This report summarises original data gathered by 9 professional associations between November 2011 and January 2012 through surveys and interviews, largely (though not exclusively) among their members. Other information was provided by these bodies, including details of their support for members and their general work around the digital literacy agenda. This will be extremely valuable to the programme going forward and is included here where relevant.
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Methods and respondents

The majority of associations (7) carried out online surveys using a tool such as BOS, with recruitment via open or closed email lists. Informal consultations via email and collaborative blogging, and semi-structured interviews, were also carried out by a smaller number of associations. The number of people consulted varied from 10 to over 1300, and in all cases but one the respondents were drawn from or closely matched the profile of members of the professional body. They can therefore be treated generically as professionals and specialist academics working in development roles in UK HE. The exception is the large sample (n. = over 1300) surveyed by Vitae, which was made up largely of postgraduate researchers (PGRs), though it also included professionals and academics involved in researcher development. The PGRs from the Vitae survey are treated separately in this summary as they represent a clearly different body of stakeholders, though one whose experience is highly relevant to the programme.

Concerns were expressed that the survey method may have biased results towards digitally literate individuals. However, given the very high levels of familiarity with email and online surveys reported in other literature, this effect may be diminishing. A more problematic bias may have been introduced by the tendency to survey full members of the professional body and/or heads of unit in a ‘representative’ capacity for other staff. Where surveys asked about longevity of service, the results show a very high proportion of long-serving members of staff (>five years in the same institution), usually in senior roles. This is unlikely to be representative of the population of professional staff in development roles, particularly given the numbers – decreasing but still significant – who are on soft funding. We know from the parallel baseline studies carried out by institutional projects that more established members of staff tend to be less reliant on digital technology for their professional activities and their sense of professional identity.

Professional staff represented included: staff developers, educational/academic developers, learning skills advisers/learning developers, researcher developers, organisational developers, e-learning developers, academic administrators, librarians. A significant staff group not represented were careers/employability advisers, who are known from project baseline reports to be taking a significant role in raising awareness of digital literacy issues. Staff with specific e-learning roles (ALT members) were also not surveyed, though some were included in the SEDA survey.

Digital technologies in professional practice

A large majority of respondents had access to both a laptop or (less commonly) a tablet computer, and a desktop computer. The laptop/tablet was often personally owned while the desktop was typically owned by their institution. Vitae noted that while laptops are now used in preference to laptops for the majority of applications – email, internet searches, cloud services – desktops are preferentially used for accessing institutional systems and the intranet. Between 60% and 80% of respondents to these surveys owned a smartphone and these people used it regularly to access information. SEDA found an average of around 6 personal devices owned and used regularly by staff developers.

The most common applications in use were email and productivity tools (word processing), and – once specific resources are amalgamated – online sources of information, especially
journals and professional sources. These tools were used on a daily basis by most professional groups, were used for a large part of the working day, and were seen as essential to their role. They were also used confidently and regarded as having a positive impact on professional life.

Use of mobile and social technologies was more polarised. Those who had a smartphone and used it to access online services tended to regard this facility as very useful. Social networks similarly had enthusiastic users - especially researchers – and those who actively avoided them. The evidence from the AUA survey is that concerns about privacy and reputation are not strong disincentives to use. Lack of time to engage and the erosion of personal/private time away from work may be more significant. Twitter was the most common recent adoption in SEDA’s survey; google+ is also emergent and LinkedIn seems to be used almost as widely as Facebook. The use of cloudspace for collaborative work (e.g. googledocs, dropbox), is gaining ground: among some professional groups around half make frequent use of these. Contributing to public/social knowledge building (where this was asked about) remains a minority activity (e.g. contributing to blogs and wikis, creating podcasts, uploading videos and building social bookmarks).

