INFORMATION LITERACY MEETS WEB 2.0: HOW THE NEW TOOLS AFFECT OUR OWN TRAINING AND OUR TEACHING

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Many students think they know how to use the Internet and the disconnection detected in the USA between libraries and students will be mirrored in the UK. The proliferation of material available makes our role to guide them towards the best information more relevant than ever. This can include a variety of approaches including sensible use of Google and Google Scholar alongside intute and our own subscription databases. Web 2.0 approaches have moved the agenda towards provision of more interactive solutions for engaging our students. Social networking sites, for example, Facebook, and social bookmarking sites like del.icio.us, give us new opportunities to promote ourselves and engage with our users. RSS feeds will be forming part of our teaching to researchers and provision of instant messaging information and advice may grow in the future. Podcasting, flickr and YouTube give us new formats for providing tours and enhancing our instructional material. Blogs can be used to discuss the use of resources, and wikis to build up resource lists. They can both be important sources for current information and students need to understand their strengths and weaknesses. Librarians have an important opportunity to use Web 2.0 tools to broaden and enhance their Information Literacy message.

Introduction

Librarians worry a lot about their teaching. Are they just trainers? How do they gain credibility from their academics? How can they possibly cover all there is to deliver in the hybrid library environment? The fear that they are being sidelined by Google looms in the background. The information world buzzes with speculation of how Web 2.0 may affect us. Is Web 2.0 more about Information Technology? Are our Information Literacy (IL) frameworks still valid? As we shall discover, this collision between IL and Web 2.0 is both exciting and challenging, giving us new content and novel ways to connect with our users. We shall begin by clarifying what we mean by IL and Web 2.0; outline the educational background and changing nature of our clientele; and then propose some ideas on how it affects the methods and content of our IL teaching.

Information Literacy (IL)

What does being ‘information literate’ mean in the 2.0 world? I do not intend to get hung up on definitions of whether the new developments are
primarily about IT or demand a new label. Joan Lippincott (2007) has recently written ‘it is difficult to separate out where media literacy ends and where technology literacy begins – or where information literacy begins and where technology literacy ends’. She advocates framing discussion around how students become effective content creators within their respective disciplines rather than around skills which emanate from our academic or departmental structures. This approach may be the way forward, and illustrates the continuing discussion around literacies. There are already a number of IL frameworks which are widely accepted which are broad enough to accommodate the new tools. For the sake of this discussion I am restricting us to the latest UK definition by CILIP, our Library Chartered Institute, and the more comprehensive SCONUL (Society of College, National and University Libraries) Seven Pillars model.

This is the CILIP (2007) definition: ‘Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner’.

The following prescription is based on the widely used SCONUL Seven Pillars model:

- Recognising the need for information
- Distinguishing sources and access
- Constructing search strategies
- Locating and accessing
- Comparing and evaluating
- Organising, applying and communicating
- Synthesising and adding new knowledge

**Web 2.0**

What is Web 2.0? Does it really exist. As the Web has developed a number of services and applications have been grouped together and their influence has been so marked that together they have been seen as a new wave: Web 2.0 (Alexander 2006). They use the Web as the platform and encourage community and participation. Information flows from many directions, and can be generated by users. Most important for librarians is that they can try out the tools themselves without extensive help from technical or systems colleagues. This has led to the modernisation of services often labelled as Library 2.0 (Lorenzo 2007). Essentially we need to be more user-centred, understanding what users say they require, and have a flexible approach to managing and evaluating our service. Although the effect may well stimulate multimedia approaches, it is not fundamentally about technology; it is more a state of mind. This new world is ‘fluid and constantly changing, not just in volume but in terms of formats, functions and norms’ (Lorenzo et al. 2007).
The Educational Background and Web Generation

