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Novice to expert –developing digitally capable librarians – Dr Charles Inskip, UCL Department of Information Studies, c.inskip@ucl.ac.uk

1. Introduction

The estate of digital scholarship is expanding, the boundaries of academic librarianship are blurring, and researchers and academic staff are widening their engagement in the process of creating and sharing new knowledge through the use of repositories and adoption of emergent technologies. This has the potential to lead on one hand, to a lack of resourcing of support, which has traditionally been delivered by library staff and, on the other, to opportunities for forward thinking professional services to revise their remit and add to their portfolio. The research discussed in this chapter was part of a (UK) nationwide JISC-funded programme, Developing Digital Literacies (JISC, 2014). JISC is a UK non-profit organisation with the vision to "make the UK the most digitally advanced education and research nation in the world" through "exploiting fully the possibilities of modern digital empowerment, content and connectivity" (JISC, 2016). They operate the national UK Higher Education Janet network, negotiate collectively with vendors and publishers, and provide training and advice within the education sector. This chapter explores the context of current conceptions of digital literacies and the growth in digital scholarship, which is defined here as "the ability to participate in emerging academic, professional and research practices that depend on digital systems" (JISC, 2011). It goes on to discuss issues around skills and competencies of librarians, focusing on how these relate to digital literacies and digital scholarship, particularly in university and research sectors.

Since the millennium, but more particularly over the last ten years, the impact of technology on provision of library services in UK Higher Education has been profound. Naturally, the increase in access to online resources within colleges and universities has affected budgetary and strategic considerations and the means of service delivery, while, in the front line, library staff are now inhabiting a complex and ever-changing information environment which would be almost unrecognisable to colleagues from the last century. Alongside these changes within the profession, the context and practices of users of all types has also developed apace. If libraries are to effectively support the needs of scholars then it is important to recognise the changes in digital scholarship practices, and attendant digital literacies, and map these to the skills and competencies needed by library staff to support these practices.

2. Digital scholarship

The availability of previously unfeasibly large amounts of data and literature at the click of a button has led to significant changes in research practices across the disciplines. Researchers are more visible in their creation of new knowledge through the use of social media and open repositories, and this is being shared seamlessly across now-invisible collection boundaries which are no longer bricks and mortar;

the physical location (of researcher and collection) is often irrelevant to the user; access, rather than ownership, is now the key issue informing service provision; and, particularly, communication is central to digital scholarship (ACLS, 2006; Lynch & Carleton, 2009). Research practices, which also involve the use of sophisticated software in the creation, organisation and analysis of large datasets, need to be supported by the library as it moves towards an information commons or 'scholars collective' (Lewis, 2007). As this change is now impacting on the humanities, as well as the early adopters in the sciences, the adoption of technologies are now all-pervasive in Higher Education. Science's 'cyberinfrastructure' (National Science Foundation, 2003) is now Arts and Humanities' 'digital humanities'.

The JISC definition of digital scholarship referred to earlier goes on to identify some examples of practices: "for example use of digital content (including digitised collections of primary and secondary material as well as open content) in teaching, learning and research, use of virtual learning and research environments, use of emergent technologies in research contexts, open publication and the awareness of issues around content discovery, authority, reliability, provenance, licence restrictions, adaption/repurposing and assessment of sources" (JISC, 2011:2). It should be clear from these examples that although the role of the library in digital scholarship may be considered (by the library) to be central, there are other stakeholders within the institution that have an interest. These may include learning and teaching support, e-learning, academics, doctoral schools, and technical services.

Efforts have been made at institutional level to reflect and support these changes in practices through development of some libraries into learning centres or information commons. This has led to 'hybrid information jobs' (Corrall, 2010) for library staff within these new centres. Staff in these positions may suffer from skills gaps (Auckland, 2012). Addressing these gaps should be made a priority if services are to be provided which effectively meet this shift in provision. Problems can also arise if a library-centric approach is taken in this development. Open Access repositories, for example, may be considered more important by the library than by the academics who it is planned will populate these repositories with their digital creations. Despite the importance (to the library) of a stewardship role in developing, making accessible, and preserving these collections, time poor researchers are reluctant to engage with what they see as administrative and bureaucratic interventions (MacColl & Jubb, 2011).