While direct comparisons cannot be made, interesting differences among the survey results were evident. For example, staff and organisational developers appeared to be lower users of social and mobile technologies than other professional groups, while ALDinHE respondents made more extensive use of them, perhaps because of the need to address students through their preferred media. Administrators represented by AUA had specialised patterns of use, with statistical packages, student record systems, online surveys and other institutional business systems used almost exclusively by this group. It is important to stress these observations imply no value judgement, only to note that people in different roles understandably find themselves using different technologies more or less routinely.

In the case of the Vitae survey, direct comparisons can be made. Established academics and professionals used institutional technologies such as intranets more than researchers, while researchers used social networks and mobile technologies more than established academics and professionals.

Overall, the trends in technology use are towards:

- a wider variety of devices and services in use, dictated by personal preference at least as strongly as by professional role or academic specialism
- a greater reliance on personal devices/services in professional contexts
- a consequent risk of blurring the boundaries of personal and professional life
- use of apps and web services in preference to self-contained, often complex applications
- a strongly social dimension to the use of technologies and a preference for technologies that have a social dimension where available
- a preference for mobile technologies among younger/newer professionals
- fairly low levels of concern about security and privacy with the use of third party services

**Attitudes to digital technology**

Most respondents believed that the impact of digital technologies on their work and/or profession was positive. HEDG members mentioned e-resources for convenient referral of staff, discussion lists, blogs and tweets for keeping up to date with professional colleagues, and wikis and cloud technologies for collaborative working. ALDinHE members – who often work in small teams or dispersed locations, and who regularly support students off-campus – find communication technologies particularly useful. Respondents to the SEDA survey reported that most significant enhancements to educational development practice were better networking, better access to information, and flexibility including flexible working. AUA members appreciated the efficiency gains and the chance to build professional contacts. Staff in several professions highlighted the capacity to target communications and raise awareness of their services through digital media, but often felt they were not exploiting these opportunities to the full.

All of these surveys also highlighted positive impacts of technology on student learning. Access to educational resources (including OERs) and academic content, more collaborative opportunities, new and potentially more engaging modes of teaching and assessment and the opportunity to develop transferable skills were all highlighted. Where surveys asked about future trends, the major predictions were increasing dominance of mobile devices, and the greater use of social media and collaborative technologies with an associated loss of face to face interaction.

Some respondents were anxious about these trends. Among the 10 SDF members interviewed there were many examples of a lack of enthusiasm for online learning – with which digital literacy was associated – and other professionals were unhappy that a trend towards online support meant they were losing face-to-face contact with students. In the ALDinHE community there were particular doubts about the evidence base for the positive influence of digital technology in learning. In the AUA survey, which asked detailed questions about perceived benefits, the greatest doubt was expressed about cost. Many professional staff suffer from anxiety about the speed of change and the impossibility of 'keeping up' with the latest developments. Senior staff were reported in some free text comments to be 'frightened of technology' and the idea of an insurmountable digital generation gap seems to retain some hold, not necessarily among respondents to these surveys, but reported among their peers.

A theme that emerged from four of the survey results was the blurring of boundaries between personal, professional and academic life. This seemed to be viewed as a threat to work-life balance rather than a problem with the security of personal information or the loss of reputation – though both these issues were considered a moderate risk by AUA members.

**Digital confidence and expertise**

SCONUL carried out the most detailed exploration of members' expertise in different areas associated with digital literacy. The senior library managers completing the survey identified that their library teams were more expert in some areas than others. Information literacy, as might be expected, was seen as an area of particular expertise by almost all respondents,
followed in order by ICT literacy, Communication and Collaboration, and Learning Skills. Media Literacy and Digital Scholarship were the areas in which more respondents felt their staff were either competent or novice. However, there was general agreement on the importance of developing expertise in each area, with even the lowest rated area of media literacy being seen as essential for development by almost 70% of respondents.

All the associations found that respondents were confident or very confident users of technology. This may highlight the varied and contextual nature of digital expertise. In their own context of work, those responding to a survey about digital literacy or capability are likely to be the more digitally confident members of staff. Lacking insight into other contexts of work, they naturally rate themselves against the norms they experience around them. This should alert us to the need for digital capability to be defined in context-specific ways.

