Even the Further Education Learning Technology Action Group (FELTAG) report referred to the 'under-exploitation of learners' skills, devices and technical knowledge when it came to the use of learning technology', explaining that 'the greatest resource available to FE and Skills providers in this domain is their learners.' (BIS, 2014, p.5). This generalisation ignores the complexities introduced by considering all learners. For a sector which sets out to 'provide flexible curricula tailored to individual needs' (Jisc, 2012, p.1), it is essential to understand how the environments provided are experienced by all learners.

Figure 1: a spectrum of learners (After Davies et al., 2010)



An attempt to describe the entire population was made by Chris Davies and colleagues in the Learners and their Context project (Davies et al., 2010, see Table 1). The report presented a spectrum to describe 16-19 year old learners from intensive and specialist enthusiasts, to mainstream pragmatists, and unconnected and vulnerable learners (see Figure 1). The majority regularly used digital technology in their home for a range of purposes and could be considered 'mainstream pragmatists'. Interestingly, by 2010, the 3rd year of data collection, learners were in general less enthusiastic than previously and saw technology as mundane and necessary. Interviewees spoke of only being on Facebook because they had to, because everyone else was, rather than because of any enthusiasm for it.

This framework is used to explain how learners experience a technology rich learning environment in different ways and how they might be best supported.

a) Access (technology) led

For unconnected and vulnerable learners, such as learners with special educational needs and mainstream learners without regular access to the Internet at home, their experiences are dominated by issues of access to technology. For a minority of learners in the FE and Skills sector, college is where they are introduced to technology. The large scale Becta surveys were last conducted in 2009 and found that, nationally, 82% of learners had access to internet-connected computers in their homes at that time (Davies & Good, 2009, see Table 1). Six years on from the last Becta survey, the proportion of students who still fall into this category is smaller. A report by Policy Exchange states that 91% people aged 16–24 now have access to the web at home in one way or another (although this figure includes the 1 million young people not in education, employment or training who may have never used the Internet (Fink, 2012)). This still leaves a small minority of digitally excluded.

Why does there remain a proportion of population who are unconnected? The Office for National Statistics claims that last year there were still four million households in UK without Internet access; approximately one in five households (20%), and these indicated that they did not have Internet due to a lack of computer skills, or due to equipment and access costs (13% and 12% respectively) (ONS, 2013). Clearly, we have a responsibility to provide access to such learners, although solutions are not always obvious. In the Becta survey, there was a correlation between learners having personal access to the Internet and the extent to which they use the Internet for their school or college work. That is, learners who do not have access at home, were not necessarily taking advantage of the facilities provided by college (Becta, 2008).

Learner experience research offers some suggestions on working with learners at this point on the spectrum. One of the key findings from the MoLeNET projects was that one of the impacts of mobile technologies is to 'help to overcome the digital divide between those learners who have broadband access at home and those who do not' (Attewell et al 2009). It seems that these learners are best supported where provision is targeted at their access needs. Indeed, by participating in MoLeNET projects, colleges were able to support, for example, digitally excluded learners' homework and additional study at home since, giving them access to mobile technology in many cases also meant giving them access to the Internet too (Attewell et al., 2009). MoLeNET reports provide also a number of suggestions relating to the benefits of games technologies that appear to be particularly valuable for supporting and motivating disengaged learners, learners not in education or training, learners with learning difficulties and/or disabilities, and learners with numeracy or literacy development needs (Douch et al., 2010).

Illustrative examples

The following are case studies that illustrate targeted solutions for such unconnected and vulnerable learners. It is noted that most of these were concerned with access related to specific learning needs (the 'vulnerable'), rather than access to technology per se (the 'unconnected'):

- At Accrington and Rossendale College mobile technologies were used to support homeless, drug rehabilitation and traveller education groups as part of a MoLeNET project. Courses in these areas were delivered off the main college site as none of the groups were able to come into the college and *most of the learners did not have access to computers or the internet at home.* Mobile technologies were used to support these learners by creating 'portable classrooms' with small netbooks, a staff laptop, a portable projector, a camera and an internet connection, as well as a variety of freeware software such as Windows Movie Maker, Audacity and Photo Story (cited in Attewell et al., 2010).
- Walsall College participated in the national MoLeNET initiative in collaboration with local schools. The project involved a range of over 300 learners not in education, employment or training (NEET), many disengaged to middle ability, working towards obtaining their GCSE. The college embraced games technologies and chose to use Nintendo DS handheld devices in literacy and numeracy lessons to engage these young learners who were living in one of the most deprived areas in England. The outcomes included improvements in learners' behaviour, alertness and focus, confidence and mental arithmetic (cited in Douch et al., 2010).
- Learner Ambassador: using AudioNote to record notes in a Psychology class at City of Glasgow College. This case study focuses on Omar, an HNC Social Care student with dyslexia. His tutors in collaboration with the Learning Support team found suitable solutions to support his needs and remove barriers to his learning, particularly within a classroom environment. Omar reported that using AudioNote enhanced his abilities to learn and to participate in group work (**Jisc RSC Scotland, 2014a**).
- Somerset College: e-Books increase access and availability of library resources (**Jisc RSC, 2011a**). The introduction of Kindles in the college's library had positive impact on students' learning but benefited in particular the more vulnerable students with disabilities. One student reports:

  > "It helps with my sight impairment because I am able to change the size of the font, which I find very helpful because a lot of books I find have small fonts. Another thing I like is the fact that it helps with my dyslexia because it reads the words back to me. This makes me able to read along with the Kindle" (Laura Kent, Somerset College student).

Similarly, again in Somerset College, the learning resources team have developed an extensive set of multimedia tutorials, which have proved to be particularly helpful to students with learning difficulties or disabilities. For example, students with visual impairments were able to listen to the audio for tutorials, which provided them with greater flexibility and learning options. There were also different colour overlays available for students with dyslexia to help them view the tutorials more clearly (**Jisc RSC, 2014**).

RNIB College Loughborough - a specialist college that supports people who are blind, partially sighted and/or have learning difficulties, autism, Asperger's, mobility difficulties and chronic illness - piloted a text-to-speech/scanning software on mobile phones for the visually-impaired learners. The major advantages of this initiative were the accuracy and the portability of the device, which made things easier for these learners but the drawback was the cost involved. 80% of learners felt that the project had positively affected which mobile phone they would consider buying in the future and 80% of learners also felt that being part of the project had made them more aware of the useful software available and that they would consider purchasing such software for themselves (**Excellence Gateway, 2009**).

Finally, in Northern College for Residential and Community Adult Education, Zoe, an autistic and dyslexic learner, was provided - alongside her personal support worker - an iPad to help her complete her studies. The iPad allowed her to communicate, feel safe and included, boosted her confidence and helped reduce her stress levels (**Northern College, 2014**).

b) Tutor (pedagogy) led

For mainstream pragmatists, their experiences are dominated by issues of pedagogy. This group encompasses the majority of learners whose experience of using technology is influenced to a large extent by the activities designed by their tutors and the environments provided by their institutions.

There are many examples of positive, tutor-led initiatives to enhance learning in the classroom. In his review of FE Ofsted reports, Judges (2013) refers to cases of learner use of mobile technologies (including tablets, mobile phones/smartphones and apps) and the use of social media and/or networking (including blogs), and notes that courses rated as 'good' or 'outstanding' typically reported the successful and 'creative' or 'imaginative' use of both mobile technologies and social media in order to stimulate and support students' learning. In contrast, in subjects/courses rated as 'inadequate' or 'requires improvement' teachers did not use the available technology "creatively", "imaginatively" or "innovatively"; they seemed to have good access to equipment and new technologies to support learning but too often this expensive technology was used only for PowerPoint presentations: "the interactive features of new technologies are not used sufficiently" (p. 102); "teachers fail to realize its full potential" (p. 23); "much use is unimaginative, with insufficient involvement of learners in interactive programmes or teachers spending too long talking through computer presentations" (p. 106).

Learner experience shows that left without the guidance of a creative teacher, learners tend to use technologies in passive, unimaginative ways. For example, the ETNA survey found that the majority of learners who responded to the survey have quite high levels of awareness of Web 2.0 technologies but their engagement is often *passive* - with the exception of social networking and file sharing. For example, both blogs and wikis are treated by the majority of students as passive media and very few use them as a 'formal' part of their course (ETNA, 2010, see Table 1). This reinforces the findings from the Learners and their Context study, in which technologies were used for homework in order to research information using Google and Wikipedia mainly (in the awareness that this was not always approved by teachers and parents), and to improve the appearance and content of their work.

Recent sector reports have highlighted the crucial role of the teacher, noting that although teachers are curious, some lack the confidence to use digital technologies. Teachers lack time to experiment, funding to purchase

digital tools and convenient ways to access appropriate professional development or share innovations (Rebbeck et al., 2012; FELTAG, 2013). Recent unpublished data from staff surveys (Inst., 2014) revealed that teaching staff appreciate the use of technology especially for engaging their students (77.55%) and also for learning to be accessible beyond the classroom (65.31%). Their main barrier for using technology in classroom was considered to be the lack of time (61.54%), whereas the second barrier was the unreliability of the technology used (55.77%). In contrast to the sector reports, lack of training and lack of confidence was not amongst the important reasons for not engaging with technology in their teaching (26.92%). However, findings from the same survey did show that staff tend to use technology that they are familiar with; that is, they are less willing to try new technologies for learning.

