

Supporting The Health Researcher Of The Future

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Introduction

We are very pleased to be invited to present our perspective on current developments to support the needs of the health researcher of the future and to outline our vision about how these might evolve further. Our presentation will follow a five part outline: First we will provide evidence from recent literature on the Context of Research Support. We will then consider the Potential of Web 2.0 to meet the needs of the health researcher. After briefly reviewing some judiciously chosen examples of good practice we will outline some of the technological developments that we are pursuing for the School of Health and Related Research (ScHARR) at the University of Sheffield and for the Yorkshire and Humber Research Design Service. We will conclude by outlining the possible way forward given the extent of both technical and environmental changes.

The Context of Research Support

Perhaps we should start by coming clean – although we are both enthusiastic champions of the impact that library services can make within a health research environment this does not necessarily make us worthy guardians of the academic library tradition. Indeed one of us is perhaps best characterised with the phrase “gamekeeper turned poacher” having started as an information resource manager and now having gone over to the dark side of full-time academic research. Surely with such an information pedigree one would expect an almost model pattern of use of library research support services. Far from it! The first message that we want you to take away is that, thanks in no small measure to the combined efforts of local and national health information professionals, it is now possible to pursue an academic research career when only rarely, if ever, setting foot in the University Library, when buying books from Amazon rather than requesting or borrowing them and when conducting research from a bedroom office by accessing myriads of e-journals rather than coming into contact with their paper-based counterparts.

That the behaviour of the “typical” health researcher falls way short of the aspirations and expectations of the academic librarian is attested to by the report commissioned by the Research Information Network and the Consortium of Research Libraries entitled: *Researchers’ Use of Academic Libraries and their Services* (1). Not only did this reveal significant differences of perceptions and views between researchers and librarians but it also identified a need for communication channels between them to be improved. Indeed much communication within the research community relies on

social networking, in both the literal and technical senses of the phrase, in order to exchange and share research-based information. As a consequence the role, and one might say the unique selling point, of academic libraries is presently ill-defined. Contributing to this situation is what Peter Brophy has described as the “Invisible Academic Library” in that most researchers fail to readily recognize that the most significant proportion of the content on their desktop is provided through their library.

Furthermore, when we consider the research habits of researchers as chronicled in the CIBER report, *Information Behaviour of The Researcher of The Future*, we discover that most users of electronic information services “power-browse” or skim material, using “horizontal” (shallow) research (2). Indeed most will spend only a few minutes looking at academic journal articles and few will subsequently return to them. As the report affirms: “It almost seems that they go online to avoid reading in the traditional sense”. While academic librarians may suspect that such reported behaviour is symptomatic of so-called “screenagers”, the report actually found that a wide range of users from “Undergraduates to professors...exhibit a strong tendency towards shallow, horizontal, flicking behaviour in digital libraries” (2). It finds that “Factors specific to the individual, personality and background are much more significant than generation.” (2)

Against such a backdrop there is the very real danger that the health librarian might persist in delivering services within an exclusively “traditional” library paradigm. This is particularly the case when such librarians operate in a context divorced from the day-to-day needs and activities of the researchers themselves. In the words of the proverb – “to the person with a hammer everything is a nail!”. A warning that a one size fits all approach will inevitably prove inadequate is found in a brief report that one of the presenters produced for the Research Information Network, *Researchers information literacy training should focus on information management, not information retrieval* (3). This brief literature review found that it is inappropriate for academic librarians to attempt to meet the information literacy needs of researchers using instruction methods that are almost completely based on their experiences in instructing undergraduates. We should instead acknowledge that researchers do not follow the neat stepwise progression from a state of unknowing (“information need”) to knowing that underpins most information literacy instruction. This, coupled with the demands of an ever more competitive research environment requires that it is information management (i.e. the ability to use a wide variety of tools to support the business of research), rather than information retrieval, that should now emerge as the focus of information literacy instruction for researchers.