When it came to supporting others to use technology or to develop digital capability, respondents were less confident. SEDA, for example, found relatively low agreement to the statement 'others turn to me for advice and support with digital technologies' and a significant number of SDF and ALDinHE respondents were anxious about their skills relative to students or other more digitally 'native' colleagues. There is clearly a difference between using technologies comfortably in a familiar context of work and acting as a pioneer, innovator or transformational influence on others.

While some differences in technology use were evidence between the professional groups, differences within professional groups were clearly more significant. Every survey showed inverse bell graphs for some technology-related questions, indicating a polarisation of opinion or usage. Interviews and free text comments surfaced a very wide range of attitudes from the techno-zealous to the highly sceptical. Vitae found that confidence, usage and perceived importance of digital technologies peaked in the 26-30 age group. After that it declined to age 50, then picked up again, perhaps as later-career professionals found themselves with more time and freedom to focus on their own development, or more confidence to take risks. Researchers were generally more confident users than researcher developers. The ALDinHE report noted differences between groups with high and low levels of reported confidence with technology, the confident users making much greater use of twitter, facebook, RSS feeds and QR codes.

Developing digital professional expertise

All of the surveys asked about how respondents had developed their own digital know-how, generally defined as adoption of new devices or applications. As confirmed by project surveys among students and academic staff, professional staff rely overwhelmingly on self- and peer-development. ALDinHE responses are typical: 91% used self-teaching methods (e.g. online resources, manuals), 80% used trial and error, 83% learned by sharing expertise with colleagues and other members of staff. Social networks and 'online friends' were also noted. Among AUA staff, 91% had developed skills in using digital tools through ‘curiosity and self-teaching’, 78.4% informal training or support from peers, 74.3% manuals, online help and instructions, 57.1% following example set by peers, 32.1% user groups, forums blogs. SEDA members reported that their most recently adopted technology had been adopted by teaching themselves, experimentation, trial and error. Word of mouth also was the most common way of hearing about a new device or application. The ALDinHE report
adds more detail to the general picture of self-sufficient adoption, identifying two approaches:

- early adopter (that's an interesting technology, I wonder what I can do with it)
- problem solver (I have a problem, I wonder how technology can help me)

The SEDA report collated over 125 examples of online resources that had been found useful by members in developing their own digital expertise. These included JISC and HEA resources, alongside those of other professional bodies including ALT, SEDA and VITAE. JISCmail lists, conferences and journals, Twitter, and blogs were all cited. Looking across all the surveys, however, it seems that colleagues in the immediate working environment remain an essential source of advice and support.

Formal training was much less widely used and, where this was asked about, was found to be less valuable than informal approaches to technology adoption. AUA members were the most likely to have undertaken formal training, but this may be explained by their much higher use of institutional business systems as part of their professional role. The ALDinHE report notes that 'learning developers see training and developing their digital capabilities as something they will only do in response to immediate needs'. Vitae found that 76% of their respondents had not undertaken any training or development, of which 46% said they would have liked to have done so. The report concludes that 'there is a gap in structured digital literacies training provision within some higher education institutions'. Open responses to three of the surveys indicated dissatisfaction with training, which was found 'daunting' by some, and too basic by others. Project reports confirm more strongly these indications that:

- there is a perceived lack of relevant ICT training in many institutions
- what training is provided is often not taken up for reasons of time (workload or timing), poor communication about availability, and internal budgetary issues
- what training is provided is also not taken up because it is not seen as relevant:
  - technology is not relevant to what I do ('from what I see they are mostly a waste of time')
  - technology should not require training to use ('if the technology isn't intuitive, we shouldn't use it')
  - individuals prefer to be self-sufficient ('I pick things up quickly, and most applications these days are fairly easy to use and have good help facilities')
- there is a degree of dissatisfaction with the training that is provided (e.g. pitched too high/low, too generic)

However, from the perspective of this programme, adoption of technology is only the first step towards its effective use in support of academic or professional goals. Adoption is the phase most likely to be achieved without support or developmental intervention, not least because digital technologies are designed for usability. Adoption of new technologies to support existing practices is also the least transformative approach. Students have little difficulty with adoption: they have difficulty mastering complex functions, using technologies
in disciplinary contexts, applying academic/professional criteria of judgement to digital information, and developing new ways of making meanings (academic discourse) in digital media. So we need to look beyond adoption of technology by professionals to ask how digital capability is being integrated into their ongoing professional practice, how it is challenging or changing that practice, and how they in turn are challenging and changing the practices of others.

