Deepening digital know-how: building digital talent

Key issues in framing the digital capabilities of staff in UK HE and FE

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This report covers findings from a project funded by Jisc to review how the digital capabilities of teaching and professional staff are currently framed in UK HE and FE. The project also reported on the learning, technology and organisational landscape for UK HE and FE as this influences future requirements for staff digital capability.

Other major outcomes of the project include a <u>review of existing digital capability</u> <u>frameworks</u>, a new <u>framework for use by Jisc and its communities</u>, and a number of communication and consultation events.

These findings are based principally on two sources of evidence:

1. A *review of literature*, the results of which are openly available via a <u>resource and</u> <u>reference list</u> with indicative quotes and a summary of key facts and figures from the literature.

2. A series of *semi-structured interviews* carried out between 1 March and 31 May 2015 with:

- ▲ 24 institutional representatives (19 HE and 5 FE) responsible for developing digital capabilities strategically at their university or college
- ▲ 23 organisational representatives (18 HE and 6 FE/skills) responsible for supporting/developing staff via professional and membership bodies
- ▲ 20 national experts in digital capabilities, HR, staff and workforce development, and allied issues

Findings

These findings can be seen as providing the context and rationale for future work of Jisc and its partners in the area of digital capabilities. References at the end of each section can all be found - along with key statistics and citations - in the <u>online reference list</u>. Evidence from interviews are numbered according to the themes identified in data analysis.

1. The nature of work is changing: digital technologies are implicated

Digital technologies are driving some significant changes in the world of work, and are deeply implicated in others.

Work in education

Academic and professional work is becoming:

- ▲ less secure rise of short-term contracts, constant restructuring;
- shorter term in focus in terms of contracts but also in terms of working practices (see following points);
- ▲ more project-based focused on short/medium term initiatives, often organised in

flexible teams (e.g. task and finish) across more stable department/service structures;

- more goal-driven KPIs, personal performance management, citation index, REF, NSS, teaching quality measures, service level agreements;
- uncertainly located rise of open offices, hot desking, working from home, working across multiple campuses, working online;
- more self-directed rise of self-employment, consultancy, project-based working and enterpreneurship; also focus on the individual to constantly update skills;
- multiple/hybrid people doing more than one job (split contracts), roles crossing professions or specialisms e.g. library/IT, library/careers, employability/info management, learning development/student wellbeing;
- technology-based core processes carried out within institutional IT systems, some aspects entirely automated, rise in roles with IT-related responsibilities e.g. in learning technology, organisational data.

Arguably it is becoming more necessary for staff to have professional qualifications. In the case of teaching staff in HE for example, that is the definite trend. Interviewees all emphasise the importance of staff having a broad spectrum of digital capabilities, both generic and role-specific, but professional accreditation varies in its appeal according to sector, career stage and role.

Key references: Barnett (2008); Barnett and Di Napoli (eds) (2009); Barnett (2013); Callender and Scott (2013); Fleck, Robison and Cox (2014); Gornall et al. 2013; Henkel 2012; HEFCE 2010; Littlejohn, Beetham and McGill 2012; Mears and Harrison 2013; Selwyn 2014; Temple et al. 2013; Yijoki 2014

Indicative quotes from interviews: 1.1 - 1.14

Work beyond education

Employability and the 'world of work' penetrate every aspect of the student experience via part-time work, work placements, internships, sponsorships, and co-curricular activities reframed as tokens of employability. Employment is widely seen as the telos of education, making sense and lending value of the whole experience. The world of work is also changing through the multiple impacts of digital technology. It is becoming:

- less secure, with multiple job and career changes and the rise of casual, part-time, informal and self-employment;
- more entrepreneurial, via the 'gig' or 'sharing' economy (uber, AMT, clickworker, workfusion, mechanical turk) on the one hand, and the rise of project-based ways of working and internal marketisation (intrapreneurship) within relatively secure forms of employment;
- ▲ fragmented in terms of attention, tasks, work-time and work-space, working teams;
- Multiple and hybrid, with simultaneous contracts/roles/projects/commitments in work and the monetisation of previously private pursuits, hobbies, personal time and space;
- uncertainly located through disclocation from the traditional workplace and a rise in home working;
- ▲ automated and/or at risk from automation, with up to 36% current UK jobs likely to be lost in next 10 years; jobs are being done by a smaller number of people working

collaboratively with machines and IT systems.