Furthermore, where information retrieval training is actually required it should focus on broader information seeking strategies such as “area scanning”, footnote chasing and known author searching rather than keyword searching. These broader strategies are much more appropriate to the way in which researchers work and are likely to be much more productive given the way that a researcher typically has a focus on a fairly well defined domain of research. We can also learn from how researchers communicate and interact with each other with a need for information literacy to be “socialised” through formal collaboration and integration with existing research programmes or research groups (3). The importance of work-based context is further seen in a need to focus training on practically based outcomes (e.g. production of log book or portfolio) that equate well with the actual deliverables required from a

researcher during their career trajectory. To achieve this training for researchers should optimally be tailored to the needs of the individual and delivered at the time of that need.

Further confirmation of the challenges facing the academic librarian in meeting the needs of the “absentee” health researcher is offered by a key article by Haglund and Olsson (2008). Having observed the behaviour of junior researchers across a variety of Swedish research institutions they find that:

“the library has changed from being the place for researchers to visit for help with information searching and for picking up the actual information, to being the “living room” for undergraduate students, making the researchers who visit the library feel outnumbered, and sometimes unwelcome.” (4)

Perceptively the same authors offer a useful insight into the alternatives to the conventional library website, founded on the preconceptions academic librarians may have of their users’ behaviour:

“Libraries spend huge amounts of time and money to work on the structure and content of the library Web page, while few researchers use it as a starting point for information searching. Many researchers....used the Web of their own department as a starting point, and this is where the library should establish a presence with direct links targeted to that particular group” (4).

To a large extent Haglund and Olsson anticipate the clarion call presented by our own paper which, indeed, goes further in illustrating some possible mechanisms by way of an appropriate response.

The Potential of Web 2.0

Information professionals not only face an increasing problem of information overload but also a demand by clients to tailor services and products to their exact needs. Indeed the technical knowledge that the Health Researcher of today does actually possess is such that s/he has come to expect a service that will optimize the benefits of technology. To the “Martini” principle, named after the advertising slogan for this particular beverage; “anytime, any place, anywhere” can be added the particular demands of the so-called “Amazoogle generation” with their need for personalized information, accessible at the point of need and available instantly. If this is not in itself enough of a tall order we can add the emerging requirement, ever more frequently expressed for services that are seamless, integrated and open access.

Does Web 2.0 provide a possible solution for this demanding clientele? To a certain extent it should do as it specifically includes applications that actively engage users (for example, in advanced searches for information and in the production of information). It is also promising that it is the young who have emerged as the predominant early users of social networking and user-generated content. Again the CIBER report (2) observes that researchers mainly use social networking sites for simple social interactions but, nevertheless, they are sometimes linked to information searches. Librarians should also be aware that it is not only the so-called Google Generation that displays advanced online behaviour. Other “generations”, such as

those currently under 30, also demonstrate that they are able and willing to engage in complex online activities.

Turning our attention to the technologies - blogs, wikis, podcasts, social networks and other online features do seem to offer new educational opportunities, particularly as the application of e-learning technologies is evolving. These involve so much more than simply publishing content online – they provide a “dynamic learning environment in which to actively share knowledge and...experiences”. The CIBER report finds that:

“Blogs, wikis and social networking stimulate dynamic and proactive engagement in learning (*to which we might add “investigation”*) process” (2)

What then are some of the foremost applications with likely potential to impact upon the information behaviour of future researchers, particularly within health? From our own research institution’s perspective these would include such “one stop shops” as wikis & portals. At a project-level Blogs, Wikis and Discussion fora offer the potential to sustain communication among the project team and wider steering groups or stakeholders. The facility to collaborate and share slides or documents and to work on a common version of the same written work is particularly attractive. To these can be added the ease of achieving communal bookmarking as well as tagging to produce the quaintly named “folksonomies”. Within our institution we have started to experiment with “How To”’s using Wikis as Instructional Resources while we are, ourselves, beneficiaries of the prevalence of instructional videos and podcasts (via such resources as YouTube) on the use of Web 2.0 tools. Finally we can turn our attention to some of the more mission-critical aspects of the business of Research such as tools to facilitate publication, individual or peer assessment of research quality and impact and funding opportunity alerts through RSS feeds).

