Envisioning the Academic Library: A Reflection on Roles, Relevancy and Relationships

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A Reflection on Roles, Relevancy and Relationships

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The focus of this article is to reflect on current and near future issues and trends concerning academic libraries. This includes an overview of the literature on embedded librarianship and a focus on the need for more participatory and collaborative approaches to library services.

The core argument is that academic libraries need to continue to adapt their roles and develop stronger relationships across the university in order to maintain and promote their relevancy to all stakeholders. Embedded roles in research and teaching, and an embedded existence through collaboration and outreach will strengthen the academic library's presence within its parent institution.

KEYWORDS university libraries; collaboration; embedded librarianship; future developments; information literacy

INTRODUCTION

Libraries are in a continuous state of change, and academic libraries in particular have to adapt their traditional roles to the changing needs of their users and align with the shifting higher education model by appreciating evolving information-seeking behaviours and increased use of social media (Alvite and Barrionuevo 2011).

In order to plan for an adaptable platform for services and manage change successfully, librarians must embrace the changes to the higher education sector and rethink their roles to embrace a participatory, collaborative and distributed service (Bartnik et al. 2010), making greater use of digital and mobile technologies.

This paper shows the need to foster research within the academic library by pushing outwards and forging new relationships with academic colleagues, researchers and students, and to do this university library staff must advocate new roles and responsibilities.

OPPORTUNITIES AND UNCERTAINTIES

Key trends, which can be seen as opportunities and/or potential challenges, to the academic library include:

- The emergence of open access where discoverability will be the key to success (see Harris 2012);

- Emergence of new scholarly forms of communication – where altmetrics are likely to become increasingly important (see Priem et al. 2010; Dalton 2013; Galligan and Dyas-Correia 2013);

- New media formats and business models – ebooks and patron-driven acquisition (see Lewis 2013);

- Increased migration to digital environments – the increased need for sustainability for digitised content (see University Leadership Council 2011);

- Re-designing of libraries as learning commons and the re-purposing of library space (see Bryant et al. 2009; Watson 2010; Latimer 2011; University Leadership Council 2011; Cunningham and Tabur 2012);

- Changes in user activities which will have an impact on user behaviour, i.e. how people engage and interact with the library and its resources (see Nicholas et al. 2008; Niu et al. 2010; Smyth and Carlin 2012);

- Increased competition from other information providers such as Google and Amazon and the decline in use of the OPAC (see Ross and Sennyey 2008; Judd and Kennedy 2011);

- The global financial crisis (see Research Information Network 2010);

- Increased accountability and the need to show impact – the implications of the REF framework (see Corrall et al. 2013; Cox and Pinfield 2013);

- The changing nature of higher education – a more diverse student populace; the growing popularity of massive online open courses (MOOCS); changing graduate skill

requirements by employers; rising expectations of users; and the rising trend in moving away from the physical library (see New Media Consortium 2013);

- The changes in accessing information, storing, retrieving and using information (see Redden 2010; Jackson 2013).

These challenges to the traditional role of the academic library mean that staff must strive to rethink and repurpose what a library is and what a library does. They need to re-imagine the new role of the library and librarians with the possibilities afforded by the internet, social media and increased digitisation (Corwin et al. 2009), and articulate their role for the future and new services that can be developed, particularly by shifting from a service orientation role to one of a partner in learning (Meulemans and Carr 2013).

It is not enough for libraries to support learning and teaching but they must truly foster learning and research as well and be partners in these areas. Embedding a distinctive contribution from the library into virtual and blended learning activity, for example, remains a real challenge. To do this the library needs acceptance by users, to be recognised for the services they supply and their active role in the university.

As information professionals, academic library staff could act in a more entrepreneurial style and seek out ways to add value to their roles and show the impact of their work and to do so they must go beyond the traditional parameters of the library. They need to respond more acutely to their users' needs, and develop capabilities to build better profiles of their users, for example

through continual needs analysis (Pantry and Griffiths 2009), expand their metrics and change how they measure success (Corwin et al. 2009). Academic libraries need to modify assessment from user satisfaction to meeting unarticulated needs. They need to be less library-centred and more user-sensitive (Matthews 2012). The real challenge lies in maintaining relevancy through communication, and this should involve meaningful communication to all potential users from the first year undergraduate to postgraduate students, PhD students, and academic staff and researchers.