Today, the major concerns in Higher Education, include technological development, demographic change, competition, branding, rising student expectations, funding challenges, lifelong learning, concerns over learning and teaching methods, and innovation. Finally, it is how to deal with what is becoming known as the Web generation which attracts the most attention among librarians (Oblinger and Oblinger 2005). Large research libraries with silent aisles of large polished desks are no longer what many students require for their learning. They need to be able to carve out their own information landscapes. This generation dates from 1981 and expects single search boxes like Google and Amazon which give instant satisfaction. A snapshot of this generation would include the following: it finds our databases are not where they want to work (i.e. in their VLE) and are too difficult. They are not interested in Boolean logic nor advice from librarians. They won’t use manuals or help sheets: they prefer collaboration, teamwork and social networking and will navigate the Web by trial and error. Research is regarded as a self-directed do-it-yourself process (Lorenzo et al., 2007), which is likely to be non-linear. As they have grown up with PCs and video games they are used to multitasking. They assume that what is written down must be correct so will cut and paste rather than read and digest. Perhaps most significantly their preferred style is likely to be more visual, and the term ‘screenager’, first coined by Douglas Rushkoff (1999) may be very appropriate. This will affect the way they perceive and use libraries. The reality is more complex and not every student fits this caricature. Not all have had the same opportunities to experience technology or acquire the ITC facility. Mature students may have quite different IL and ICT competences and expectations (Lorenzo et al. 2007).

The Librarians’ Response

Librarians have addressed the issue of search engine dependence in students by teaching them the efficient use of Google, Google Scholar and Google Book Search where appropriate (Regalado 2007). The use of metasearch facilities from the library system companies has been promoted as an answer to bundled provision of data from a number of databases, but these have not yet been met with universal approval by librarians or users. It is possible for librarians to present themselves as information gurus, recommending search engines like Exalead, and Quintura.

Now with the advent of Web 2.0 we have new ways of reaching our users. Blogs are expanding on the Web at a phenomenal rate. Individuals create these as a kind of online diary, as a leisure activity, to form an archive, converse with like-minded persons or share a democratic view (Kroski 2006). No one can deny the success of Wikipedia or the potential wikis have for internal information sharing. Social networking (e.g. MySpace, Facebook, and Ning) is becoming the
place where the internet generation spends time, communicating, creating their own environment. Social bookmarking (e.g. del.icio.us) enables easy collection and sharing of each other’s bookmarks. Photo sharing is enabled by sites like flickr. Podcasting is allowing individuals to record, publish, find, subscribe and listen to audio over the Internet on a portable player. Moving picture sites like YouTube are encouraging production, posting and sharing via the web. RSS feeds give us the ability to subscribe to services, and link to other users. Tagging allows us to give our own simple subject headings (tags) to blog posts, photos on flickr, books on LibraryThing, and these are shared and searchable by others. Mashups are websites or web applications which combine content from more than one source. As we have seen, Library 2.0 involves communication with our users, so if we are to use these tools in IL, we have to analyse the problem in hand, experiment, and evaluate results as we proceed. We should seek to persuade students to formulate their own questions (DiBianco 2004), tempering their over-confidence in the technology and recognising the exact nature of their information need.

We have an opportunity to engage the web generation where they are, so that we become relevant and part of the Web 2.0 experience. Web 2.0 can enhance our web sites and teaching resources, making them more visual and attractive. We can use them to promote deep and active learning methods and peer-based learning.

**What Web 2.0 Means for our Own Development?**

If we are to grasp this opportunity it means developing a deeper understanding of what the technology allows, enhancing our skills, and embracing new ways of working. We should become experts with the new tools (Regalado 2007) learning by experimentation, which can be rewarding and fun. Five Weeks to a Social Library, the programme developed by Meredith Farkas http://www.sociallibraries.com/course/ has been a great success in the USA and is now freely available on the web, under the Creative Commons licence. The Library 2.0 in 15 minutes a day on the Library Instruction wiki at http://instructionwiki.org/Library_2.0_in_15_minutes_a_day is also a very useful resource for those who want to manage their own learning. The great trend setting public library programme, Helene Blowers’ ‘Learning 2.0: 23 Things’, from Charlotte and Mecklenburg County http://plcmcl2-things.blogspot.com is now being widely copied throughout the world. For example, the state of Victoria in Australia began a Learning 2.0 programme for over 1,000 library workers in October 2007 based on the same programme. Library workers around the world are finding that it is useful to join a social network in order to share views, communicate with colleagues and develop professional contacts. While Facebook is presently the most popular site for librarian networking with many special groups in a variety of sectors, Ning is also an excellent starting point for
social networking, enabling the development of personal space, making ‘friends’ and participating in online discussions.

How do 2.0 tools affect the content and delivery of our Information Literacy (IL) teaching?