Some Examples of Good Practice

While it is always subjective to try to identify examples of good practice, and indeed technology is moving at such a pace that such a cross-sectional approach might seem doomed to failure, we have found it useful to at least benchmark some different sites. Sites that have informed our own developments are not restricted to only those in the health research field. For example the Dublin Public Library Portal provides an informative perspective on what might be achieved. Nevertheless many innovative health research sites exist such as the Tropika.Net portal within the field of tropical medicine and the grey literature wiki at <http://greylit.pbworks.com/>. Another impressive offering comes from the Central Medical Library, University Medical Center Groningen (UMCG).

What we are doing at SchARR/Yorkshire and Humber RDS

The SchARR Library is an independent library based within the University of Sheffield serving health services researchers and students and providing tertiary information services for NHS researchers. It currently also houses the South Yorkshire Research Design Service up to March 2010. Recent years have seen an increasing move away from physical use of the Library to use of its virtual services (5, 6). With the advent of a new Yorkshire & Humber Research Design Support Service (from October 2008) there was a pressing need to demonstrate value-added services in support of health researchers. Two members of the Information Resources

team are part-funded by the National Institute for Health Research (NIHR), working for their regional Research Design Service in the Yorkshire and The Humber region.

The Information Resources team based at the School of Health and Related Research (ScHARR) at The University of Sheffield have witnessed first hand changing demand for information and library service provision. ScHARR has an extensive research portfolio in addition to over one hundred post-graduate and over thirty PhD students, all of whom have different needs in terms of support and resources. The need to tailor so many resources to such a disparate group of clients have led the team to reassess how best to offer additional research support services without adding too much to the core workload of traditional information services such as the physical library, literature searching and reference management.

One innovation has been the Web Portal as a means to provide additional information to existing similar services such as in-house current-awareness news email and the research funding bulletins. The need for such a tailored service was similarly shared by NHS health professionals in The Yorkshire and The Humber region. At present there is a strong focus in the NHS through the National Institute for Health Research to promote research by clinicians, especially such research that supports patient and public involvement. As a result it was decided that several specialist health topic portals would be set up to support neurologists, nephrologists and dentists with other portals to follow.

One main reason for creating such portals was to deliver two features not offered by many official websites:

1. Informal content, such as YouTube videos, podcasts and blogs which are often over-looked and under-valued. Many official websites have strict guidelines as to what content they can use and what will contravene or contradict their official stance. One health topic can have several official websites and organisations with much of the content limited to a singular site. The problem for the modern information professional or clinician is accessing multiple sources of information from multiple websites, or even knowing which websites cover what. By implementing a web portal, the information professional is able to pull in several strands of information from several places and cement it in one place to update automatically.
2. Diverse but salient content in different electronic forms can be pulled together in one place. Most established health information websites work on one platform, that being a textual only level. By using a Web portal, information professionals are able to pool video, audio, pictorial and textual content in one place without the need for specialist web design skills.

In creating a “balance sheet” for our Web portal initiative we found the important factors identified in Table 1.

Table 1 Factors Helping or Hindering the development of Web portals

How could it help us?	How could it hinder us?
Keep you up to date with what interests you	Not as automated as we would like
Entertain you	RSS feeds can break

Be a point of reference	Web pages go out of date or just disappear
Be formal and informal	Always new information, links and people to add
Be automated (for the most part)	Multiple moderation needed for specialist topics
Help you find/share/collate information	Not all content is applicable to everyone – UK/US angles
Help you interact	Information overload
Be accessible anywhere	Pages can be slow loading
Combine text, links, images audio and video	Need for decent Internet connection
Give you snapshot on topic, organisation, country, the world	Sponsored links
Adaptable and moderately easy to master	
Make your life simpler?	Could make your working life more complicated

Web Portals

Web portals allow the collation of several forms of information through the form of widgets into one functional Web space. The use of widgets make building portals a much easier task than that of traditional websites such as those that employ HTML or specialist software such as Dreamweaver. Wikipedia (2009) refer to a widget as;

“A portable chunk of code that can be installed and executed within any separate HTML-based web page by an end user without requiring additional compilation.” (7)

Web portals, as with most new technologies that fall under the Web2.0 banner, are invariably free to use. In addition, they are quite often intuitive to learn and allow flexibility for users to create their own mash-ups and add-ons which were never envisaged by the technology creators. The potential of such Web2.0 technologies is endless as users devise new ways and methods in using them.