EMBEDDED LIBRARIANSHIP

Abbott (1998, 441) characterises librarianship as a 'federated profession' ("*a loose aggregation of groups doing relatively different kinds of work but sharing a common orientation*"), and it is this distinctive trait of our profession that makes librarianship responsive to change and allows for the librarian role to evolve; but embedded librarians need to be even more proactive and anticipatory, working within a customised model with a shared responsibility for output (Shumaker 2012).

Embedded librarianship involves *"... focusing on the needs of one or more specific groups, building relationships with these groups, developing a deep understanding of their work, and providing information services that are highly customized and targeted to their greatest needs. It involves shifting the model from transactional to high trust, close collaboration, and shared*

responsibility of outcomes. In order for an embedded librarian to achieve these goals, there must also be some long term planning between the customer and the librarian" (Brower 2011, 3).

Seminal work by Shumaker and Talley (2009) illustrates that characteristics of embeddedness could range from the librarian being located within the user group, to the librarian being funded by a specific user group and supervised by a non-librarian manager. They conducted an extensive multi-modal research project on embedded librarianship with the primary research goal of identifying factors that contribute to the success of embedded library services. Their findings show that embedded librarianship differs in higher education than other sectors because academic library staff rely heavily on instruction and have a narrower scope for collaborative relationships because they do not, for the most part, participate in activities that strengthen relationships with non-librarian colleagues (Shumaker and Talley 2009). More recent anecdotal evidence would suggest that such collaborative practices are occurring and can be built upon (Creaser and Spezi 2012).

The introduction of evidence-based medicine, for example, has seen much collaboration between medical educators and librarians. There is a growing awareness of the importance of using expert searchers to conduct systematic searches of literature in the health sciences especially for systematic reviews, as errors in search string and processes could potentially result in bias from an incomplete base of evidence (McGowan and Sampson 2005). Acknowledged as co-authors of these systematic reviews, librarians are contributing actively to research output and increasing the visibility of the professional librarian (Myers and Warner 2013). It is also important to

acknowledge and learn from the 'Clinical Informationist' model or role in this context (see, for example, Davidoff and Florance 2000; Banks et al. 2007; Flynn and McGuinness 2011; Cooper and Crum 2013) such 'informationists' have dual expertise in science/medicine and library/information science. A further conceptualisation that is relevant here is the 'blended professional' or 'blended librarian', where librarians mesh their skill sets (Bell and Shank 2007) and may have multiple roles (teacher, researcher, librarian, IT specialist) (Corrall 2010).

The challenge of maintaining relevancy and embedded librarianship, involves two specific threads:

- The need to engage with users by being in their space; and

- The need for collaboration and outreach to non-users.

Both of these are expanded on below in this paper.

Better advocacy is required for both librarians and the library's role within the higher education environment, as the lack of understanding of the value and worth of libraries is an on-going challenge (Research Libraries UK /The Research Libraries Network 2011). Advocacy should not be viewed as a 'quick fix' as it is a longer term process that involves commitment, building trust and presenting explicit evidence of the value of the library (Phelps and Campbell 2012).

THE NEED TO ENGAGE

Libraries are still gateways to information but the relationship between them and information has changed. Librarians are no longer merely curators but navigators and facilitators; yet the perceptions of academic librarians have not changed with the considerable change in resources (Choy 2011).

The intrinsic nature of the library is becoming less visible with increasing engagement online (Research Libraries UK / Research Information Network 2011), and users do not always make the distinction that libraries provide their online services and are a crucial information provider. The OCLC report clearly states that the challenge is to define and clearly publicise the paramount role of library in the infosphere (OCLC 2005; Alvite and Barrionuevo 2011). The perception that all library-acquired and owned resources within the academic library are 'free' does not help perceived roles of librarians. The academic library should perhaps engage in a more vocal exposure of 'Brought to you free of charge from the Library' (Potter 2012). The advocacy and branding of the library is essential in this regard.

Many studies suggest that student perceptions of academic library staff have not changed with the transformation of the library space and resources (Godwin and Parker 2012). Bickley and Corrall (2011) found that at Sheffield University the continuing failure of students to grasp the academic function of librarians was alarming. The study revealed a continuing failure by students to recognise different staff functions and expertise, resulting in poor usage of the

support offered. The issue of academic staff engagement is also a concern here – how can we expect student engagement if academic staff are not communicating the value of the library to students? This matter of faculty perceptions is addressed below.