Except in very specialised digital industries, employers tend to look for 'soft' skills and generic attributes rather than mastery of specific software and systems – which change frequently and require adaptable workers. So students need to experience a range of current technologies in authentic contexts of use. Staff require similar opportunities if they are to support students effectively.

Key career assets are now one's demonstrable capabilities, rather than (say) length of service, and these must be constantly updated, especially where digital technologies are concerned. This is equally true of staff (see point 3) and of the students who are being supported by staff to gain employable skills.

Digital capabilities are increasingly essential to find and retain work and to manage multiple roles. However, aspects of digital work are also a source of job dissatisfaction, frustration and stress (see point 8). Advances in digital technology are not necessarily leading to a growth in high value, high status 'knowledge' work for most graduates, but to creative and leadership roles for a number, and for others a growth in casual work, fixed-term contracts, self-employment on a sometimes piecemeal basis, and lower-value labour in a digitised service economy. These kinds of work still require digital enterpreneurialism but on the personal level (life/work management) rather than on the organisational level (digital start-ups, developing new ideas and markets etc).

Key references: Beetham, Littlejohn and McGill 2009, 2010; Blass, Jasman and Shelley 2010; BCS 2014; Byrne and Waters 2015; Chartered Institute of Personnel and Development 2015; Coppola 2014; Economist 2015; Frey and Osborne 2013; Gapper 2015; House of Lords Select Committee on Digital Skills 2014; Institute for the Future 2011; McKinsey Global Institute 2012; Miller and Marsh 2014; Nesta 2014; NIACE 2014; Romei 2015; Scott 2014; Sundarajan 2013; Temple et al. 2013; Tomlinson 2012; UK Commission for Employment and Skills 2014; UK Digital Skills Taskforce 2014

Indicative quotes from interviews: 1.15-1.32

2. Recording and demonstrating achievement is also changing, with implications for accreditation and CPD

A person's capabilities (what they can do) are no longer attested to simply by their certificates and grades. Digital devices and systems have the capacity to:

- ▲ record learning, achievement, and evidence of practice e.g. using digital video;
- capture data related to learning and achievement e.g. from learning records, learning environments;
- ▲ organise the evidence e.g. using tags, file structures, structured e-portfolios;
- showcase learning, achievement and evidence of practice e.g. using a blog/vlog, eportfolio, personal web page.

Evidence of this kind may exist across a diversity of digital platforms and systems:

- A personal public platforms e.g. hosted blog page, wiki, online CV/resume
- A personal profiles on social media and sharing sites e.g. facebook, linkedin,

academia.edu, slideshare, youtube, instagram

- organisational public platforms e.g. profiles on college/university web sites, employer/sponsor/funder web sites, project web sites, public news stories
- organisational private platforms e.g. VLE, VRE, closed e-portfolio, staff/learner profile, evidence from assessment (students) and appraisals (staff)
- professional body systems e.g. evidence of memberships, certification, formal professional development records in health-related professions
- ▲ open accreditation systems e.g. open badges, transferable credit schemes

Accrediting events such as final assessments, application for professional body membership, recognised certification schemes etc can be seen as opportunities to gather up, organise and channel '*what I know and can do*' through a particular gateway with associated criteria of judgement. Having passed through that gateway, individuals can use the credit awarded to *stand in* for the rich record of their actual achievements enabled by technology, making it easier for other gatekeepers (would-be employers, recruiters etc) to assess their worth in an economical way. Both the gatekeepers down the line and the individuals seeking credit continue to value this credentialing function highly – which is just as well for the institutions that provide the service. At present the much-vaunted use of social media for recruitment, for example, does not undermine the value of traditional degrees and awards, it simply makes it easier for individuals to advertise them to potential employers.