Methods

After deciding that web portals offer a useful complement to the existing service portfolio; Information Resources carried out an extensive exploration of the leading portal providers. The initial evaluation included Pageflakes, Netvibes and iGoogle in addition to other websites such as Zimbio, MyYahoo and Microsoft Live which could be considered as personal homepages and portals.

Eventually it was decided that Pageflakes, an Ajax-based start page or personal web portal very much like Netvibes, would be best suited to SchARR’s needs. Pageflakes utilises widgets called ‘Flakes’ which can be slotted into anywhere on the portal web page (8). Additional content can be spread out over several tabs, which are in effect

like adding more web pages. Hundreds of pre-designed Flakes vary in content from rss/Atom feeds, calendars, search engine boxes, notes, bookmarks, Flickr photos, Facebook, YouTube, Twitter, email and user-created modules.

Three initial web portals were created, firstly a neurology portal for neurologists based at The Royal Hallamshire Hospital in Sheffield. The second portal to be created was the ScHARR portal, which served staff and students based at the School, now superseded by a Netvibes version of the portal. The third portal was designed for Dentists within the Yorkshire and The Humber region. As with the neurology portal, it was created to aid health professionals to undertake their own research through the NIHR RDS. Initial feedback for the two specialist health portals was slow in coming but has generally been very positive.

The decision to go with Pageflakes was influenced by the quality and diversity of the widgets available as well as the adaptability of the Flakes. At the time it appeared that Pageflakes was the leader in Web2.0 personal homepages with the likes of The Dublin Public Library and Phil Bradley as keen advocates of the software. Netvibes on the other hand appeared to only offer limited capabilities compared to Pageflakes. The decision to move to Netvibes as the primary source for these portals was prompted by three events by Pageflakes which in turn led to much criticism on their forums and in the general internet community. Firstly, without warning Pageflakes decided that, to raise some revenue, that it would embed sponsored adverts onto user's personal web spaces. For many users that would not have been a problem, but for us, and others such as The Dublin Public Library and independent information consultants such as Phil Bradley, it means potentially conflicting and embarrassing content hosted on their public pages.

Secondly, there was a distinct lack of information coming from Pageflakes shortly after the first event. This was highlighted by the posts to the Pageflakes forum by frustrated users who felt they should have been consulted first. A classic example of how the advertising had affected some users was highlighted by a member of the NHS who had used the portal as part of his training provision only to find that there was a BUPA advert on his homepage. The growing discontent, stemming from Pageflakes lack of communication was summed up by Phil Bradley posting the article 'Pageflakes: 10 fatal mistakes' on his influential blog.

The third and final event that ensured that we would concentrate our efforts onto Netvibes was the growing instability of our own Pageflakes. On several occasions our pages were not visible or our own rss feeds did not work. Further non-communication by Pageflakes again left users frustrated. The only information to seep out being that they were in the process of moving servers, hence the pages not working, this was rejected by many users believing the service was about to cease.

After these events it was agreed to use Netvibes to create any future portals in the hope that they would not fall short of the high standard of presentation initially set by the Pageflakes pilot. This initial concern did not come to fruition as Netvibes has developed into an adaptable and comprehensive tool. Since moving to Netvibes two more portals have been created, a new ScHARR Library Portal which caters for each separate section in the school and a Renal Portal for NHS Staff in The Yorkshire and The Humber Region of the RDS. There are plans to create a cardiology portal next. It

is worthy to note that the three existing portals created in Pageflakes are still currently working well as it appears the company have got over the problems they were experiencing.