Student retention is vital and lack of skills is often cited as a reason for dropout (HERE Project 2011; Emmons and Wilkinson 2011; Weaver 2013). As the library needs to justify its role in regards to user satisfaction surveys and students receiving value for money, this trend needs addressing.

At Yale Sterling Memorial Library each freshman has been assigned their own personal librarian, which includes all members of the library staff. The evidence suggests that the library is seeing a higher percentage of students and they are experiencing richer contact and this is in keeping with the expectations of users for a more personalised service (McKnight 2010). While this approach might seem initially labour and time-intensive, the student/librarian relationship is fortified for the duration of the students' academic career, and the commitment shown by the library is rewarded in terms of user satisfaction and, potentially, use.

Of course academic staff are the key to influencing students as to the value of librarians, yet entrenched, ill-informed beliefs and perceptions as to librarians' skills may adversely affect acceptance of collaborative partnerships (Christiansen et al. 2004; Godwin 2005; McGuinness 2006; Hrycaj and Russo 2007).

BEING IN THEIR SPACE

Marketing and Outreach

"Librarianship today demands much more thought and effort on connecting with users and maintaining their engagement" (Choy 2011, 62)

Librarians should be engaging users in their own environment (Choy 2011). Users today want convenience and this is linked directly to the emergence of the smart phone and use of tablets (Connaway et al. 2011; Bomhold 2013). If they cannot drive users to their resources through active promotion, then they need to embed the library's presence in their domain.

It is at the student induction where marketing and outreach should be initially focused to the needs of the students, to provide students with relevant, familiar tools at their first encounter with the library, in the hope to capture their attention and trust, and build fluency in the resources that they continue to use.

When marketing, the library should focus on what people aspire to not the tools. Instead of saying 'the library has 40 databases which you can access via the catalogue', they could be saying, 'we provide you with information Google cannot find', because this is where the value lies. The first title is the feature, the second the benefit (Potter 2012).

There is a perceived notion of what librarians think students want and what they really want to learn and how they want to learn it, which needs much deeper consideration. For example: there is often a disconnection between what librarians think it is important to teach and what academics think, hence why librarian-faculty collaboration is vitally important.

In a representative survey in California State University the librarians' priority was to teach skills to distinguish between scholarly and non-scholarly content, while the academics' priority was how to quote and paraphrase information in assignments. There was also differing perceptions between skills students found most difficult – librarians thought search strategy and the right tool and students thought choosing/narrowing down a topic (Cunningham et al. 2011). While this is only one study, it is an issue that academic library staff need to be mindful of.

Social Media

There is evidence to suggest the relevancy of librarians' roles in academic work is not being understood (Given and Julien 2005; Cunningham et al. 2011; Saunders 2013), and an important means to overcoming this barrier are increased inter-personal communication (both online and face-to-face) and the integration of social media and web 2.0 tools.

Modes of learning are becoming more participatory and collaborative (Godwin and Parker 2012). Web 2.0 tools can contribute to the continued relevance and visibility of librarians, and

can be used as a continuing professional development tool to keep librarians professionally engaged and relevant, and can be used for outreach.

In 2010 in her keynote at Internet Librarian International, Hazel Hall called on librarians to get real about social media (Hall 2010) by using such tools to amplify traditional service delivery, for marketing and raising profile, virtual reference and teaching. Twitter, for example is a prominent method of information gathering and dissemination and we have a professional responsibility to help critical evaluation and cultivate best practices. Greenhow and Gleason (2012) illustrate how Twitter awareness is increasingly becoming a digital competence sought by employers, and that these new digital literacies are within our remit. Students' diverse use of Twitter in learning was found to support a number of positive educational outcomes (Junco et al. 2011), and by following and searching Twitter feeds, students acquired concepts of the associated networks surrounding events or topics (Zappavigna 2011).