Few of the surveys asked about digital literacy as an integral aspect of professional development or CPD. Those that did, like Vitae, found that development activities which incorporated digital tools or approaches were more highly valued than ICT training alone, but even less widely available within institutions. The ALDinHE report noted that digital capability was not routinely ‘part of continuous professional development and reflective practice’ while HEDG, like other professional associations, found that their own activities were among the most valuable to their members. SCONUL members were the exception: for them, digital capability is well integrated with their ongoing professional development both through informal means and more formal appraisal processes and accountability targets. Staff responding to the SCONUL survey reported that they benefited most from local staff development, from sector-specific activities including those supported by SCONUL, and from opportunities to share expertise with other professionals outside of the library field.

Challenges to becoming digitally expert professionals

The main challenges to professionals becoming more digitally expert were perceived to be lack of time and speed of change. Training was not always available, or timely, or relevant. Some reports also dealt with motives as a sticking point. The HEDG report mentioned insecurity as a reason for staff not to engage in training, while the ALDinHE report again expressed doubts about the evidence: were digital technologies really worth the investment of time and effort? Surprisingly perhaps, reports did not mention a lack of professional reward as an issue – we seem to have moved beyond a time when digital expertise was seen as deserving special recognition – but this has given way to a fear of falling behind which can be equally demotivating. The SEDA report hinted at fears that digitally literate staff would be expected to respond to students 24/7 simply because they could. Again, the digitally native student was a potentially fearful figure to staff who felt they were only beginning to understand the potential of digital technologies themselves. SDF noted, rather surprisingly, that staff needs were not fully taken into account in decisions over procurement and set-up of IT systems. More widespread were comments about reliability and consistency of IT systems: why bother to learn new approaches if the networks and services they depend on are liable to fail?

Specific gaps in support were noted around development (of e.g. apps, learning materials, multimedia). This is in line with project baseline reports that note a loss of support staff in roles concerned with e-learning development, and restrictions on budgets for training in specialist areas. Keeping skills up to date are a challenge when conference attendance and other CPD opportunities are being restricted for financial reasons. As recorded previously, expertise with technology is largely acquired through experimentation, self-directed study and peer-support. High workloads and dispersed teams militate against these. There were also references to the difficulty of effective communication between the digitally literate and the digitally less advanced. ‘They’re so familiar with it that they can’t translate it’, one respondent complained. A senior staff developer expressed frustration at the different worlds
inhabited by innovative developers and innovative users of technology: 'Our end vision is beyond our competence. And the people with the competence lack the end vision.'

Developing digital literacies in others

All the reports described professional staff supporting the development of others. It is reasonable to assume that members’ digital expertise will impact on those they work with in general terms. For example, the ALDinHE report stated that 'Learning developers often find that their work with students – communicating, teaching, and developing teaching resources – drives their desire to develop their own digital literacies'. This was borne out by a survey question which asked about respondents' priorities for their own development. Highest rated were skills for producing online learning resources, while other areas of interest - mobile technologies, social networking, referencing applications, cloud solutions and lecture capture – closely reflect the technology preferences and academic preoccupations of students. However, it would be good to know more – across professional roles – about the relationship between the digital expertise of developers and the outcomes for students and staff.