The growth in research data management (RDM), for example, has put these issues into focus. The activities around RDM involve drawing together policies and infrastructure to support data curation, sharing and reuse. While the role of the library in this context may be clear, there are difficulties in resolving what may be considered to be ambiguous roles when working in large Higher Education institutions (Nielsen & Hjørland, 2014; Pinfield, et al, 2014). Documented high profile examples of these activities in the UK at University of Oxford (Wilson, et al, 2011) and University of Edinburgh (Rice & Haywood, 2011) discuss some of the problems around skills gaps and collaboration, highlighting the 'interrelated nature of data management activities' (Wilson et al, 2011:278) which require diplomacy and

negotiation when navigating amongst the departments, services and, even, institutions.

3. Digital literacies

It is important to consider the digital literacies needed to maximise the potential return from investing in digital scholarship infrastructure. JISC adopt a broad definition of digital literacy, considering the "capabilities which support living, learning and working in a digital society" (JISC, 2014). Their current model, the "digital capability framework" (JISC, 2015) comprises: Information, data and media literacies; Digital creation, innovation and scholarship; Communication, collaboration and participation; Digital learning and self-development; ICT proficiency; and Digital identity and wellbeing. This framework has recently been adopted in the UK by the Quality Assurance Agency for Higher Education (QAA) to support one of their review themes for 2015/16, digital literacy. While Higher Education (HE) institutions have been developing student and staff information and digital literacies for some time, this has often been at an operational, rather than strategic level. This delivery has generally been led by the library, but often involves wider stakeholders, particularly those responsible for learning and teaching (particularly e-learning), and technical provision and support. The move towards measuring, or evaluating, the level of delivery and support for these literacies as part of formal external quality assessment, has led to more widespread awareness, particularly at institutional management levels, of the importance of formally (and visibly) supporting these capabilities. This move has also coincided with a growing interest and adoption of involving students in curriculum development and delivery, as 'change agents' (Kay et al, 2010). A good practice example of this approach was through its adoption at Exeter University, where students have led and participated in numerous research projects: "assessment and feedback, engagement in lectures, seminar provision, technology development (such as podcasting, video-streaming and the use of voting systems), learning spaces, sustainability, employability, cross-campus provision, personal tutoring, academic writing, and peer-tutoring" (Kay et al, 2010:3) which directly impacted on curriculum delivery in the institution. This holistic institutional approach to delivery of digital literacy, or capability, appears to be gaining traction, drawing from the wealth of groundwork by committed networks.

There has been a surge in the adoption of digital scholarship practices by researchers, through the availability of electronic information sources (Lippincott et al, 2014) and tools that allow the asking of heretofore unimagined research questions. Centres for Digital Scholarship have been established, for example, at the Bodleian at the University of Oxford (Bodleian Libraries, 2015), University College London (UCLDH, 2015), University of Edinburgh (University of Edinburgh, 2016) and University for the Creative Arts (UCA, 2016). There has also been a raising of awareness and obligation at all levels to support the development of the literacies required to ask these questions, answer them and, notably, communicate these findings. The combination of these two factors means that information professionals need to reflect on their role in the delivery of information and skills.

4. Librarian skills and competencies

The role of librarians, and their attendant skills and competencies, were explored widely in the literature following the turn of the millennium. Partridge and Hallam

identified two DNA strands of the library and information professional: “generic capabilities and discipline knowledge” (2004:7), which intertwine, as a genome. These strands reflect the wider literature on librarians’ skills and competences (for example, Missingham, 2006; Orme, 2008) which suggests that the complexity of changes caused by the shift from physical to digital information requires a fundamental review of professional skills. These changes are leading to a need for the librarian to become a ‘polymath’ (Broady-Preston, 2010), enabling them to draw from a wide range of bodies of knowledge, or a ‘blended professional’ (Corrall, 2010), with a merged set of identities and practices which allow the information professional to cross contested jurisdictions of other (‘rival’) professional services in the institution (Cox & Corrall, 2013). These boundaries between libraries, technologists, administrators and academic staff are made ever more visible by the adoption of technology in the practices of digital scholarship – research data management, repositories, web-based materials, electronic resources, information and knowledge management and information literacy support are all considered by Cox and Corrall in their discussions. They conclude that:

> “[t]he long-term success of such forays will be influenced by a number of factors, including the efficacy of the profession’s knowledge base in that area or its ability to absorb other knowledge bases, the plausibility with which new roles can be equated to the existing public image of the profession, and the organization and posture of other professions that are jostling for position.” (Cox & Corrall, 2013:1538)

The complexity of navigating these bounded jurisdictions, and crossing them, requires motivated service leaders (on all sides), appropriately skilled staff, opportunities for negotiation, and support from the institution.

There are numerous examples exploring the need to develop generic skills such as customer service and technology support (for example Chawner & Oliver, 2013; Haddow, 2012, Mamtora, 2013; Vassilakaki & Moniarou-Papaconstantinou, 2015). This widening of the skills net can be supported not only by library school (Auckland, 2012), CPD (Mamtora, 2013), in-service training and professional organisations (Corcoran, 2014) but also by collaboration (Bonn, 2014) and institutional change (Vinopal & McCormick, 2013). If the move towards digital scholarship is to be facilitated by the library as a central player, leading to an increase in the adoption of digital scholarship centres (Lippincott, Hemmasi, & Lewis, 2014), then skills, collaboration and institutional change all need to be considered.

Looking at the complex changes in the digital information landscape, American College and Research Libraries (ACRL) discuss how “the intersections between scholarly communication and information literacy” (ARCL, 2013:1) offer the opportunity for collaboratively focused strategies which require a “deeper knowledge of the life cycle of scholarship” (2013:5) and information. They suggest that library and information professionals need to develop their own skills in pedagogy, curriculum development, advocacy and institutional change in order to meet the challenges created by these changes. Many of these issues were also drawn together by Research Libraries UK (RLUK) in their comprehensive report, Re-skilling for Research (Auckland, 2012; Brewerton, 2012). This work explored researcher information needs and mapped these to subject librarian tasks in order to identify skill sets required to effectively support these needs. The findings identified 9 key

skills gaps relating to advice and support on: preserving research outputs; data management and curation; complying with funder mandates; data manipulation tools; data mining; use of metadata; preservation of project records; sources of research funding; and development of metadata schema (Auckland, 2012:43). These skills gaps relate very closely to the digital scholarship practices identified earlier (JISC, 2011:2) and the attendant growth in open access. These findings relate closely to those identified in the wider literature, helping to further support the generally agreed view that the changes in the digital landscape and the attendant changes in research practices require a re-think in the development of staff to effectively support users in this complex environment.

5. SCONUL Survey

A collaborative investigation of the support available to researchers in developing their digital literacies, Research Information Literacy and Digital Scholarship (RILADS, 2012), explored the range of skills and competencies of academic librarians suitable for these increasingly complex digital environments and linked these to the range of literacies required for this support. One strand of this work was led by SCONUL, the UK Society of College, National and University Libraries, whose role is to raise awareness, lobby stakeholders, support collaborative practices and service development (SCONUL, 2016a). SCONUL was a member of a nationwide JISC programme, Developing Digital Literacies (DDL), aiming "to promote the development of coherent, inclusive approaches to digital capability across institutions of further and higher education" (JISC, 2014). An element of this project involved a survey of named Heads of Service and senior managers of academic libraries in the UK (SCONUL, 2012). The survey explored issues around the development of staff skills relating to the support of users' digital capabilities and identified gaps, good examples of current practice and opportunities for SCONUL, as a professional association, to support staff development.

The reason for choosing to approach named SCONUL members was that these participants would be in a position to engage practically with the survey findings once it was complete. Participants were asked to respond "on behalf of the key group of staff responsible for the delivery of digital literacies" (MacKenzie, 2012) as it was felt that this would help focus responses on the institutional experience, rather than generalisations. 53 participants completed the survey, giving a response rate of around 30%.