The Web 2.0 phenomenon is causing an explosion of content, as it has become so much easier for everyone to be an author on the web, in what is described so graphically in Andrew Keen’s book ‘The cult of the amateur’ (Keen 2007). How are IL librarians to tackle and categorise this in their teaching? How far are blogs and wikis valid sources of information? Should we encourage the use of podcasts, and films on YouTube? It is the use of the tools for teaching which are of greatest interest. We should not force them to visit our web sites or ring-fenced VLEs. However, we cannot expect all our users to respond in the same way to these Web 2.0 approaches. They are an additional weapon in our armoury, which may prove most effective in distance learning. It is a world of perpetual beta and experiment, and allows initiatives to be tried out before they are fully developed. Web 2.0 can be disruptive (Thompson 2007) in changing the way education is delivered. When there is evidence that an approach could fulfil a need librarians can respond with a variety of approaches, as we shall detail shortly. There could be a tension between this willingness to experiment and the possible need to be particularly professional with online users. Users who visit the library in person have chosen to do so, whereas those who use the electronic arm could be more fickle, demanding and impatient.

Blogs

The ‘blogosphere’ is now a kind of global brain and a vital part of online culture.

Blogs are primary sources and can contain some of the most current opinion on the web and are becoming a valid source to get the latest ideas about certain subjects. The task of distinguishing the experts and selecting from the over 72 million blogs will require some assistance from librarians (Valenza 2007). Whom do you trust? Tools like Technorati and Blogpulse can be useful aids. Advice on the evaluation of blogs can be gained from Kathy Schrock’s Guide for Educators Critical Evaluation Surveys & Resources (http://school.discovery.com/schrockguide/evalblog.html). This is set to become an important new area for IL librarians to develop their expertise, and at the same time engage academic staff in understanding the new metrics of authority on the web.

Academics are using blogs to help develop writing skills, exchange of information and thereby encourage community, reflection and in the best cases assist deep learning (Windham 2007). With the support of academic staff (particularly in agreeing the software to be used – e.g. Blogger or Blackboard)
they could be used in IL teaching, for example (Foggo 2007a) with students participating in a group blog saying what they hoped to achieve in a planned search and then going back after the searching and post into a blog about their experience. This enables sharing of content and demonstrates the effectiveness of the session. Students undertaking dissertations could be encouraged to keep a blog as a way of recording progress, and in reflecting on the research process, demonstrate their literature searching, use of sources and composition and to gather opinions from peers or instructors.

**RSS Feeds**

RSS feeds provide the glue which links these Web 2.0 services together. In particular, they allow researchers to connect directly to their desired current content. In doing this they follow Ranganathan’s Fourth Law ‘Save the time of the reader’, exactly (Ranganathan 1931).

Students and researchers subscribe to RSS feeds to obtain regular content from news services, blogs and relevant content from databases. They can create their own information world, selecting their sources which is then fed to them, as it becomes available (Valenza 2007). They may choose to use an aggregating service like Bloglines which collects their feeds from all their sources into a common format for swift browsing, when required. IL librarians can now promote these to advanced researchers to facilitate access and regular update of content concerning their chosen subjects. Jay Bhatt at Drexel University (Anon 2006) collected RSS feeds from various approved sources like Table of Contents from ingenta for specific groups of students and by this means taught them evaluate and control the material flowing to them via RSS feeds. This encouraged them to set up their own feeds and to improve their critical skills.

**Wikis**

Although wiki technology is simple and easy to understand (Ferris and Wilder 2006) some teachers criticise the ease of access and the danger of its being an unmonitored open environment. This is exemplified in Wikipedia, the most famous wiki. Wikipedia’s popularity is such that we cannot prevent its use by our students. Lee Rainie (2007) revealed from findings in the Pew Internet Project that 44% of the young adult Internet users seek information on Wikipedia. There have been problems with bogus posts. Rules and guidelines have had to be imposed and an arbitration committee set up to settle entry disputes. Robots also troll around the site looking for obvious vandalism. We should acknowledge its legitimacy as a starting point for research but teach how it should be measured against other reference sources, and understanding its strengths and weaknesses. By use of the History facility students can gain insight into how material is constructed. Wikipedia shows us how easy it is to post information on
the web, and can indicate how knowledge is accumulated. It leads to the central question of the validity of any piece of information and why we should trust it. In a Web 2.0 world this becomes increasingly important for users to understand. For students to be warned never to use wikis is both unrealistic and hence may miss material which could be of benefit to them, especially as more information becomes available in this form (Ferris and Wilder 2006).