Ten of the 24 Heads of Educational Development who responded to the HEDG survey stated that their unit was responsible for developing students’ digital literacy, 10 that they were responsible for developing support/professional staff, and 18 that they were responsible for developing academic staff. Educational development units are clearly pivotal in digital literacy development, then, along with library staff. ALT members were not surveyed but appear from other evidence to have an important role, e.g. as advisers on PGCert programmes and in supporting the digital expertise of other developers. Professional groups not covered in these surveys but known from project reports to have some responsibility for developing digital literacies include careers/employability staff, access/accessibility staff, and ICT support staff, which includes student ICT mentors and helpers.

The SEDA and HEDG reports described how digital technologies are being embedded within PGCert programmes for early career teaching staff. Typically these programmes include practice with digital learning environments and tools such as VLEs, blogs, wikis, webinars and video conferencing. Sometimes more conceptual issues are covered such as designing for blended learning settings and choosing appropriate technologies, and around 20% of programmes in the SEDA survey offer a specialised module in technology enhanced learning. Staff delivering these programmes have developed TEL expertise, or involve specialised staff members (often ALT members) in the relevant sessions.

Other ways in which educational developers contribute to enhancing digital literacy of others were (in descending order from the HEDG survey)

- Workshops
- Individual/bespoke advice
- Web sites
- Accredited courses
- Print publications
Online courses

The SEDA report notes a similar variety of interventions, and includes strategic work such as advising on the development of virtual learning environments. Development work was described in this report as principled and pragmatic: 'accommodating within our structures for learning and support the opportunity for using whatever digital technologies are useful'. This encompasses both using/modelling the use of digital technologies in development activities, and directly addressing the issues: 'looking at how technology mediates learning' was considered a scholarly as well as a practical concern. The HEDG report argued that development work also involves:

- providing safe places for staff to take risks
- helping staff to navigate the flow of technological change, find the good resources and understand the pedagogic uses of resources
- ensuring that staff understand they cannot be expected to know everything or indeed be responsive to students 24/7

The ALDinHE report was one that explicitly described digital literacy as an aspect of academic practice. It would be good to know more from all three of these associations about how digital literacy is being embedded into development work as an integral concern, and with what results.

Changing academic practice

As noted, there was limited evidence in these reports that the needs of students and staff are changing, or that the practices developers support are changing, as digital technologies are more extensively used for academic purposes. Gaining a deeper understanding of these issues could be an area of focus for the remainder of the programme's engagement with the professional bodies.

The Vitae report concluded that 'the use of digital technologies and media by researchers potentially is changing what it means to be an effective researcher or skilled academic/professional in higher education'. Issues they noted were:

- use of personal technologies blurring the boundaries between research and other activities
- new modes of research-related communication
- enhanced access to information and networks
- enhanced collaboration including peer review

Many respondents to the Vitae survey explicitly noted a global dimension to collaboration which has been enabled by technology. Research teams are often located on different continents, and increasingly this is also true of supervisory teams and the supervisory relationship. However, even when researchers are co-located, technology allows collaboration to be a constant in the research environment, rather than something which punctuates research activity as face to face meetings allow. The report notes that there are
new pressures to keep up to date with technology as well as with the latest research, and that this can be burdensome. Evidence from a related project report implies that this is less burdensome for early career researchers, who tend to regard digital tools and approaches as intrinsic rather than an additional skillset.

The SEDA and HEDG surveys noted similar impacts on the teaching and learning process. HEDG described:

- learning and teaching becoming more flexible with reduced reliance on physical resources
- the importance of the discipline in shaping the use of technologies
- growing expectations of staff and student digital skills

However, the same report argued that the availability of technology does not in itself change educational practice. This is confirmed by the ODHE respondents, only about half of whom 'always or frequently' used learning technology when it was available in teaching spaces. These two associations along with ALDinHE recorded many reservations about the use of digital technology in learning and teaching contexts. One HEDG respondent decried 'the growing reification of teaching and learning as a digital artifact rather than a private unrecorded time behind closed doors' and another described virtual learning environments as 'e-versions of transmission teaching'. Beyond the specific objections, these responses show a continued focus on the deployment of institutional technologies, rather than asking how personal and social technologies are transforming the context in which institutions make their learning/teaching offer to students. We know from the findings of both professional and project reports that it is these informal technologies that are predominantly used by younger researchers and students.