Continued Professional Development

Focus groups with librarians in Australia in 2011 revealed that they thought their profession was getting more complex and that they should be responsible for their own continuing professional development[1] – and that library 2.0 represented a watershed, leading to a change in attitudes and

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[1] The new Professional Skills and Knowledge Base model from the Chartered Institute for Library and Information Professionals can provide library staff with a method of benchmarking and assessing their personal development at an individual level. See: http://www.cilip.org.uk/cilip/jobs-and-careers/professional-knowledge-and-skills-base

a way of thinking (Partridge 2011).   By embracing social media staff can disseminate information, resources and make services more relevant.

The expansion of teaching of management skills is now reflected as a core of librarianship with new professionals needing to understand strategic planning, marketing, project working and partnerships (Chowdhury et al. 2008). Librarians will have to articulate learning outcomes and have an understanding of how to design curricula to deliver the outcomes. At Nottingham Trent University, as at other UK higher education institutions, all librarians are encouraged to get a Postgraduate Certificate in Higher Education to build up skills and confidence in teaching (McKnight 2010).

Transliteracy

So how do academic libraries remain relevant and how do they best support students who are universally mobile and Wikipedia focused?

It is not enough to disengage completely with Wikipedia. While not promoting its scholarly value, reliability or intellectual rigor, it is still a potential platform for information literacy instruction. Despite advice against, students continue to use it (Head and Eisenberg 2010a), and so it should be harnessed for topic development, identification of key words and bibliography mining within information literacy (IL) instruction (Calhoun 2014). It is where the students are and so where the library should also consider being – it is possible now to embed library

preferred links into Wikipedia, just as it is with Google Scholar: Wikipedia is slowly entering the mainstream (although for some, particularly in an academic setting, this is contentious and there is certainly no consensus in relation to whether the library should be seen to be 'endorsing' Wikipedia in any way, nonetheless it is a development that needs to be acknowledged and given consideration). The National Library of Scotland is recruiting its first Wikipedian-in-residence to educate library staff in the workings of Wikipedia, update and add the library's collections to the site, and is embracing it as a means of disseminating its information to the widest audience available (BBC 2013), and the Bodleian regularly host Wikipedia-thons to edit and improve content (Poulter 2013).

According to Sweeney (2005, 165) the millennial generation will "*make up the demographic tsunami that will permanently and irreversibly change the library and information landscape*" in terms of information literacy, instant gratification (their searching habits), need to create and manage information not just store it, and the need for new partnerships in teaching and learning.

These digital natives want instant results, while working on the assumption that convenience surpasses quality. The CIBER (2008) study into information behaviours of the researcher of the future stresses the urgent importance that libraries understand their users' behaviours, particularly as they, the users, overestimate their ability to manage information (Law 2010), and

that they are unlikely to ask for help as it requires effort and time. Academic library staff need to continually challenge and where possible actively pre-empt these user attitudes.

The satisfaction for information needs may now come from web pages; blog feeds etc. because students react differently with their online material (CIBER 2008). Web 2.0 sources are likely to engage with a more chaotic way of information gathering and the mobile element will reinforce the trend toward information searching that is uncontrolled (Markless and Streatfield 2012).

Academic literary skills and information literacy skills will increasingly be seen by employers as a key graduate competences, and will be even more important due to the increasing complexity of the information landscape (New Media Consortium 2013). A Project Information Literacy study into graduate competencies and employers' expectations realised that employers are requiring more comprehensive and varied research methods and graduates do not possess the broader skill sets needed (Head 2012).

Libraries must continue to explore how to effectively harness people's dependence on social media, while minimising their information overload and re-establishing the notion of scholarship (Hines 2013).

Project Information Literacy (Head and Eisenberg 2010b), on how undergraduates use information sources in their research, indicates that students do not know how to go about starting their research and that asking a librarian for help is not the first port of call.

Librarians should be concentrating on developing students' evaluation and critical thinking skills rather than making them into expert searchers (Godwin and Parker 2012). This is an important component of information literacy instruction in its broader conceptualisation, and also supports the role of academic staff in enabling students to develop critical thinking skills. First year library sessions should be amalgamating database demonstrations and addressing more popular resources in order to engage the Millennial user (Godwin and Parker 2012). The evidence suggests a correlation between library use and persistence: almost 75% of first year students in a PRG survey that used the library, returned for their second year (Goodall and Pattern 2011) and this should be used in marketing as a value indicator.