The opening question of the survey drew from a JISC definition of digital literacies, which identified six key capabilities: ICT / computer literacy, information literacy, media literacy, communication and collaboration, digital scholarship, and learning skills (JISC, 2011). The participants were asked to evaluate their staff's capabilities in relation to these criteria, identifying the level of staff expertise (expert / competent / novice / not applicable) and the importance of staff developing expertise in this area (essential / not a current priority / maybe in the future / not required). Freedom was given to the participants to provide qualifying comments. Participants were then asked to give feedback on a digital lens iteration (SCONUL, 2016b) of SCONUL's Seven Pillars of Information Literacy framework (SCONUL, 2011) to determine its

relevance and value as a staff development tool. They were then asked to provide information on the involvement of their service in strategic development of digital literacies in their institution. Finally they were asked to identify the level of prioritisation for how staff development should take place, focusing on whether this should be local, role or sector specific, as part of an academic qualification, or by professional association or sharing experiences across professional bodies, giving examples and idea for workforce development activities. The findings were then used to inform the development of a resources list (Inskip, 2015) designed to signpost resources, drawn from the JISC Developing Digital Literacies programme, that would help support in the development of digital capabilities in academic libraries.

A key finding of the survey was that although staff skills for digital scholarship were found to have the highest number of responses showing staff were ‘novice’ in this area (Figure 1), development was not considered to be as ‘essential’ as most of the other capabilities (Figure 2).

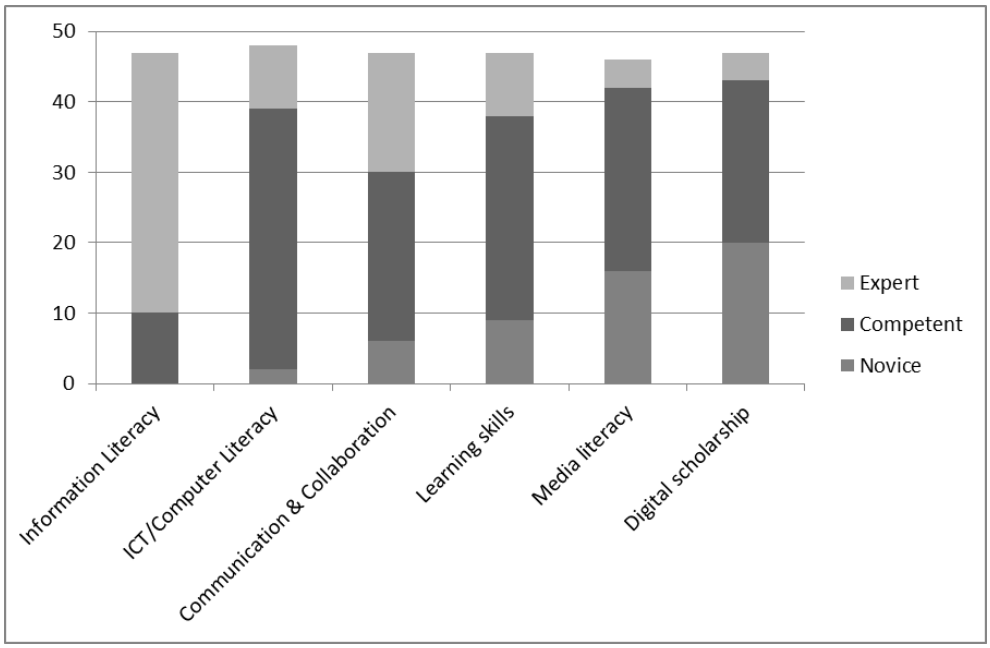

Figure 1 . Assessment of the digital capabilities of staff whose core roles are student support and academic liaison: staff expertise