The SCONUL report highlighted that library staff have taken the lead in revolutionising their own practices and the information literacy of staff and students. The success of their approach is borne out by the prevalence of e-journals among the technologies that have highest reported use and impact across both professional association and project reports. It may be significant, then, that senior librarians see media literacy and digital scholarship as areas that have been under-developed to date but will be essential to changing practices in the future.

Several reports discuss differences in digital expertise, not only between professional groups but within them, and the potential for new resentments, lack of understanding, and inequalities of opportunity to emerge. It was noted that practices of learning, teaching and research are driven by institutional policy and student habits/expectations more than by technology per se. Academic practice, including digital academic practice, is also strongly rooted in subject areas and shaped by the forces acting there.

Strategic issues

Virtually all HEDG respondents had input into the institutional learning and teaching strategy or equivalent. Of a total of 27 responses to this question, 21 stated that they contributed to an e-strategy, sometimes as an element of the learning and teaching strategy. Less input into institutional research strategies was recorded. Respondents indicated that they had
influenced a range of other strategies, including institutional Strategic Plans, Internationalisation, Student Experience and Staff Development strategies, demonstrating the range of institutional strategies which digital literacy touches upon. In the same survey, responses to the prompt 'someone else is responsible for leadership in digital literacies at my institution' produced a normal distribution curve. When it came to non-leadership roles, answers were more weighted towards responsibility. In other words, HEDG members feel generally responsible for and capable of developing digital literacies in others, but they have different opinions as to whether they - as heads of Educational Development - should be leading this agenda at their institution.

The SCONUL report highlighted the strength of strategic partnerships in the digital literacy area. A significant minority of library teams are directly contributing to an institutional strategy for digital literacy, typically (68.8%) in partnership with academic departments and other professional service areas e.g. Teaching and Learning or Education Development units. The HEDG report noted that responsibilities are allocated in myriad different ways in different institutions. Student learning development and staff development (for research, teaching and professional staff) may come under different departments, not to mention the different aspects of digital capability that may be covered by media units, ICT support teams, TEL, careers and employability, access units, the library, and so on. The remit of these departments is also subject to fairly continuous realignment. However, informal and formal links are generally strong, formed around e.g. shared projects and membership of common committees.

Although the focus in these surveys was on professional services, there was acknowledgement that academic departments and research directorates need to be closely involved. Some professionals had more opportunity than others to engage in curriculum development, but all recognised that students need to develop digital literacy in the context of meaningful tasks, preferably with some assessment stake. Several reports commented on the hub and spoke model that predominates in the delivery of professional services. It will be interesting as a programme to see how well this model is delivering digital literacy development, and what alternatives exist.

Within this category it is worth noting comments about the role of ICT infrastructure in developing digital literacy at strategic level. In common with a large number of institutional reports, the AUA and SDF reports highlighted the need for a joined-up infrastructure that meets the needs of all members of the institution. Negative comments were made about the inflexibility of IT services and management at some institutions, about 'monolithic corporate systems' that are not fit for purpose at local level, and a lack of joined-up information systems hampering professional work. Some of these frustrations were about efficiency, but others had wider implications. For example, if professional staff are not allowed to put appointments directly into student calendars, it is clear to students that the institution is not valuing the work those professionals do. Only AUA staff were surveyed about their influence over the ICT environment, and they generally did not feel they could 'communicate ideas to management for implementing new digital tools'. It seems from project reports that institutions are working hard to involve students creatively in planning for ICT infrastructure and services: it will be important to ensure that the ideas of other users are not ignored in this process.
Conceptual issues

Several associations began by questioning the value of the term 'digital literacy' and either developed an alternative definition or found alternative terms that would be better understood by their members. SEDA preferred 'digital fluency', AUA used 'digital skills', while Vitae asked about the use of digital technologies to support the research process.