However, as it becomes both easier for digitally-capable individuals to manage and showcase their own capabilities, and more commonplace for would-be recruiters to search, collate and make sense of this rich record on their own account (seeking evidence of desirable qualities that are not captured by traditional awards), then the value of degree grades and one-off professional certification may recede. At the very least, accrediting and recognising bodies should make it as easy as possible for an individual to collate existing digital evidence and match it to their assessment criteria.

The need for continuous CPD in most high-value work suggests the desirability of a match between personal technologies (gathering, organising, reflecting on and reviewing capability evidence) and organisational systems (assessing that evidence against criteria for professional practice or specific job roles). There is a role for new digital services in this space, e.g. tools that support human tagging/curation (apps, APIs?); shared machine-readable standards; and algorithmic approaches that do some of the matching automatically.

Key references:

Most of the work completed in this area relates to student competences. See past <u>reports on</u> <u>competence</u> available from Jisc CETIS.

Indicative quotes from interviews: 2.1-2.15

3. There are profound and ongoing changes to the knowledge practices which are the core business of universities and colleges

These changes have been extensively documented elsewhere and relate to the impact of digital technologies on:

Pedagogies and ways of learning: new theories about how people learn in a hyperconnected age e.g. connectivism, networked learning theory, rhizomatic learning, actor network theory,

Activity Theory, systems thinking, educational cybernetics etc; new pedagogic approaches e.g. borderless classrooms, flipped learning, blended learning etc; new modes of participation in learning via digital technologies.

Research and scholarship: methods and methodologies, especially around data collection and analysis; the overall role and value of data; new digital specialisms; new research questions and concerns.

Professional practices as taught in professional and vocational subjects: new ways of relating to clients; new working practices within and across organisations; new skills; new ways of being an 'expert' and challenges to traditional forms of expertise.

Public communication of knowledge: new modes of publication, collaboration, communication, data visualisation; the use of digital media to communicate ideas.

Content, content management, and what counts as valued content in the organisation.

Administration, management and other aspects of working in a large, complex organisation supported by digital systems.

Professional and academic/teaching staff respond to these changes in a variety of ways, from excitement to distress. While there is considerable anecdotal support for the idea of a generational effect, there is more research evidence for situational effects. In other words staff are more positive about digital change when they witness real opportunities to develop themselves and their careers, to advance understanding or practice in their specialist area, or to improve their students' experiences of learning. They are more positive when they have opportunities to experience and explore digital technologies, whether formal or informal. 'Time to experiment' is a constant refrain. Stress and distress arise from a fear of 'not keeping up' when changes are experienced as too rapid, too extensive, or being introduced in a way which staff cannot control; from a lack of time; and from the potential shame of being seen as 'incompetent' in a core area of professional practice and identity (see point 7 below). Staff in UK HE and FE are experiencing a wide range of other stressors including those outlined in 1a., which impact on their ability to accommodate major changes in their daily practices.

Key references: House of Lords Select Committee on Digital Skills 2014; Jump 2010; Kukulska-Hulme 2012; Laurillard 2010; Littlejohn, Beetham and McGill 2012; Makers Academy 2014; McGill 2012; New Media Consortium 2015; Reilly 2013; Ryberg and Georgsen 2010; Sharples et al. 2014; Temple et al. 2013; UCISA 2015; Whitworth 2009; Wilbur 2010; Weller 2011.