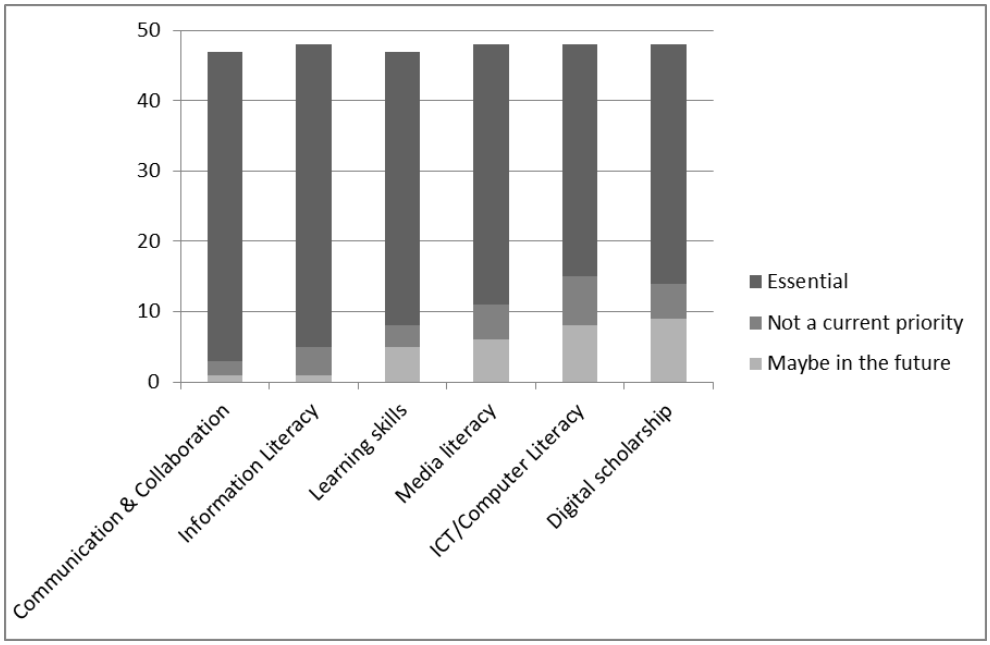

Figure 2 Assessment of the digital capabilities of staff whose core roles are student support and academic liaison: importance of staff developing expertise in this area

When qualifying their responses around expertise and importance of staff digital scholarship skills, participants said that this was “an area of growing importance for us”, and that it was an “emerging field but important to develop especially for staff support”, although it may be “not well understood or relevant to some student support”. Although there were deemed to be “pockets of good practice in the service” this may not be “in the core roles with student support and academic liaison. Some knowledge sharing is needed”. Further to this, although “librarians and learning technologists have an expert awareness” they may not “have all the tools required to repurpose digital material”. These comments contrast with, for example, Information literacy, which was considered a “traditional library function” or ICT literacy, both of which are considered to be supported with higher skilled staff – although even in these areas, skills cover a range of levels and the comments seem to indicate that despite these areas being considered generally more expert, these may be represented by pockets of good practice, rather than across-the-board.

When asked to how they were supporting the development of these digital literacies within their service, participants provided detailed evidence of good practice: “Ongoing information, training and development opportunities for groups of staff” were very visible. Some took the approach of the support of “a small team of digital skills supporters … supported by the centre for development of L&T” or “internal & external training” and “identifying in-house, free, and low-cost courses for skilling up staff.” Another means identified was the use of “appraisals leading to individual action plans (with) external events and peer supported activity”. Links across services (to Learning and Teaching as well as Faculty) were evident, as was high-level involvement in “strategic changes to the student curriculum”. An urge to become paperless has involved “trialling iPads” and other mobile devices. Another approach was to involve staff involve in decision making through “involvement of the academic liaison librarians in the selection, implementation and promotion of digital resources and content; on the job experience of using digital tools” and working cross-sector with “Technology Enhanced Learning team (who) are developing skills by using and promoting Blackboard (etc)”. Linking appraisals with training, and the

adoption of relatively low-cost internal peer-support were notable. Cross-service relationships, particularly with faculty and learning and teaching staff around curriculum development were also mentioned.

These answers led an exploration of the level and type of involvement by the participants' service in institutional strategic development of digital capabilities. They were asked how their service was contributing to the strategic development of their institution's digital literacy. Again, it was apparent that there was a wide range of opportunities and challenges. A small number of services were contributing to strategic development "mostly ad hoc and largely dependent on personal contacts" and finding it to be "slow work as current academics can be reluctant to change practices". However, in the main, participants were involved at a relatively high strategic level, albeit in partnership, rather than leading, being included in cross-service working parties and learning and teaching committees. It was evident that "digital literacy is a key priority". Cross-departmental collaborations were evident and employability initiatives were broadening the area of digital scholarship skills to include wider services such as careers. However in some institutions there was "further work to be done to embed this in university priorities" as it was "not seen as a current priority compared with other issues, though some academic staff are on board".