The ALDinHE report included a long discussion of how the term 'literacies' has come to be used in Higher Education, 'underpinned by the work of Lea and Street (2008) who highlight how meaning is socially created and negotiated in different academic disciplines'. However, definitions of digital literacy provided by ALDinHE members focused rather strongly on individual capability: 'key repeated terms included “awareness”, “effective”, “confidence”, “understanding”, “integrate”, and “competence”'. Some did express digital literacy in terms of discourse, and the report itself underscored that literacy should be understood as meaning-making in specific academic contexts. Learning developers bring to the programme an ethos of student partnership and an understanding that students have their own practices and resources that they deploy for study. This has always been true, but has a new relevance when students are engaging in digital practices – in study contexts – that are completely unknown to academic staff.

A number of conceptual frameworks were used to structure the survey instruments and the subsequent reports. The JISC digital literacy definition, and resources from the JISC national DL workshops, were referenced in a significant number. AUA had mapped the 7 JISC digital literacy areas to the 9 professional behaviours of their CPD framework, and SCONUL had used the same 7 aspects to structure their survey of current and future expertise. The SEDA report put forward a new meta-framework for building professional accounts of digital literacy, while SCONUL provided a draft of a new digital literacies 'lens' on their well-established '7 pillars of information literacy' model. Both will be progressed through activities with the programme.

Conclusions and recommendations

Generally speaking, the reports provide a solid basis for planning further interventions by the professional bodies in the digital literacy agenda. The baseline process has addressed the question:

*How is our work of development making good use of digital technology and how could it be doing that better?*

We have termed this 'developing digital professional expertise'.

Considering **digital professional expertise**, the reports have uncovered:

- Extensive use and ownership of digital technologies
- Widespread confidence in personal use of technologies to support professional working
- Less confidence in the capacity to 'keep up' with the pace of change, and with more digitally advanced students and professionals
• Concern over the blurred boundaries of personal/professional/academic life

• Retrospective enthusiasm for the impacts of technology on professional working, especially access to information, connections with other professionals

• Prospective anxiety as well as excitement, especially over the possible loss of f2f learning and development work

• Differential use of/attachment to mobile technology – to some extent this is differentiated according to age and role, but personal preference plays a strong part

• A greater use of social networks and informal/public/third party services among highly competence users

• Adoption of technologies overwhelmingly takes place informally, through experimentation, access to online materials, and peer support

• Main barriers to adoption and use are lack of time and opportunity, perceived deficiencies in training (time, timing, relevance)

• Mid career is the worst time to develop digital expertise

• Growing awareness of digital inequalities

Developing digital professional expertise is essential to developing the digital practices of staff and students more widely. The fear of 'not keeping up' expresses precisely this sense that – in an environment of digitally-mediated research, teaching, and communication of knowledge – a professional practice which is not at least conversant with current digital practice is of diminishing value and relevance to the institution. The precise requirements for expertise depend on the profession involved, but on the basis of these surveys there is a general interest in:

• using joined-up institutional information systems to manage the work of development more efficiently and effectively

• delivering development opportunities with the support – where appropriate – of online resources

• communicating and facilitating development opportunities using social media and other forms of timely digital communication

• collaborating more effectively with other professionals, including across organisational boundaries

However, it can be argued that digital professional expertise is not sufficient to support widespread transformational change in academic practices. There is a higher level question which can be framed as:

‘What does it mean to develop staff/students/organisations in a digital university and how are we contributing to that?’
This question does not assume that transformational work around the digital literacy agenda will necessarily be carried out using digital means, nor that delivering development using digital media will necessarily be transformational. In fact most of the institutional projects are working in intensive, face-to-face contexts of the kind that development professionals say is central to their established practice. Consultations on new accounts of academic practice such as the SCONUL digital literacy lens are taking place in parallel real-world and virtual contexts. The JISC Digital Literacy workshops were face-to-face events, though amplified by digital media.