Indicative quotes from interviews:

Teaching and learning 3.1-3.11 Research and scholarship 3.12-3.17 Admin 3.18-3.20 Content 3.21-3.26

4. Digital capabilities are both general and specialised – and organisations need both

General digital capability or *facility* (ease with familiar devices, services and applications):

▲ is commonplace;

- ▲ is usually acquired informally, and can be transferred between professional and personal/social contexts of use;
- encompasses a range of basic operations e.g. navigation of interfaces, search, productivity, time and task management, consumption of digital media, basic participation in web-based services and communities (Go-On digital basics provide a good summary);
- may be shallow and easily undermined e.g. by new interfaces, functions, or by unexpected responses/failures;
- can be enhanced by developments in the user experience, interfaces and functionality
 i.e. facility does not advance only because individuals become more capable;
- ▲ is necessary but not sufficient in high value and specialised contexts.

Digital specialism on the other hand

- ▲ is situated in the subject area, profession or practice and difficult to transfer;
- ▲ is complex and layered;
- ▲ is acquired in situ and over time;
- ▲ may involve formal training, teaching or CPD, especially early in development;
- is deep, enabling work-arounds, alternative courses of action, and recovery from failures;
- ▲ is practice-based rather than system- or interface-based, allowing new functions (devices, interfaces, system upgrades) to be readily adopted if they accord with the underlying practice.

When fully developed, digital specialism allows individuals to: innovate in their subject area, profession or practice; use complex functions; understand how technologies work and where they add value; address problems in their subject/profession; think computationally about issues.

Every department and service team, and every professional group within the organisation, needs *digital specialists* – people who are deeply rooted in the practices of that subject area, profession and/or role, but who also have taken a specialist interest in how digital technology enables the performance of that role and can enhance/transform/innovate practice. However, this is not enough for the value of that expertise to be leveraged. *Everyone needs to know enough* about how digital technology is impacting on their subject area or professional practice:

- ★ to act safely and responsibly with digital data and systems;
- to meet legal requirements e.g. data protection, equal access, reasonable adjustments, copyright;
- ★ to avoid reputational damage to themselves or their organisation;
- ★ to realise the value of technologies that have been invested in on their behalf;
- ▲ to play their part in institutional processes that are dependent on IT systems e.g. QA, assessment;
- ▲ to access relevant specialist expertise when they need it for particular tasks or challenges.

So digital fluency is critical if the available digital specialism is to be leveraged when and where it is needed.

Key references: Angeli and Valanides 2009; Arinto 2013; British Computer Society 2014; ; Cabinet Office 2014; CapGemini Consuting 2014; Cartelli 2010; Littlejohn, Beetham and McGill 2012; UCISA 2015.

Indicative quotes from interviews: 4.1-4.17

5. Institutions must recruit, retain, reward and recognise digital talent

From interviews it seems that individuals with *specialised* digital skills are not always:

- ▲ graded in a way that recognises their investment in IT skills or their value to the organisation;
- recruited strategically the response to shortages of IT-related expertise is often shortterm, poorly planned and therefore uneconomic;
- developed or supported in their development, so they fail to fulfil their potential as digital experts and innovators;
- ▲ managed across the organisation so as to share expertise, e.g. via directories of expertise, secondments between departments and roles, co-mentoring.

For the development of general digital expertise among staff, the problems are related but different.

- As 'IT skills' are taken for granted among the general population, the actual skills required to function effectively in the organisation may be underspecified in job descriptions and person specs.
- ▲ The Jisc 'Developing Digital Literacies' baseline process found that people in every HE/FE role tend to rate themselves as digitally competent because - unless they are put into new and demanding situations - their everyday IT practices 'just work'. This means people rarely identify themselves as needing development or support.
- ▲ Infrastructure investment and development often take place without considering what needs to be invested in staff for the technology to be used effectively to meet organisational goals. Where there is development it tends to focus on ensuring staff can access basic functions.
- ▲ Digital expertise exists in 'pockets' or 'silos' with relatively little opportunity for it to become shared or known about. Directories of expertise, for example, would be easy to implement alongside existing institutional systems such as Sharepoint, but this is rarely done.

If staff are to be resilient, flexible, and open to change, they need more time to explore advanced and alternative functions. If they are to assimilate a system fully to their practice, they need opportunities to explore it in the context of that practice, preferably with peers in similar roles.