Information skills should be embedded in the curriculum; mandatory rather than optional; should be formally assessed for credit; and academic staff and the library should work in unison to provide a productive learning experience (Chen and Lin 2011; McGuinness 2011).

'Creation Literacy' for academic staff and researchers should also be supported: going beyond IL and focusing on research outputs and its impact beyond the process of finding appropriate resources and solving problems on a given task/project (Dewey 2010).

The potential for use of web 2.0 in instruction is still great. Poll Everywhere is a good example of using social media as an information literacy intervention as it employs immediate and reactive feedback, for example see Gewirtz (2012).

The development of mobile apps for the library is another innovative approach. Seeholzer and Salem (2011) held focus groups at Kent State University about interest in use of facilities on the mobile web and found students ranked researching possibilities higher than information about the library's own services: they would search and then save citations via Pocket or read later app.

So does users' engagement with social media require a new conceptualisation of information literacy?

Spiranec and Zorica (2010) see a connection between IL and Web 2.0 in education as a process that involves creation, reflection and critical awareness and the increasing importance of IL. They embrace the notion that information is socially produced in a group via social relationships and that all literacies should be seen in this context.

New perceptions of IL have encountered the idea that knowledge is constructed socially and individually, and the notion of IL as a social practice. Lloyd has suggested that – "*IL is a social practice that facilitates knowing about the information landscapes within which a person is situated*". IL will alter according to the context (2010, 22). Literacy is socially mediated (Black 2008) and technological tools shape relationships and practices. Social media presents literacy activities embedded in everyday actions and users are seen as sophisticated manipulators (Davies 2012).

Transliteracy is a concept that articulates the nature of the contribution academic library staff can make to the learning environment and the most helpful way of looking at the future of information environment. Transliteracy is "*ability to read, write and interact across a range of platforms, tools and media"* (Thomas et al. 2007).

The transliterate aspect of this approach manifests itself in two ways – it sharpens students' research skills in something more familiar to them and the librarians are promoting transferable skills by encouraging students to explore how other resources can sit alongside library tools (Godwin and Parker 2012).

While transliteracy encourages cross-platforms skills and resource interactions, information literacy is still the focal point of the library instruction but transliteracy is a re-visioning of how and where information literacy concepts can be applied (Godwin and Parker 2012). The point is less about what the new technologies enable us to do and more about the kind of behaviour that they foster: participatory, collaborative, distributed and less dominated by experts (Godwin and Parker 2012).

IL programmes will have to adapt and respond to the needs of users over the coming years (Secker and Coonan 2012). The Arcadia Project (cited in Godwin and Parker 2012) sought to develop a practical curriculum for IL that meets the needs of students entering higher education. The transformation of social media and the emergence of mobile devices require librarians to

look right across the landscape for the literacies that are required in the future (Godwin and Parker 2012).

THE NEED FOR COLLABORATION

The librarian brand is its real strength (Storey 2007), but librarians need to understand both the uniqueness and the complementary nature of all their roles by becoming more immersed in the curricula of their institutions and having a clear understanding of the education market and be active in researching outcomes and assessing the impact of the library and its services (Markless and Streatfield 2012). While librarians are good at evidence-based performance indicators and evaluating services, the issues of equating value or defining impact are more difficult. Yet by showing value and impact the future for libraries would be more secure.

Faculty

Many academic libraries could promote the perceived outcomes of learning literacy skills better. At undergraduate level, promoting the correlation between good IL skills – better assignments - better grades - better job, the library would actively encourage participation in training classes

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and the library resources (Potter 2012). Learning is better absorbed when students can see the relevancy to their needs, i.e. when a paper is due, rather than giving instruction in a vacuum. By highlighting benefits of skills classes or personalising classes to suit a particular subject or skill users might be more active in attending.

Passive approaches to learning are out-dated, so the library requires new incentives that will reflect and help new teaching methods. Stand-alone provisions like inductions need to be paired with curriculum-integrated modules. There should be further promotion of outreach initiatives to academics, to initiate collaboration of IL programmes. This pro-active, relational approach should be embraced, so that IL instruction does not fall to delivery on demand scenarios (McGuinness (2011).