A position paper produced by the Association of Colleges and Association for Learning Technology argues for a transformation of teachers' role from expertise to collaboration and shared agency (AoC & ALT, 2014). The recent Digital College programme aims for a shift in teacher behaviours, rituals and systems to enable FE teachers to transform the way they teach and explore new pedagogical practices exploiting emergent technologies to enhance students' learning (Education and Training Foundation, 2014).

Illustrative examples

Of relevance here are case studies that illustrate how learners experience active pedagogies. Not surprisingly, learners like classes that are 'fun, new and dynamic' (Fabian and MacLean, 2014), and it is likely that the novelty of the experience, and the enthusiasm of the lecturer, leads to their initial engagement:

- Hospitality students at Lewisham College created a CV using Mahara, making it personalized and sharing it with prospective employers. This helped students being more confident about showcasing their work and look for work experience, more focused and employment oriented (**Burbridge & Forrest, 2010**).
- In an interventionist/action research project, Fabian and MacLean (2014) assessed the benefits, and potential pitfalls, of the use of mobile devices in learning and teaching activities in a Further Education environment. A bank of 15 tablet devices were purchased and prepared for classroom use. An evaluation of this trial showed that most students rated enjoyment of tablet-based activities quite highly (n=72).
- The use of apps at Clydebank College in Beauty Therapy, Sports and Health Care "made the class more interesting than reading from a book" (**Jisc RSC Scotland, 2012**).
- New College Durham has developed an interactive quiz for learners on BTEC national certificate in Sport that assesses learners in a fun way. The quiz encourages, enthuses and motivates learners, and adds value to the course by promoting cooperative learning. It also builds on their competitive nature:
- "It was good to have a competitive element and it made me more motivated to do well"; "It was planned well and motivated everyone as they did not want to lose" (**Excellence Gateway, 2010a**).
- Quizzes and games for Medical Administration students were piloted at Glasgow Clyde College. Feedback from the students indicated that they enjoyed these tasks, *particularly competing against their own scores in the gaming section* (**Jisc RSC Scotland, 2014b**).

- The delivery of Functional Skills streamlined through the use of video conferencing and webinars - simultaneously to learners over several campuses at both Lewisham and Walsall Colleges - proved to be a valuable and enjoyable experience for the learners. In their evaluations of the sessions, 99% of students reported that had never experienced a similar type of lesson before, while 100% reported that they could fully participate and would like more lessons like this (**Jisc RSC, 2012b**).
- A carpentry lecturer at Thanet College has transformed the teaching and learning of this vocational area by interweaving Web.2.0 technologies such as Google docs into Moodle courses. Learners appreciated the remote access of information, the flexibility and the freedom to learn at their own pace (**Excellence Gateway, 2010b**).
- QR Codes and augmented reality mobile applications at Lowestoft College have encouraged students to use college's mobile devices and their own devices for learning. Learners from a range of courses including Special Needs, Travel and Tourism and Maritime appreciated the access to extra information, the freedom and anonymity of access and the 'on the move' access (**Jisc RSC, 2013b**).

The pedagogy is also influenced by decisions made at the institutional level. We found examples where the digital environment of a college affected learners positively, empowering them, enhancing their self-esteem and confidence and helping them learn independently:

- At Lewisham College, learners completed their Personal Development Plan electronically and reported favourably on its use. Many of them stated that the ability to access it online means that they do not need to carry around a student planner and over 70% felt that setting targets helped them to progress and achieve:
  - "It's good for your self-esteem when you see good stuff and you see all distinctions and good attendance and punctuality and it's something to be proud of." (Music student; **Burbridge & Forrest, 2010**).
- According to an institutional survey, most learners reported that the ability to see their attendance and punctuality, without having to ask in the campus office or be told by their tutor, offered them a sense of independence and provided motivation to maintain or improve their attendance and punctuality. Learners also liked the ability to use the tracking system both on and off campus (Inst., ELearning Audit, 2013; Inst., eLearning Corporate Audit, 2012).

c) Learner (Social) led

For intensive and specialist enthusiasts, their experiences are dominated by the extent to which they are able to appropriate social and personal uses of technology for learning purposes. FELTAG characterises such learners as 'digital leaders' and recommends engaging and empowering this group so that they can 'fully exploit their own understanding of and familiarity with digital technology for their own learning' (BIS, 2013, p.5). It is important to remember that this group is a minority of our population. Davies et al. (2010) report that the majority of learners in FE do not use their access to technology as effectively as they might when it comes to their learning. Although young people in general are enthusiastic and confident technology-users, only a minority of sophisticated users have developed self-directed approaches to their formal learning.