The creation of wikis to encourage group work and peer review in IL teaching should be extended from mainstream academic teaching to assisting with IL development. With the assistance of academic staff, and agreement on software, for example, Moodle, PBWiki, or Blackboard, a wiki could be used to share content and resources on a topic with the group itself deciding its format and development. For example, Teresa Dobson at University of British Columbia (Barnes et al. 2007) used a wiki with a graduate course on technologies for writing, as a way of collaborative composition.

Other uses of wikis in IL include the sharing of good practice among librarians: for example, the IL section within Library Success Wiki http://www.libsuccess.org/index.php?title=Information_Literacy, the Library Instruction Wiki, from the Oregon Library association’s Library Instruction Round Table http://instructionwiki.org/Main_Page and Chris Powis InfoTeach http://infoteach.org/wiki/doku.php.

Finally, wikis can be used as easily updatable vessels to contain subject information for IL dissemination. For example, Chad Boeninger’s excellent business wiki: Biz Wiki http://www.library.ohiou.edu/subjects/bizwiki/index.php/Main_Page.

Podcasts

Podcasting provides a complementary way of packaging IL material which will appeal to certain users. They allow students to time shift, using otherwise dead time and can be used in a car, while jogging...anywhere, anytime. Podcasts are not limited to academic star performers with wonderful voices! They can be a way of providing material before a lecture, reinforcing points made at a lecture, and as a revision tool. By their nature and limitation to audio podcasts are usually short (around 15 minutes) and not too complex. Curtin University of Technology in Perth, Western Australia (Berk et al. 2007) have built up an extensive collection of podcasts at various levels from introductory to advanced, book reviews and an opinion forum http://library.curtin.edu.au/podcast/index.html. Examples include Library vs. Google, finding statistics and evaluating resources, all core IL topics. They also found that podcasts had great potential for distance education and particularly for English as Second Language students. For other libraries it may just be another way to package information which will appeal to a minority audience. Good promotion via library news channels, or a library blog and offering alternative methods of access may be key.
Social Bookmarking and Tagging

These services enable easier storage of our own chosen references and bookmarks, making them accessible to us on a PC wherever we are. The most well known are Connotea, aimed mainly at scientists, CiteULike for general researchers and del.icio.us, the huge repository for storing, sharing and discovering web bookmarks. Libraries can set up del.icio.us accounts for their users (Rethlefsen 2007). Del.icio.us can be used as a research tool to help students to organise individually what they find and bookmark easily, accessible anywhere. It can assist referencing and encourages them to tag, which is central to the linking of ideas, and aids sharing of resources. Individuals will use different tags according to their own interests, but when these are shared with others, this tagging can expose new links, which in turn lead to discovery of further resources.

The use of tagging is becoming critically important in widening the power of search. Students increase their searching power as they come to understand the tagging, and folksonomies (Valenza 2007). Some librarians are being critical of tagging and compare it unfavourably with tradition taxonomies as used in classification schemes (Hayman 2007). Much can be made of the limitations of tagging, especially where tags are limited to single words, and users may use a number of words to describe similar phenomena. However, research by Golder and Huberman (2006) using data in del.icio.us showed that stable patterns will tend to evolve over tags used.

Tagging can become part of critical thinking, making links which involve evaluation, categorising, and formulating keywords. They can assist understanding of subject headings and summarising a topic. Tag clouds can be useful for browsing similar concepts, narrowing or widening terms. However, the possibilities opened up by tagging may prove popular with our users and useful to develop and encourage student research. Perhaps most interesting is the tagging of catalogue items as piloted at the University of Pennsylvania in their PennTags facility. See http://tags.library.upenn.edu/.