Finally participants identified that what was needed to ensure that library staff maintain and develop their digital literacies was a strong focus on local staff development initiatives, which were role or sector specific. SCONUL's input and that of related professional associations appeared to be welcomed more than support from academic library qualifications (Figure 3).

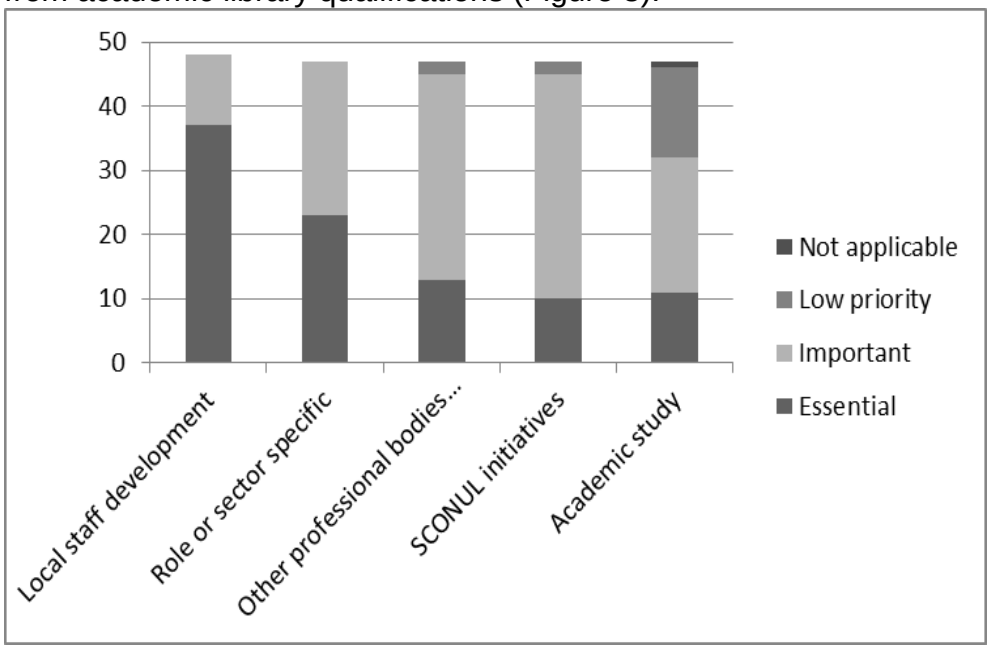

Figure 3 What is needed to ensure that library staff maintain and develop their digital literacies?

These findings were then used to focus on exploring action being taken to bridge the gap between novice and competence, examples of good practice in staff development for digital literacy, the value of the digital lens on the SCONUL Seven Pillars, and opportunities for SCONUL to adopt a more strategic role in digital

literacy. This led to a mapping exercise (Inskip, 2013), circulated to SCONUL members, which aimed to provide summary context for appropriate resources from the JISC Developing Digital Literacies programme which would be helpful in addressing the key challenges and issues which arose from the survey.

6. Resources

In terms of bridging the gap, resourcing in terms of funding for staff development can be more readily released through support at policy and strategic level. It was suggested that organisations not benefitting from this support could explore resources which focus on institutional change and interdepartmental collaboration. Three projects from the DDL programme were identified as being appropriate here: Digidol (Cardiff University, 2013); Pride (University of Bath, 2013); Seedpod (Plymouth University, 2013). These initiatives particularly explored approaches to institutional change, notably through a holistic approach, enabling and encouraging conversations not only between services but also bringing in students and academic staff. It was suggested in these projects that through these conversations, raised awareness and 'buy-in' into the importance of developing digitally capable staff and students would be much more easily generated, while supporting and recognising the importance of contextual, or discipline-specific, needs and requirements.