The Researcher as a Non-User

Academic libraries need to assume a greater role in research by assuming the roles of the practice-led researcher, and the librarian/researcher adding value as a digital/subject/search expert. As well as repurposing their heritage collections by digitisation, they will need to expand their role within humanities digitisation projects. These partnerships would give value to the research output and increase the librarians' visibility and unique skills (Monroe-Gulick et al.

2013). The University of Leicester have hired a digital humanities and special collections manager specifically to reach out to faculty and support their digitisation projects (Maron et al. 2013).

Researchers have been somewhat side-lined and they are not using library resources to the full and need support (Godwin and Parker 2012). The university library has been successful in engaging with new learning and teaching agendas including IL to the development of new technology-enabled learning spaces; they have re-engineered their relationship with teaching colleagues, improved student learning experience and raised expectations but this realignment with researchers has been notably absent (Lewis 2010).

In Generation Y (British Library and JISC 2012) researchers of tomorrow the findings are alarming. Most researchers are unaware of the resources and facilities available to them, there were broad misconceptions about open access issues, copyright and they were unwilling to approach library staff for advice.

The Research Libraries' Network (RIN) and Research Libraries UK report (2011) into the value of the library to researchers represents a valuable snapshot of the nature of the relationship and the definite challenge to re-engage with researchers. It saw a decline in visits to the library by

researchers and a weak link between associating the digital content used for their work and the library's role in providing it. Their active participation in the library has been in decline.

In order to get the researchers utilising the libraries, academic libraries need to:

- Develop library workforce confidence and knowledge – library staff have a professional responsibility to update their own knowledge about data management and other issues concerning research (Allen 2010)

- Provide data researcher advice – by giving advice on open access and other scholarly communication – perhaps academic library staff will be involved before the research projects start, at the proposal stage (Schumaker 2012)

- Develop researcher data awareness (Pryor 2012)

- Teach data literacy to postgraduate research students – should be a natural development of library's remit – developing an understanding of how as future researchers they will generate and use data (Crawford 2012)

- Bring data into undergraduate research-based learning – opportunity to develop good practice (Lewis 2010)

- Help build a virtual community of scholars (Corwin et al. 2009).

Libraries are not just about support: they are also about collaboration in research and this is where there is a need to change perceptions. The library should be developed as a hub of information and the new librarian should encompass subject knowledge and research knowledge (British Library/JISC 2012).

Librarians are at their best when they collaborate and aggregate. Librarianship has a proud record of international standards setting, from Dewey to Dublin Core, of co-operation through such groups as OCLC and international services such as inter-lending, and this collaboration and activity is what will be need in the future (Law 2010).

There is a professional responsibility for librarians to publish practice-led research in order to contribute to the field and to develop an ethos of academic writing alongside their other faculty colleagues. Calls have also been made for LIS students to publish Masters dissertations in open access forums in order to disseminate original research that might otherwise just sit on an office shelf (Tennant 2013). The impact of a librarian should be acknowledged as well as that of the library in order to advocate the role of the professional librarian. To provide value and demonstrate their worth to their institution, librarians should be building relationships across campus to integrate their services deeply within the educational mission of their home institution. They should expand the concept of embedded librarianship to create research partners where there is an innovative role for librarians.

In the 2011 report *Redefining the Academic Library* (cited in Monroe-Gulick et al. 2013), the Educational Advisory Board (EAB) in the US addressed the future of libraries and defined changes needed to survive in the evolving HE landscape. They recommended new roles for librarians including embedded into courses, academic departments and research teams for example embedding a subject specialist into a research team (Monroe-Gulick et al. 2013).

The role of a clinical librarian conforms to Shumaker's model of embedded librarianship and can be seen as an important instance of a possible trend within academia (Cox and Corrall 2013).

With far-reaching implications of the Research Excellence Framework (UK) on research activities, a librarian's expert skills would be invaluable. On a research team a librarian could do tasks that involve: active mediation; dissemination; organisation and preservation; expertise and management and visibility and management. By being a partner, an academic librarian could contribute to the knowledge creation using their specialist skills.

Increasingly research in the sciences and social sciences is collaborative and multi-disciplinary, and librarians can play a unique role here by creating a common ground and bridging collaborative groups. According to Kesselman and Watstein (2009), academic librarians have a professional understanding and ability to work with diverse populations.