That said, certainly there is much we can learn from these learners, who have fascinated learner experience researchers. Almost ten years ago, the Learning for Life in FE (LfLFE)

project found that "the literacy demands and practices of further education colleges are not always fashioned around the resources people bring to student life and, crucially, the potential for greater interaction between these literacies". This early work showed how some FE learners consider their home or leisure practices to be dominant and give more value to them than those espoused at their colleges. These personal literacy practices, also called 'vernacular' literacy practices, were purposeful to the students because they were orientated to an audience, shared with others, in tune with students' values, non-linear, multi-media, under the students' control, varied and learned through participation. Digital literacy practices developed in a personal context (i.e. home practices) appear, thus, to have a high degree of *purposefulness, ownership and commitment*, which are not apparent in the tasks learners are asked to complete in college (Mannion et al., 2009).

What is more, the LfLFE study also found that these literacies embraced by students were not valued by the college teachers; indeed, students had to learn another whole set of 'assessment literacies' for their college course. There seems to exist clear 'dissonances' (i.e. contradictions and inconsistencies) between the domains of home and college (and also other contexts, such as work or leisure) (Mannion et al., 2009). For one of the participants in their study, 'Stephen', listening to music, playing computer games and doing 'personal' research on the internet were not part of the 'college domain' because he felt these practices were not valued there. This is what Miller and Satchwell (2006) have called a deficit model of literacy which does not take account of students' everyday literacy practices. The recommendation from the LfLFE project was that learners in FE should be able to participate in learning and demonstrate their knowledge and skills using their existing literacy practices.

Data showed that learners, at the start of their studies, were prepared to abandon areas of strong personal interest, such as media study, graphics, computing or journalism, for what were considered by the adults in their lives (both at home or at school) to be more sensible choices, as technological careers seem not to be credible (Davies et al 2010).

Learner experience research shows that recognition and respect for learners' everyday literacy practices will help teachers understand their students and, crucially, will help to negotiate the borderland between home/leisure and educational/curriculum practices (Miller & Satchwell, 2006). Conversely, college rules, such as no mobiles in class, no social/non-educational chat, and no using home email addresses, seem to be a problem and a barrier to this. As Bhatt (2012) comments, colleges often attempt to "prevent such flows by sharply demarcating learners' social networks and their academic environments as distinct areas of digital literacy practices which ought not to be brought into contact with each other" (p.297). Consequently, college acceptable use policies are often ignored by this minority of sophisticated learners.

The following are examples of: students using 'non-acceptable' social media for their studies; and colleges that have changed their policies in order to support students to use their vernacular digital practices for learning purposes.

Illustrative examples

Bhatt (2012) conducted a single ethnographic case study with a student on CACHE Certificate Child Care Level 3 in a FE College in West Yorkshire. The research participant 'Sara' described many literacy practices of her personal and social sphere as *directly connected* to her curricular activities. For instance, she used Facebook for communications with other students on the course because she knew her friends would be online and could give a quick response. In this case Sara's embracing of social networking in her personal life 'infiltrated' the way she approached her course related studies, even when this went against the teacher's advice (to use college email) or in breach of collect Acceptable Use Policy (to not access home email at college).

City of Bath College conducted usability research into student online trends focussing on the technology they liked to access and use. The study found that around 99% of their students used Facebook, with some 70% using mobile devices. The research results prompted the music team to try the development of an online presence through Facebook and YouTube, which culminated in the music department requesting a trial period at the College to evaluate whether it would be embraced by students (**Excellence Gateway, 2010c**).

At City College Brighton and Hove, the Music Department has created its own Brighton Records Facebook, MySpace and Twitter sites to allow its students - who in their majority already have their own MySpace and Facebook areas when they first enrol - to use their social-networking activities for branding and marketing their own work to prospective employers (**Excellence Gateway, 2011**).

Carnegie College took the decision to allow Facebook and other social media sites to be accessed from within the college. Through organised sessions, many members of staff have had the chance to learn about Facebook, and to have their concerns answered. They see from other members of staff how effective social networking sites can be in education, and there has been a considerable change of attitude about its use in and out with the classroom (**Jisc, RSC, Scotland, 2013**).