This approach aligned closely to those resources focussing on developing networks and collaborations. Recognising that the digital landscape is shared, Heads of Educational Development Group (HEDG, 2013), Cascade (University of Exeter, 2013) and Standing Committee on Academic Practice (SCAP, 2013) resources particularly encouraged and reinforced the idea of engaging with students as change-agents. Staff in other services across the HE institution face many of the same challenges as those in libraries, and these resources recognised that collaborative practice could provide insights into ways of working which could be adopted more widely.

It is generally agreed that good practice examples can support staff development. Here, the rise in importance of learning and teaching has become more apparent. Librarians are increasingly delivering information and digital literacy interventions to colleagues, staff and students. The studies by Association of Learning Development in Higher Education (AldInHE, 2013) and Institute of Education (IoE, 2013) were highlighted for their potential in this support.

Continuing professional development (CPD) was recognised in the survey as being important to staff development. Looking more widely across the institution to related professional associations' CPD frameworks it was found that Association of University Administrators (AUA, 2013), Staff and Educational Development Association (SEDA, 2013) and the Digital Department project (UCL, 2013) as well as the Researcher Development Framework (VITAE, 2013) all addressed similar issues and challenges as those faced within the library service.

The preceding examples were focused predominantly on staff developments and management issues such as strategic change. Numerous examples of specific tools, relevant to institutions already benefitting from a supportive infrastructure but searching for inspiration to continually develop a digitally literate workforce, were identified. Frameworks, mainly mapping skills to make comparisons, were

considered quite widely to be of value. These enabled comparison between disciplines, services or faculties or, importantly, between service staff and user practices, helping to identify gaps in provision. Training programmes, tools and case studies are too many to mention here, but it is clear from their quantity and variety that there is widespread recognition of the value of resources in this area, many of which are sharable and freely available and in different formats – from online to face-to-face workshops.

7. Discussion

The digital capability framework (Information, data and media literacies; Digital creation, innovation and scholarship; Communication, collaboration and participation; Digital learning and self-development; ICT proficiency; and Digital identity and wellbeing, (JISC, 2015)) recognises the widespread nature of what users need to be able to do if they are to be digital literate. These capabilities are contextual: they not only relate to what type of information landscape the user is a part of (school, university, workplace) but also their discipline, and the particular culture of their institution. Librarians have been delivering and supporting what is currently called digital literacy (and springs from bibliographic instruction / user education / information literacy) for some time. The digital capabilities reflect the ongoing, complex changes in type and format of information and strongly suggest that the skills and capabilities of the librarian need to be constantly reviewed and refreshed to support these changes.

Although staff expertise and competence are in evidence, the survey showed (Figure 1) that there is a low level of skills base in digital scholarship in particular. In the context of the definition of digital scholarship introduced earlier, the move towards access rather than ownership, and the increasing use by researchers of sophisticated tools to analyse large digital collections is having a real impact on the delivery of support to these users. Clearly, if librarians and other stakeholders in the digital landscape are to effectively support users in their abilities to participate in the practices that depend on these new digital systems (JISC, 2011), and if the skills of librarians are not sufficiently developed and supported on a continual basis then the users are going to go elsewhere, or they may not engage with the very systems (open access repositories, for example) designed to support them in their activities. This was identified as an issue by MacColl and Jubb, who suggested that "[r]esearchers have little interest in the support services libraries have built for them in recent years, yet they are aware of support needs that are not being met" (2011:10). Communications, as well as technical skills, need to be enabled by the institution if the benefit of these enhanced skills and services is to be fully realised. Reaching out and collaborating with partner services and departments is a vital strategy in enabling access to the users of these services, who do not care who provides these services – as long as they are timely, useful and reliable.

The level of 'novice' staff in the survey may have reflected the timing of the data collection. At the same time as this research, the RLUK findings of the 9 key skills gaps (Auckland, 2012) and the ACRL intersections (2013) were also responding to a widespread perceived need. Other commentators referred to earlier also identified a need to review and develop the skills and competencies of library and information professionals to reflect the impact of digital information on practices across the

board. Professional associations at the time were also actively developing and implementing new frameworks. In the USA, ACRL were setting out on their revision of the Information Literacy Competency Standards for Higher Education (ACRL, 2016) and in the UK, CILIP were launching their Professional Knowledge and Skills Base (CILIP, 2013), partly informed by the need to recognise the shift in the profession caused by the surge in digital information.