In 2012, Kansas University library developed a strategic plan that was intentionally aligned to its institutions strategic plan. The library's intention was to show its commitment to, and vital role in, the educational and research mission by (1) fulfilling educational undergraduate initiatives in IL and subject librarian outreach, and (2) by establishing the library further into the University's strategic actions by embedding positions of course-based participation, digitization consulting and external appointments in order to confirm and expand its role (Monroe-Gulick et al. 2013).

A librarian was placed within a research project and their skills were used to replicate search strategies; translate operational definitions of the concepts into search strategies; documentation of the search process; identification of the most appropriate database combinations to search, illustrating the unique expertise of the academic librarians is unparalleled for negotiating the complexities of search strategies (Monroe-Gulick et al. 2013). This case study shows evidence that the librarian's contributions improved quality of search results and this is evidence of impact and the contributions libraries make to knowledge creation and dissemination. The librarian's involvement also helped the library – the library can now begin to tailor outreach activities to potential research partners; they can understand evolving research trends and the work gives opportunities to improve research methodologies for library related research (Monroe-Gulick et al. 2013). This study illustrates how libraries can become visible and integrated into their institutions and the broader value that librarians can give to the academic missions of their institutions (Monroe-Gulick et al. 2013).

The inception of the social web and open access facilities, have resulted in numerous opportunities for sharing and communicating research output, changing the ways researchers disseminate their work. Altmetrics are insisting on a new perspective on impact measurement for research. They both measure how the research ideas are disseminated into the wider world and they allow for much quicker feedback to the researcher.

The management of research data from academic research projects are an integral part of the global research knowledge base and so should be a natural extension of the library's remit. This is an emergent area and is still evolving – as it includes all aspects of research data management i.e. storage, curation and preservation of and provision for the continued access (Lewis 2010).

CONCLUSION

These issues should provide a reflection on what is possible so that academic libraries can plan a transformative agenda and manage change effectively. Ideally they will need to create a future that builds on traditional values, services and skills of academic librarianship while increasing the 'added value' they make to universities, staff and students.

As a profession, academic library staff are best placed to adapt and grow within the shifting domain of higher education, and in doing so they must communicate their skills and values to as wide an audience as possible and challenge preconceptions and prejudices about their role and relevance from both within and out-with the profession (Chowdhury et al. 2008).

Google is a worthy embodiment of the challenge facing libraries today (Chowdhury et al. 2008). Google does not create content, nor give personal expertise, and the niche for libraries to inhabit in the future will be to harness and promote information finding skills. The strength of academic libraries lies in their human element so they must provide places and ways for people to interact with information mindfully as they cannot hope to compete with the technology (Hines 2013).

At the moment embedded services rest too easily on the excellence of individuals. These new roles will be demanding in terms of maintaining an up-to-date knowledge base and it has been suggested that a set of skills, competencies and attributes that lead to the embedding of services should be encouraged by library directors who should ensure that the academic library is strategically anticipating and implementing change (Myers and Warner 2013).

Academic librarians need to find a shared language that comes from a pedagogic base so they need to start considering qualifications in teaching etc. (Myers and Warner 2013), for example by undertaking courses such as the Postgraduate Certificate in Higher Education or Postgraduate Certificate in Higher Education Practice.

Libraries will still harness learning and knowledge but librarians will loosen their attachment to buildings and collections and develop themselves as collaborators in ways external to the physical space (Hines 2013).

The Academic Libraries of the Future Project (Curtis et al. 2011) foresaw differing scenarios for the future of the library: where the library could become a hub of information and collaboration, and called for libraries to plan strategically for their future.

Embeddedness, by widening the library's jurisdiction, will help to achieve a more specific vision of the university library's core concern as opposed to the university's more generalised vision of teaching and learning (Myers and Warner 2013).

Libraries are in an ongoing state of proving their worth and contributions to the academic missions of universities, who do not necessarily recognise the broader value of librarians. Embedded librarianship is a recommended approach to showcasing the value of academic librarians outside the library walls.

Ultimately however, a holistic approach to academic library development is required - it is not only academic library staff that need to embrace change, but also those in all areas of the university: "*Persuading not just librarians but institutions that this is an agenda to be tackled and resolved will indeed ensure a bright dawning for the libraries of the future*" (Law 2009, 66). In many cases academic library staff are now on this road and now need to be supported and encouraged in this process.

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