Key references: British Computer Society 2014; FELTAG 2014; Gornall et al. 2013; Littlejohn, Beetham and McGill 2013; Makers Academy 2014; McKinsey Global Institute 2011; Mohammadyari and Sing 2015; UCISA 2015.

Indicative quotes from interviews:

Recognition 5.1-5.8 Staff, educational and professional development 5.9-5.18 Policies, processes and resources 5.19-5.26 Grading and career/reward structures 5.27-5.37 Recruitment 5.38-5.39 Against the 'digital natives' story 5.39-5.45

6. Organisations need digitally capable leadership and a strategic approach to digital capacity

The drivers for a *strategic approach* to digital talent are several:

- Digital technologies and the associated risks and opportunities continue to evolve rapidly
- A Taken in tandem with other major political and societal pressures on the education sector, digital technologies have increasing but unpredictable impacts on organisations and their core activities.
- A Many key mission statements cannot be delivered on without specialised digital expertise. Examples include online learning, building international/global partnerships, open publishing/scholarship, virtual environments, digital branding, IPR, data security, sustainability and efficiency
- ▲ KPIs such as student satisfaction, research impact etc are increasingly dependent on digital technologies to deliver, and are entirely dependent on digital data management to evidence satisfactorily for external scrutiny.
- Universities in particular are spending money on external consultants rather than taking a long-term view of growing their digital specialists and talents.
- Among digital professionals such as senior library, e-learning and IS/IT staff, there is often frustration that their expertise is not being used strategically to steer the institution towards new opportunities.
- ▲ While technology routinely takes a place in strategic thinking, it is rare for this place to be a central one. The opportunities and risks offered by developments in digital technology need to inform the full range of institutional strategies and be embedded into the institution's core mission.
- A recent report from PA Consulting concluded that the UK HE sector risks losing its world-leading status by failing to act strategically on digital issues.

Interviewees talked about several actual or intended *benefits* to the organisation of developing staff as digital professionals. These included: efficiency and effectiveness of administrative processes; better management practices; better use of digital infrastructure and estate; an enhanced student experience; an enhanced external reputation and identity (for the organisation); innovation; cost savings and dealing with constrained budgets; and responding to new markets.

Digital *leadership* featured strongly in interviews, both as a positive feature of effective organisations and (lack of good leadership) being a huge barrier to progress. Several points emerge from the interviews and the literature.

- ▲ Just as digital systems and specialisms have proliferated across the educational organisation, so leadership of digital teams, and in relation to decisions about digital futures, need to be distributed too.
- ▲ Heads of service and other senior staff with digital expertise are not always well embedded into strategic committees and other planning, resourcing and decision-making processes.
- ▲ Leaders need to feel confident in their own digital capabilities, especially in relation to digital presentation, reputation management, and networking. However...
- A good digital leader is one who makes good decisions about the digital environment and about the organisation in a digital landscape not necessarily one who understands the details of implementation.
- A Digital change agents want senior managers with a vision for digital technology in the organisation and confidence to trust other people who have the technical and specialised expertise to implement the vision.
- Senior managers in many organisations remain to be convinced and inspired by digital technology. Many had successful careers in education before ICT was considered an important aspect of professional practice.
- Senior managers have a major role to play in determining the organisation's approach to risk and innovation, and (alongside this) determining the ICT infrastructure.
- ▲ Digital technologies and ways of working cut across traditional organisational structures and can be perceived as disruptive and threatening by those who have a large stake in those structures.

The interview group included only one senior manager who identified a lack of personal digital capability as a problem – but this was not a representative group. Other institutional participants saw the development of staff in more senior positions to themselves as crucial to change.