5. What do learners expect of the digital environment?

As the report by the Association of Colleges and Association for Learning Technology remarks, "evidence about learners' expectations and experiences of technology in their learning must be read against the background of extraordinary expansion in their general access to information and communication technologies" (AoC/ALT, 2014, p.21). This means that just providing a networked computer is no longer sufficient to enhance the student experience. Indeed, educational institutions are no longer the 'gatekeepers' to technology or knowledge:

> "The wealth and diversity of social and domestic experience of technology drives up learners' expectation of the provision they will find within the education system, putting the older cycles of procurement and replacement under serious pressure" (AoC/ALT report, p.21).

It is surprising then that in terms of general availability and access to technology within colleges (i.e. access to computing facilities, powerfulness of the machines and speed of the networks), learners' responses seem to indicate that demand and supply in terms of technology provision are fairly closely matched (Becta pilot survey, 2009; ETNA, 2010). Perhaps this is due to the 'expectation limits' described by White and Wild (2014) formed largely in school. As schools do not generally keep pace with hardware and software updates, learners do not necessarily expect, for instance, to use their devices as part of the learning and teaching process. Learners arrive from schools which have learning platforms; they are familiar with uploading their own video and images and are not impressed by hand-outs (Jisc RSC, 2012c). White and Wild also described an expectation 'threshold' in terms

of technology provision and, gradually over the course of their studies, a transitioning of key technologies sliding from the category of 'enhanced' provision to 'entitled' provision.

In terms of how technology is to be used, learners seem to becoming clearer about what they expect. Several years ago, the pilot learner voice survey for Becta showed that learners found their college IT facilities to be very much as they had expected; interestingly, more learners were pleasantly surprised than disappointed (Pepler, 2009). However, more recent unpublished data (Inst., 2014), show that 80.61% of prospective FE learners (n=104) expect to use mobile devices for learning, while 91.75% expect their learning to be enhanced by technology (i.e. VLE, online assessment, collaborative clouds, mobile learning and personalized learning space).

Of most interest is learners' expectations about learning practices, and how they might be mediated by technology. At school, it appears that there is the assumption that students will complete their school homework at home using online sources of information. This means that, whereas students are developing 'independent' learning methods earlier in their educational careers than in a pre-Web era, these are often without any formal pedagogical or critical support (White and Wild, 2014). Indeed, students are strongly influenced by these experiences where "there are only a few embryonic signs of criticality, self-management and meta-cognitive reflection" (Luckin, et al., 2009 p.87, cited in Aoc/ALT report). These early practices, then, form learners' expectations around what it means to be competent with using technology for learning purposes and they need to be explicitly challenged and evolved when learners transition to post compulsory education.

a. Online access to course materials

One of the growing learners' expectations is access of course materials online. An illustrative example comes from Newham Sixth Form College that has started to respond to these expectations by extending the use of the institutional Moodle virtual learning environment and other technologies for the purpose of delivering a consistent online learning experience across the curriculum (Jisc RSC, 2012c). Feedback from the learners of this college showed that expectations for course content on the virtual learning environment are indeed increasing:

> "At the start of the year students expect to see quality content and all of their course documentation available on Moodle" (Learning Resources Manager, **Jisc RSC, 2012c**).

b. Open access

Related to this seems to be the issue of college network security and site blocking, which finds the majority of students objecting strongly. In a learners' voice survey conducted for Becta, one of students' most frequently mentioned theme was the 'unblocking of social networking sites and trusting the students' (Pepler, 2009). As some survey data from colleges around Scotland have shown, many students express anger at these restrictions imposed on them, with some arguing that a number of these blocked sites actually *contain essential course materials* (ETNA, 2010). As the report concludes, "site-blocking represents an area where some colleges may be widely out of step with the demands of their clients" (ETNA, 2010, p.47).

c. Anywhere access

FE colleges have to respond to some specific challenges that FE learners face, namely the need for students to have access to College resources from anywhere (Burbridge & Forrest, 2010). For mature students, in particular, or people who want to change careers (as is the case for many FE learners), there is the expectation or demand

that courses will be delivered in a manner and speed that fits their daily lives and personal circumstances. Having access to course information at home can give them freedom and flexibility and save them valuable time. The following illustrative example comes from Thanet College:

John Murphy is a maths teacher in secondary education and is enrolled on the Level 1 Diploma part-time course as he seeks to change career into the carpentry trade. As he reports:

> "The key issue in making my decision to take a day off work in order to study for carpentry/joinery diploma was to avoid treading water and wasting time. The work itself cannot be differentiated but the time scale for the completion of the work can and has been. Simultaneously, keeping set deadlines in place whilst allowing for completed theory sections to be submitted, marked and completed before the deadline is exactly what mature students are looking for [...] The framework of the course has allowed me to progress at my own speed on the theory side, which has given me more time to work on my practical skills" (**Excellence Gateway, 2010b**).