Social Networking

In the latest Pew Internet survey in the USA, 55% of online teens have created their own profile on a social network site like MySpace or Facebook, against 20% of online adults (Rainie 2007). The popularity of these social networks with students cannot be overlooked, and librarians throughout the world are coming to terms with what this means for their services. Many public libraries in the USA are seeing this an opportunity to market themselves quite aggressively where the users, or non-users are. Exemplars of this new approach are Hennepin County and Contra Costa County Library, California. In Academia the dangers of putting personal information on theses sites, which could compromise future employment possibilities is important (Windham 2006).
also leads to the ethical use of visual, auditory and textual material on these sites, as today’s student is likely to be unaware of such ethical issues. This aspect of IL is likely to become more important, as librarians may either pick up such ethical issues where an institutional approach has been neglected or work with other agencies in the institution to give the appropriate guidance.

**LibraryThing**

LibraryThing is a social network which anyone can join to store and share details of books which they have read. Brief descriptions are added and tags can be constructed. It is like a social book club, with reviews. The information is then shared with others. This may foster alternative and additional reading (Rethlefsen 2007), based on their opinions and favourites. LibraryThing could be used with groups of students to encourage reading, sharing of favourites and critical review.

**YouTube**

When Google bought this hugely popular service in November 2006 for £1.65 billion dollars, it became apparent that this was a very significant networking tool. Although limited to a 10 minute format and of variable technical quality, it contains a plethora of miscellaneous content which contains small gems for teaching and the potential to create our own videos for promotional programmes and tutorials. This is a good opportunity to involve students in the creation and presentation of the programmes and many of the best programmes have done this. For example, How to use the Library, from University of Arizona, which used students improvising (http://www.youtube.com/watch?v=0WcoteeAQSU).

Most of the material produced by libraries on YouTube is promotional, although the line between promotion and pedagogy is sometimes a fine one.

There is material explaining processes, for example, database searching – Where do I begin: Compendex http://www.youtube.com/watch?v=4L6UAT-vaj5A.

In addition, IL librarians can draw upon YouTube resources as discussion triggers, for example, Shift happens – narrated http://www.youtube.com/watch?v=FqfunyCeU5g.

**Instant Messaging (IM)**

The OCLC Perception of libraries & Information Resources report of 2005 (OCLC 2005) highlighted the use of IM as a popular method of communication for students. This medium may appeal to reticent students who shy away from using desks and other help materials. Experimentation with this form of communication may be attractive to some libraries. For example, Pennsylvania State University
has sent messages on IM to vulnerable students, offering library assistance. Darren Chase explains how it was trialled at Stony Brook University (Chase 2007). IM systems as used at Cameron Library, University of Alberta, may set a trend. There, it is used as an alerting mechanism, to communicate to library staff the need for individual help. This leads to a visit to the workstation or laptop wherever the person is situated. IM can therefore be a good way to give instant one step help, rather than the more fulsome help beloved of some library help desks.

**Flickr**

Flickr is now the most popular storage repository on the web for photos. It has a number of uses for librarians to consider (Chase 2007). Photos of our library, staff and students, its presentations, classes, and events, can be stored quickly and efficiently. Easy access is enabled as are possibilities of sharing with others. Many Library groups are being formed (e.g. Library and Librarians with currently 1,837 members and over 13,000 pictures) and this photo sharing, along with general images under the Creative Commons licence gives us a huge bank of material for use in our presentations.

**Second Life**

This is where the users have to get out of their chairs and recreate themselves. It is where we can start again and create a new library, with new space, new ideas or just make a virtual copy of our existing library. Is it Web 2.0? Can it assist IL? It is possible that some users might prefer to orientate themselves in this virtual library and ask questions that they would not normally be able to ask in ‘First Life’. We have the potential to provide material in various formats to help students by using facilities in EduNation within SecondLife to learn to find information within this virtual environment (Foggo 2007b).

**Conclusions**

The needs of the Google generation, reinforced by the developing Web 2.0 information environment, are increasing the importance of IL. Therefore we should trial Web 2.0 tools to help us to connect with this generation, but remember the element of risk involved in software which may not be stable or supported by IT departments. In our teaching we must spend more time explaining how information is created and communicated, help students to develop a sense of context when using information, encourage scepticism and the ability to evaluate, guiding them towards assimilation, deep thinking, reflection, and insisting on the ethical use of material.

We can play a key role in creating information literate citizens. We now have a whole new set of tools to enhance our delivery. It’s a world of perpetual
beta so we should experiment. We need only be constrained by our imaginations to engage our users as never before!

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