The digital *environment and infrastructure* determine whether staff capability can be expressed in day-to-day practice. Return on investment in that infrastructure is, as cited, an important reason for investing in staff skills. However, some interviewees felt that improvements to the technology environment – without any other training or development effort – had an impact on capability. Since the digital environment at university and college will always lag behind what some staff have available at home, or in other professional settings, there will be staff who are frustrated by current provision and who will express new digital skills and practices as soon as the environment meets their aspirations. Digital fluency is often acquired through informal learning, especially peer learning from closely co-located colleagues (the 'open plan office' effect). So improvements to infrastructure can lead to change even if only a few staff are able to make use of them at first. This might account for the fact that there are 'small pockets of innovation' to be found in unpredictable locations around most large colleges and universities.

Nobody believes the informal effect to be substantial enough to create strategic change across the organisation, or indeed to develop complex and specialised new practices. In these cases formal training or professional development are essential. But the informal effect of the digital environment on capability can be amplified if digitally pioneering staff are recognised and if staff are given the opportunity to exchange skills in a low-risk way e.g. through showcases and seminars.

Most comments on the digital environment in these interviews were negative, however. A lack of investment, or restrictive policies, or unsuitable legacy systems and buildings, were seen as hampering the development and expression of digital capability. There are some muted indications that in a time of restricted spending, organisations are having to choose between investing in infrastructure and investing in staff skills. Short-sighted though this choice may be, where it is forced on planners then infrastructure will almost always win out, because it is a capital spend and because the results are immediately visible - e.g. to potential students and their parents, to inspection and quality teams - in a way that staff skills are not.

Key references: Callendar and Scott 2013; Carril, Sanmamed and Selles 2013; European Schoolnet 2013; FELTAG 2014; Gornall et al. 2013; Hall, Atkins and Fraser 2014; Henkel 2012; Hicks and Sinkinson 2015; PA Consulting 2015; Rebbeck 2014.

Indicative quotes from interviews:

Strategic approach 6.1-6.5 Leadership 6.6-6.22 Digital environment 6.23-6.30 Organisational benefits 6.31-6.44

7. Digital capability is intrinsic to professional practice, identity, and learning

Despite vast improvements in the professional standing of teaching staff in HE, and years of investment in ILT among FE staff, it remains the case that teaching with technology is widely seen as a specialism rather than a core practice. If the interview evidence is representative, this element of the UK PSF (i.e. K4) is the most difficult to demonstrate, particularly for more established staff seeking individual routes to recognition. In FE, while time is allocated for professional development, there is a crisis of resourcing and motivation.

There has been a general move to 'embed' digital capability into professionally accredited courses for teaching staff, and this means it is more likely to be seen as core practice by (especially newly qualified) teaching staff. However, there were concerns among some interviewees that embedding has led to a lack of focus on digital issues, and that this has gone along with a loss of specialist staff who used to deliver these aspects of accredited courses. Embedding is a worthy goal but special attention to digital practices may be required in educational development for some time to come if the full potential of these technologies is to be realised.

Other groups of staff are developing varieties of digital expertise within their professional roles and identities, though this is not always well known, well recognised, or strategically well used. Examples uncovered through interviews include the following.

- Employability and careers staff have considerable expertise in the use of social media to find and secure employment, to network, and to build an effective digital reputation and identity (e.g. using LinkedIn, Academia.edu etc). This is not always well coordinated with the curriculum, or with the organisation's own marketing and reputation management efforts.
- Employability staff and specialist administrative staff have many new responsibilities in the use of IT systems to collect, collate and analyse institutional data against key indicators. The strategic value and importance of this expertise is not always well

recognised.

- Staff with expertise in digital content (open content, open licensing, metadata, content management, repositories etc) are being confined by narrow ideas of what 'content' is – e.g. excluding student-generated content, informal staff publications and teaching materials, knowledge generated by and about the organisation itself - and a lack of strategic vision for content management across the institution.
- Staff with experience in ethical and legal issues e.g. copyright, digital safety and well-being, cyberbullying – are finding it difficult to embed those issues into courses of study and/or professional development opportunities for staff. ('We have an office that does that' allows the organisation to feel that the relevant box has been ticked).
- ▲ Early career staff are often natural pioneers and innovators. Unless digital innovation is recognised as valuable to the organisation and career enhancing to these staff as individuals, they are quickly discouraged from pursuing it.
- ▲ There is a reported tendency for roles in learning technology to be under-graded and even down-graded (note that this has not been independently verified, but the belief that this is the case is strongly echoed in current social media memes).