In relation to this larger work of developing digital academic literacies across institutions, the baseline process has uncovered:

- Practices critical to higher education are changing radically: teaching, research, support of students, administration, knowledge transfer
- Technology is only one factor among many, and its influences are not always easy to distinguish
- Technology trends that are impacting most strongly on academic practices are: globalisation, connectivity, collaboration, ubiquitous information, public access to knowledge, efficiency, speed of change
- Technology can act as an amplifier of excellent research, teaching, and communication of knowledge – researchers and librarians are particularly positive about these opportunities
- Technology can also be used inappropriately to replace existing good practices or compensate for their cutting back, for example reducing contact, reifying learning as 'content', failing to encourage deep learning through a focus on surface interactions. Learning developers and some staff developers are particularly concerned about these threats.
- A wide range of development activities have been described, but there is a common person-centred ethos – literacies are whole-person qualities that have life-wide implications
- Media literacy and digital scholarship are not well understood or 'owned' in academic institutions, unlike for example information literacy, learning skills or employability
- The DL agenda lacks strategic integration and continuity; responsibilities are split, professional/academic services are in constant change and/or crisis. However, the separate professional services have good links through e.g. innovation projects, common committee membership, co-location.
- The hub and spoke model for supporting digital expertise (e.g. e-learning champions) needs to be investigated for its fitness for purpose
Recommendations for institutions

Not all professional bodies provided recommendations, and it is expected that these will evolve over the coming months as the outcomes of the baseline process are returned to members for consultation. Those that were made were:

- Learning professionals are key to DL development and should be given appropriate time, resource, role recognition
- Postgraduate researchers can have a significant impact on institutional capacity as teaching assistants and early career academics – again ensure time and opportunity for development
- Provide opportunities for peer learning and peer-supported exploration at all levels and in all roles – location and shared spaces can be critical
- Put in place structures that support sharing across institutional boundaries – hub/spoke structures for professional support, links between student and staff facing services, consultations that involve staff and students
- Ensure supportive infrastructure for flexible adoption and use – including e.g. laptop clinics, reliable networks
- Better support for informal technologies – mobile, cloud, third party, open source
- Consider the use of mobile and social technologies in institutional communication strategies, recognising that they are used preferentially by students and early career staff (and that institutional systems and desktops are used less)
- Involve pioneering technology users to develop a resilient ICT infrastructure – 80/20 today will be 20/80 tomorrow
- Focus training on mid-career professionals/academics
- Address barriers to training identified by professional staff i.e. time and timing, motivation (perceived speed of change), professional recognition
- Use and value the expertise of younger staff/students
- Involve HR departments in issues such as career recognition for digital expertise and the threats to work-life balanced posed by the use of personal technologies in professional contexts

Recommendations for taking forward the professional bodies strand of the DDL programme

- Continue to develop professional, CPD and competence frameworks that incorporate digital expertise alongside other professional requirements
- Continue to develop guidance and development materials that incorporate digital literacy alongside other aspects of academic practice
• Plan inter-professional events at which digital literacy is a theme

• Identify and help to shape outputs of the JISC DDL institutional projects that are likely to be of most value to professional body members

• Communicate JISC DDL programme outcomes – tools, resources, frameworks and lessons learned – to professional body members and via members to institutions not directly involved in the programme

• Identify specific opportunities to collaborate between professional bodies and institutions involved in the JISC DDL programme: for example, bridging the gap between staff/academic/learning developers and e-learning staff

• Build up examples of excellent practice, both strategic (collaboration across professional services to support a holistic approach to digital literacy development) and curriculum-based

**Resources for public use and reuse**

• Baseline instruments and components of those instruments will be released for reuse by the sector

• Definitions and conceptual frameworks will also be shared via project pages on the design studio

• The digital literacy lens to the SCONUL 7 Pillars model provides a framework which resonates with library staff: this is being shared more widely

• The SEDA meta-framework for digital literacy will be further developed, and mapping to existing professional frameworks will be considered