Box 1 Current ScHARR Portals

The ScHARR Dental Portal (2009) [Online] (Last Accessed 27/4/2009)
<http://www.pageflakes.com/dentalportal>

The ScHARR Library Portal (2009) [Online] (Last Accessed 27/4/2009)
<http://www.netvibes.com/scharr>

The ScHARR Neurology Portal (2009) [Online] (Last Accessed 27/4/2009)

The ScHARR Renal Portal (2009) [Online] (Last Accessed 27/4/2009)
<http://www.netvibes.com/renalportal#Homepage>

Evaluation

The need to evaluate such new information sources is essential. Not only is there the issue of trying to get the right information on such platforms but the necessity to ensure it reaches its target audience in addition to the important issue that such systems are used. In effect, you can take the clinician to the pc, but you cannot make him type in the URL. The response to the specialist health portals have been good in particular that of the Renal Portal. After meeting with Renal specialists at the Northern General Hospital in Sheffield, it was agreed that there was scope for such tools to aid clinicians and further exploratory discussions are taking place.

An online survey was conducted with academics and support staff based at ScHARR asking for feedback relating to the ScHARR Portal. Again feedback has been positive despite the portal being fairly new and not as refined content wise as it could be.

Box 2 Comments made from Initial Evaluation

“Easy access to resources - saving time”

“Could give quick access to interesting info and share what's going on around ScHARR”

“I value the links to anything to do with my current project and report writing”

“Will be a handy one-stop place for lots of information”

“I can get the right feeds for me on there”

The big problem in launching such services is that it is easy to gain consensus from supporters of the library service and those who are “Web2.0 savvy”. The real battle is in convincing others that such tools can supplement existing practices and can further knowledge with minimal effort. In truth tailored specialist information portals will support some of the people some of the time but will not support all of the people all of the time.

The Way Forward

At the moment we find ourselves in an early stage of Web 2.0 development, particularly through our exploitation of the technical facilities of portals. By anticipating future needs and attempting to pre-empt them we are at the “If we Build them a Portal will they come?” phase of development. Notwithstanding this limitation evidence both locally and internationally suggests that health researchers are starting too cultivate an appetite, not for the technology itself, but for its functionality - the “What’s In It for Me” offered by the new technologies. If researchers are to pursue such an initial interest they will require both Guides and Architects! As Web 2.0 tools become more integrated into the research environment and landscape the “Where” of access will become less important than the “How” of access! Above All we have every reason to expect that health researchers will want us to open our toolbox of “make your job easier/more effective tools”. This toolbox is likely to include both free Web 2.0 tools and the more conventional products that already figure prominently in a research library repertoire (e.g. reference management; citation tools etc). So perhaps our most fitting salutation should be: “Welcome to the era of Web Tool Point Zero!”

References

1. Research Information Network (2008). Researchers’ Use of Academic Libraries and their Services A report commissioned by the Research Information Network and the Consortium of Research Libraries <http://www.rin.ac.uk/researchers-use-libraries>
2. CIBER. Information behaviour of the researcher of the future – (A British Library/JISC Study) <http://www.bl.uk/news/pdf/googlegen.pdf>
3. Booth A (2007) Researchers require tailored information literacy training focusing on information management, not simply information retrieval. Report for Research Information Network Consultative Group on Librarianship and Information Science. <http://www.rin.ac.uk/training-research-info-spec>
4. Haglund L and Olsson P (2008). The Impact on University Libraries of Changes in Information Behavior Among Academic Researchers: A Multiple Case Study. *Journal of Academic Librarianship* 34 (1), 52-59
5. Booth A (2008) Google: It's all at the Co-op now! *Health Info Internet*; 62: 3-4.
6. Tattersall A (2008) 'Blogging in an Academic Health Library Setting. *Libraries for Nursing Bulletin*; June 2008.
7. Wikipedia (2009) Web Widgets [Online] (Last Accessed 27/4/2009) http://en.wikipedia.org/wiki/Web_widget
8. Bradley, P. (2008) Pageflakes: 10 fatal mistakes [Online] (Last Accessed 27/04/2009) http://philbradley.typepad.com/phil_bradleys_weblog/2009/01/pageflakes-10-fatal-mistakes.html