Similarly, over 50% of the learners surveyed at Lewisham College access their course materials from outside the college premises (Burbridge & Forrest, 2010) and they have paid tribute to the ability to submit their work from other locations at a time that suits them:

> "I think it makes work easier to hand in because it can be accessed at home or at any location with an internet connection." (Advanced Diploma in IT student).

d. BYOD and independent learning

Bring Your Own Device is starting to get accepted and slowly adopted in schools, although that is not, yet, the norm everywhere (White and Wild, 2014). Thus, learners' expectations will most probably increase as they transition from school to post compulsory education.

There have been big changes in the use of mobile devices in recent years. A 2008 FE Sero survey for Becta showed that many colleges are still wary of allowing learners to use their own devices in college and relatively few allow them to be connected to the college network; however, a more recent survey paints a rather more optimistic picture (Pepler, 2009). Indeed, recent survey data show that some of the most popular college resources tutors use in class are mobile phones (32.2%) and iPads/tablets (41.8%), and that the majority of prospective FE learners actually *do expect* to use mobile devices in classroom for their learning (Inst., 2014).

e. Career choices and employability

It is interesting to note, that, while there is a growing expectation (and, increasingly, college acceptance) of digital practices during college years (e.g. BYOD and mobile learning), in contrast, recent data from employers' expectations show that these may not be widely accepted in the workplace (e.g. up to 50% of organizations actively discourage mobile devices for working) (Inst., 2014). This confirms again the LfLFE study findings that "there is often a mismatch between the literacy practices of everyday life and the workplace on the one hand, and those of college courses on the other" (TLRP, 2008). Where there is work to prepare students for the use of technology in the workplace this seem to start to change the picture. As one student from Abingdon and Witney College reported:

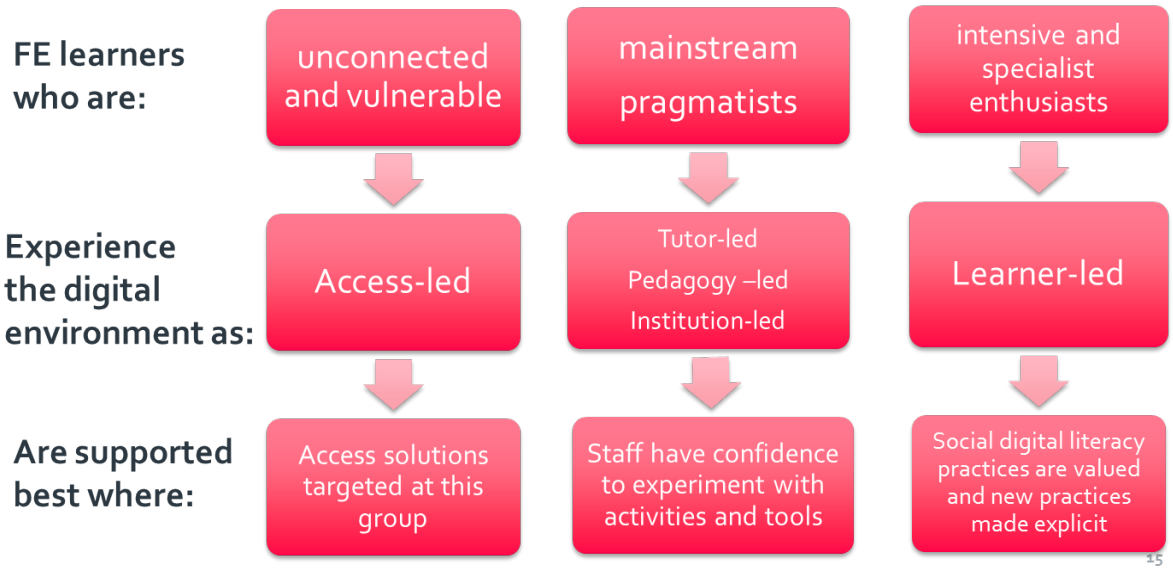
> "Everyone knows that having good IT skills is important for getting a job; (webinar skills) is an unusual skill, outside the proficiency of Word and Excel and could help you in your applications" (**Jisc RSC, 2013a**).