Despite the potential weakening of the credentialing function of degree-awarding and certificating bodies (2. above) and the lack of immediate career rewards, *recognition* and *belonging* continue to be highly motivating reasons for individuals to engage in learning/professional development. Even where open credits are available, individuals still opt to pay for a course of study or a professional body membership. Even where no credits are offered, people engage in professional learning communities – and sometimes offer professional learning themselves – for other kinds of satisfaction. Even if their career is likely to be held back by an over-enthusiasm for teaching innovation, staff continue to innovate where they see benefits to their students and their subject area.

More research is needed into these issues but there would seem to be a clear value to organisations – both universities/colleges and professional bodies – in delivering a digital experience that amplifies the sense of belonging to a community and being recognised for qualities that matter to that community (practices, values, contacts, shared experiences), as well as delivering credit based on measurable outcomes.

Key references: Callendar and Scott 2013; Carril, Sanmamed and Selles 2013; European Schoolnet 2013; FELTAG 2014; Gornall et al. 2013; Hall, Atkins and Fraser 2014; Henkel 2012; Hicks and Sinkinson 2015; PA Consulting 2015; Rebbeck 2014.

Indicative quotes from interviews:

Professional teaching staff 7.1-7.12

How professionals learn 7.13-7.22

8. Digital wellbeing is a critical issue for individuals and organisations

Digital wellbeing is a term that has been coined for this report to cover a range of concerns raised by interviewees. Many of these points concern the wellbeing of students – that is how staff understand the potential risks of digital engagement as well as the potential benefits, and take steps to support students with them. However, there is a recognition that staff are impacted by many of the same issues. And there are some issues that affect staff separately from students, especially around workplace stress and the changing quality of workplace

roles and relationships. The issues included in 'digital wellbeing' are quite diverse then, but the idea of bringing them under a single heading has generally been welcomed. Findings include the following.

- ▲ Students often do not understand when online behaviours are illegal, unethical or unhealthy e.g. harassment, cyberbullying, shaming etc. Colleges have a legal responsibility to keep students safe online and to address their online behaviour, and the quality of this provision is now part of the Ofsted inspection regime. However, universities rarely address this issue directly, despite their legal responsibilities to provide a safe working and learning environment, and the need to prepare graduates for workplaces where this kind of behaviour will not be tolerated. There is an overlap here between digital capability and *personal, social and ethical development*.
- Universities have a legal responsibility to ensure equality of access for all staff and students. Digital technologies can play an important role in remediating difficulties of access, e.g. by supporting home-based work and study. However, digital technologies can also introduce new kinds of unfairness. Not all staff/students are equally at home in digital settings, and not all have equal access to digital devices and services. Students are keenly aware of inconsistencies in their digital experience (though these are sometimes justifiable, e.g. in different subjects of study). So individuals need to consider issues of access, inclusion and parity of opportunity on their own behalf and for others in digital settings.
- Many universities and colleges are bringing services that support student academic success (e.g. tutoring, learning support) into alignment with services that support student wellbeing more generally (e.g. counselling, international office, accessibility services), understanding that these have a profound impact on the student experience and enable students to benefit from educational opportunity who would otherwise be excluded. Many of these services (encourage students to) use digital tools for learning and to remediate specific problems and concerns. So there is a growing overlap between student capability and the overall *student experience* which extends to the digital experience.
- Students and staff are stressed by some aspects of digital working. For staff the concerns centre around: the nature and perceived burden of administration; new approaches to teaching (often involving larger student numbers) without adequate preparation or workload modelling; changes to the time and place of work; and pressure to be available online at all times. For students the concerns centre around: distraction from study by digital media; exposure in public or shared digital spaces; and a fear of losing face-to-face contact with their lecturers and peers. While these are systemic rather than individual issues, there is room in a capability framework to indicate that individuals should be aware of how digital engagement can impact on their *health and wellbeing*, and take steps to align their digital practices with their personal needs e.g. time and task management, switching off, taking breaks, using postural aids etc.
- Universities and colleges are taking steps to embed sustainability awareness into the curriculum and to ensure organisational practices and estates are developed along sustainable lines. Digital technologies can support sustainable practices such as cutting down on travel. Green computing should be a concern for all in a Bring Your Own device economy. There is overlap between digital capability and *sustainability / environmental wellbeing* which could allow for the two agendas to be pursued in