The results in Figure 2 indicate that the urgency of around digital scholarship was not considered to be as severe as, say, Learning, Information literacy, or Communication and Collaboration. At the time, these three issues were more immediate, certainly in universities where teaching is prioritised over research. However the combination of a greater proportion of novice staff with a lack of urgency of their development in the area of Digital scholarship could be considered to be of concern. If the move towards Digital scholarship is as significant as evidence from Auckland (2012), ACRL (2013) and Lippincott et al (2014) suggest then this may be more urgent than originally anticipated, particularly if we consider the surge in open access repositories prompted by the funder and evaluator obligation to the researcher to make their work available through these repositories (HEFCE, 2015). Unsurprisingly it is the 'stick' of the requirement of depositing research that is having more impact on service development than the 'carrot' of universal access to knowledge. This can be used to the advantage of the library. It is not their requirement after all, butan external driver, which can be used inform policy and strategy development and to lever funds which will enhance the position of the library within forward thinking institutions.

The evidence in the survey (Figure 3) of the range of sources of staff development initiatives support the contextual nature of this need quite strongly. As we move across the options from 'local staff development' to 'academic study' it can be seen how as the source moves further from the context it is seen as being less important to the participant. Adoption of these strategies may also enable the cross-service collaborative conversations proposed by numerous participants in the DDL programme, leading to Broady-Preston's polymath (2010) and Corrall's blended professional (2010) becoming the norm. In-house staff development recognises local context and more flexibly builds upon existing staff skills. In-house training can benefit from experiences from colleagues outside the institution through collaborative networks and formal and informal skills-sharing exercises supported by professional associations and library schools. Duplication of these skills within the institution, for example with IT or e-learning support, or academic departments, may cause difficulties and tensions – the contested jurisdictions mentioned earlier will come into play. Again, communication, negotiation and advocacy skills become increasingly important in supporting these developments.

The survey comments support the view that there is much already being done in this area, albeit often at a grass roots ad hoc level. While there is some involvement at the institutional policy making and strategic planning level the contested area of digital literacy in general and digital scholarship in particular require a sustained higher level of recognition of the value of the library service from institutional management. This will enable the release of resources to support staff development one hand, and encourage a wider recognition of the importance of these capabilities on the other. This is evident in the recent adoption by QAA, mentioned earlier, of the

digital capabilities framework in their review process, which seems to be prioritising their importance as part of the student experience and the related quality of university delivery. This adoption, if it continues, has the potential to help libraries demonstrate their essential contribution to the mission of their institutions. It leads to awareness of digital literacy at the very top of the institution and provides a valuable opportunity for library advocacy. If institutional policies and strategies recognise the importance of the value of digital literacies then this is likely to facilitate the cross-service and inter-stakeholder conversations required to support strategic staff development, which may address the concerns expressed by these participants. Levering these literacies into long-term policy through evidence-based advocacy and wider institutional buy-in is key. Recent developments, however, show that the sustainability of even institutional-wide culture changes cannot be relied on. One of the DDL projects which focused on institutional change has since been disbanded because of changes at the top of the institution which led to a re-writing of strategies and a refocus away from digital literacies. This demonstrates that even institutional buy-in is fragile, and reliant on continuing support from the top, which is out of control of even the most street-smart head of service.

8. Conclusions

As the academic digital landscape continually expands, information access widens, and technology becomes more sophisticated and pervasive there is a constant need for all stakeholders to develop and progress. Librarians need the continuing development of skills and competencies to support their users. Staff may be expert in some digital literacies, and more competent or even novice in others. The recommendations that these challenges may be faced by a combination of policy and strategic development and organisational change; supporting networks and collaborations; good practice case studies; reference to continuing professional development frameworks from outside the library sector chime with similar work in related contexts, showing this is a widely supported view. The creeping adoption of digital literacy by standards agencies is an opportunity that may enable library services to adopt some of these recommendations. Service development requires leadership from forward-thinking and politically engaged library management who are able to create and develop sustainable and resilient networks which will recognise the likelihood and impact of unforeseen strategic institutional and sectoral changes.

9. Acknowledgments

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