Our review supports FELTAG's recommendation that: "Relationships between the Further Education community and employers should become closer and richer, and enhanced by learning technology inside and outside the workplace". (FELTAG, 2013, p.5)

6. Conclusions and recommendations

a. Different issues dominate the experience for different students

Learners in the FE and Skills sector experience digital environments in many different ways. For unconnected and vulnerable learners, their experiences are dominated by issues of access to technology and these learners are best supported where provision is targeted at their access needs (such as by providing mobile devices or personalised solutions for specific access needs). For mainstream pragmatists, which represent the majority of FE learners, their experiences are dominated by issues of pedagogy and are influenced to a large extent by the activities designed by their tutors and the environments provided by their institutions. For the minority of intensive and specialist enthusiasts, their experiences are dominated by the extent to which they are able to appropriate social and personal uses of technology for their learning and they are best supported when their social digital literacy practices are acknowledged and valued by the college and their tutors.



How learners experience their digital environment is influenced by both the rapid changes in technology in society, and the use of technology encouraged in schools. This combination means that learners arrive in FE with the expectation that technology will play an important role in their learning, but unsure of exactly how. In general learners expect course materials to be online, and to be able to access them from a variety of locations and devices. However, they are less clear about the role of technology in supporting independent study (beyond searching for information and improving presentation) and developing skills for work based learning and for the workplace. They need support in the practices they will need to adopt, notably around issues of criticality and self-management.

b. The distinctiveness of the Further Education and Skills sector

To a large extent, the findings mirror those from previous reviews of students in higher education. However, there are some important differences both in the context of the FE and Skills sector and the findings.

The unconnected and vulnerable group are likely to be a larger proportion of learners in FE than in other sectors due to the wide variety of learners' backgrounds. Attewell et al (2009) report, for example, that one of the MoLeNET projects' impact of using mobile technologies was to encourage non-traditional learners and learners who have not succeeded in traditional education to engage in learning and to improve their self-confidence and self-esteem, and helping to overcome the divide in access to technology.

Financial restrictions in FE sector are a reality; even in some of the technologically advanced colleges, resource constraints of money and time often surface and are barriers to technology adoption and use (Pepler, 2009b). While we have found good examples of colleges providing mobile devices (e.g. Fabian and MacLean, 2014) and cheap or free apps to their students, these are not enough for everyone. At Clydebank College, for instance, while a new iPad was purchased for learning purposes, it was just one device for the whole classroom and students needed more hands-on time (Jisc RSC, 2012a).

There are other restrictions placed on learners in FE. Bhatt (2012) describes vividly a college's attempts to prevent learners bringing their social media practices into college through bans on using ICT facilities for private or social purposes and using the Internet only for legitimate study tasks.

Because of the variety of FE students' backgrounds and courses, teaching and learning takes place in a variety of settings. For example, for vocational learners, learning often takes place in more than one location. Typically their course is delivered partly in a workshop or simulated work environment (e.g. a training kitchen) and partly in the classroom. The work-based learners, on the other hand, are mainly based on employers' premises and not in college (cited in Douch et al 2010). Therefore, one distinctive characteristic of FE colleges is that FE students need to have access to college resources from anywhere.

Both teachers and learners in this sector demonstrate a concern for the role of technology in the workplace, with the use of relevant technologies seen as an important employability skill. We found many creative uses of technology to support skills development.

c. The importance of conducting learner experience research

Given the lack of funding for national research into learner experiences and expectations, colleges are going to need to conduct their own investigations in order to keep pace with the impact of changing expectations. We found some examples of colleges collecting data about their students' expectations and experiences of technology and actively using them to inform college policies and institutional services. However, access to these is difficult and there is little synthesis and dissemination of their findings nationally.

Examples of methods which have been used to gather learner experiences include:

- Interviews, electronic questionnaires and statistics obtained from the reporting system offered by the virtual learning environment (VLE) at Lewisham College (Burbridge & Forrest, 2010).
- Online survey to students asking about VLE use, online communication, use of social media and own devices for online learning at the University of Wales Trinity Saint David College (UWTSD, 2014).
- Interviews (1:1 and 1:2) and focus groups in a case study on 'screencasts' to enable flipped learning as part of a project in enabling the spread of innovative practice at Sussex Downs College (Sussex Downs College, 2014).

d. Recommendations

After reviewing the existing literature, the following suggestions and recommendations have arisen:

For future research

- Ongoing studies on learners' experiences and expectations in the sector are needed, as national projects ceased in 2009/10, to keep pace with changes in technology in society and schools.
- Funding for large scale projects and/or aggregation of small scale projects. For example, MoLeNET projects affected 10,000 learners. While they were all small scale action research projects, the retention and attainment data was combined to make their substantive claims.
- Follow up studies are needed. Evaluations of teaching innovations may be susceptible to the '*Hawthorne effect*' (i.e. a temporary effect due to the novelty of the technology or of the project) as the duration of the projects is not long enough to exclude this. Also, slight improvements in positive responses over time may be explained by teachers and learners' increasing confidence in using the technologies and applying them in teaching and learning contexts (Attewell et al., 2009).
- Local case studies need tools to collect and interpret learner experiences. One of the main issue in the FE research regarding technology use is the lack of emphasis on the learners' voice. From our search we found that most sector reports and institutional audits or surveys are still very much focused on the technology provided (or needs improving) and on the staff skills (or needs for training) (e.g. Inst. ELearning Audit, 2013). With a few exceptions, there is only occasional (and in many cases informal) feedback gathered from learners (e.g. Inst. ELearning Audit, 2013 - Hair and Beauty). Despite some very good initiatives in a number of FE colleges, there is not always a formal evaluation taking place. There is a need for robust research methods and use of mixed methods.
- Moreover, we believe that research in the FE sector needs support at senior level because it is not a usual part of the FE staff job, and most students are not used to engaging in it. Running a research project in FE using internal staff requires a different attitude than in higher education since the structure in FE doesn't normally include research time. Financial structures, key staff timetables, employing those outside the organisation and promoting student participation needs consideration and full support from the senior management team in order to create an environment which enables a research project to succeed (Jisc RSC, 2013a).

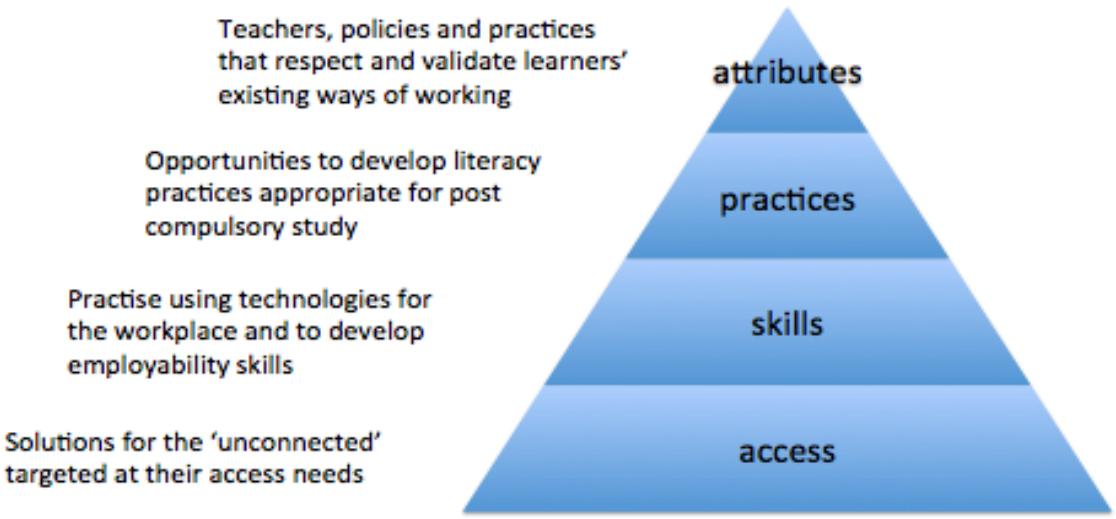
What have we learnt from the review about what learners **need**? (see Figure 3.)

Learners, who arrive without access to networked computers, need solutions targeted at their access needs. Although we found many case studies of innovations to support students with specific learning needs, there was little for the unconnected.

- Learners, who arrive without access to networked computers need solutions targeted at their access needs. Although we found many case studies of innovations to support students with specific learning needs, there was little for the unconnected.
- Learners like 'Sara' (Bhatt, 2012) need to share their existing ways of working with their teachers, and for their approaches to be respected and validated (Miller and Satchwell, 2006).
- Opportunities to develop literacy practices appropriate for post-compulsory study especially around assessment, criticality and self-management.

- Institutional policies and practices which encourage rather than restrict learners' ability to transfer their digital literacy practices from other contexts into FE.
- Practise using technologies suitable for the workplace and that develop their employability skills.
- Teachers who realise the full potential of the technology and encourage its use to support active learning and new ways of teaching and learning. (Teachers need time to experiment, reliable technology and training).

Figure 3: What do learners in FE need?



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