parallel.

A similar argument could be made for the relationship between digital capability and *intercultural/international* awareness. Digital networks and media have the capacity to amplify existing attitudes, including prejudicial and discriminatory attitudes, through the 'echo chamber' effect. This can be challenged through the experience of collaborating online with individuals from diverse cultural backgrounds and with diverse opinions and subject specialisms.

Key references: Cabinet Office 2014; Digital Agenda for Europe 2015; Digital Government Review 2014; Dutton and Blank 2013; Fiorani 2015; Fleck, Robison and Cox 2014; Fox 2014; Garrett and Resnick 2011; Littlejohn, Beetham and McGill 2013; Morgan 2010; Nesta 2014; NIACE 2014; OECD 2014; Park, Fritz and Jex 2011; UCU 2014.

Indicative quotes from interviews:

Personal, social and ethical 7.1-7.11

Inclusivity 7.12-7.13

Workplace health and wellbeing 7.14-7.19

Life skills and digital citizenship 7.20-7.28

8. There is a demand for shared definitions and frameworks

There is strong evidence from these interviews of a demand for a shared approach, at least within the sectors, and preferably also linking HE and FE with each other and with other educational sectors. These are summarised separately in proposed use cases and in advice to Jisc on the development of new services. The key points are that:

- A Professional bodies see the value in shared definitions of digital capability which they can map to their existing frameworks and standards.
- A Professional bodies see the value in shared definitions and frameworks which allow better collaboration across professions and roles.
- A Professional bodies see the value in shared advocacy for digital issues nationally, e.g. with government, around shared definitions and agendas.
- ▲ Institutional representatives see the value in frameworks which they can adopt easily into organisational planning (e.g. strategies, policies, priorities for development) and processes (e.g. staff development, staff recruitment and promotion, curriculum design and review).
- ▲ Institutional representatives see great value in having the 'credibility' offered by a nationally agreed framework, especially one backed by Jisc and other professional bodies.
- Institutional representatives and individuals see the value in tools, resources and services based on a credible framework for development, especially diagnostic/discovery tools for individuals, navigational support for individuals/teams to access quality resources, and organisational audit tools.
- A Individuals, institutional representatives and professional bodies see the value in the development of new resources to fill gaps in existing provision, which may be determined through use of a digital capabilities framework. There is a particular

interest from FE in off-the-peg training and resources around identified areas of digital capability for staff.

▲ Experts see the value in developing continuity of approach across educational sectors and into employment.

Key references: Angeli, C., and Valanides, N. 2009; CILIP 2014; Costa 2013; Creative Skillset 2014; Deloitte 2014; Devine 2015; e-Skills 2014; ETS 2007; Ferrari 2013; Hicks and Sinkinson 2015; Jenkins 2009; Kukulska-Hulme 2012; McGill 2012; McKinsey Global Institute 2011; Mohammadyari and Sing 2015; Nore, Engelien and Johanessen 2010; Ryberg and Georgsen 2010; Universities UK 2015; Whitworth, Fishwick and McIndoe 2011; Weller 2011.

Indicative quotes from interviews:

Sharing/collaboration 9.1-9.7

National/international integration 9.8-9.10

Flexible framework that can be applied in practice 9.11-9.21

Training/development opportunities 9.22-9.23

Advocacy and credibility 2.24-2.25