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INFORMATION LITERACY IN THE AGE OF AMATEURS
How Google and Web 2.0 affect librarians' support of Information Literacy

Author
Peter Godwin
Academic Liaison Librarian
Learning Resources
University of Bedfordshire

Address for correspondence :
Peter Godwin
University of Bedfordshire,
Learning Resources Centre,
Park Square,
Luton,
Bedfordshire
LU1 3JU

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Abstract

Internet generation students do not view the Library as the natural place to undertake their learning or research. This generation believes it knows how to search by typing words into Google, and can find our tuition patronizing. These amateur searchers are now using Web 2.0 tools like MySpace to create web content. The trend toward user-driven content will grow with the use of blogging and other Web 2.0 tools. Students can derive educational benefits from use of social networking, blogs, wikis, RSS feeds, tagging, folksonomies, podcasts, instant messaging and mashups. Library staff can take the initiative in acquiring knowledge of these tools, assisting academic staff and working collaboratively to use the new tools with them in the curriculum, particularly with delivery of information literacy. However, the need for guidance on how to use keywords, and more crucially, the ethical use and evaluation of material remains.

Keywords: Information Literacy, Web 2.0, staff training

1.0 Introduction

“Never before in the history of the planet have so many people- on their own- had the ability to find so much information about so many things and about so many other people”. This quote from Friedman (2005) poses only part of the challenge information workers now face, as they assist students to define their information needs, and assimilate, organize and above all, evaluate its quality. We should add to this the continuing Google phenomenon and new technologies associated with Web 2.0 which allow everyone to participate in exploring, creating, spreading and commenting on information. The result of these developments, especially for the Internet generation who depend upon Google, is the creation of what can be called the age of the amateurs. These persons not only think they know how to search but also want to add web content themselves in uncontrolled ways. The consequences for academic libraries and Information Literacy are profound. This paper will consider the characteristics of this Internet generation and the Google searchers, Web 2.0 and its components, and consider how this affects our own Information Literacy (IL) staff training and teaching.

2.0 The Internet generation

In the USA the group which is now recognised as the Internet Generation dates from the mid to late 1980s and 1990s. Lorenzo and Dziuban (2006) draw attention to what this means for libraries and how we relate to this new generation. The Pew Internet & American Life Study of Nov. 2005 reported that 57% of 12-17 year olds who used the internet could be considered internet creators by creating a blog, web page, posting artwork, stories, or videos online, or some other kind of online remixing. The following description is a snapshot of this generation which is currently being experienced by librarians in the USA. They want single search boxes like Amazon and Google which give instant satisfaction. They expect our databases to be in their VLEs or wherever they want to work. They find our databases too difficult and have no interest in learning about Boolean logic. They like collaboration, working in teams and social networking. They navigate the web by trial and error and ignore manuals and help sheets. Research is self-directed and likely to be non-linear. This is because they have grown up with PCs and video games. They are happy multitasking. They think that what is written down and on the web must be correct. They work with microcontent, single songs, photos, and blog posts. They are either confused or ignorant about ethical issues of the content they are using. They will cut and paste rather than read and digest what they find. Typically, they don't want to consult a librarian. Of course not every student in this age group fits this pattern, but the analysis is useful as a guide to the challenge faced by librarians. They also seem to be telling us that they find our buildings intimidating, and our IL teaching either condescending or trying to control their behaviour (Salo, 2006). This is because this generation uses networks and has become accustomed to formal and informal ways of getting information which are asynchronous, fast, free and available on demand. The pattern is not so pronounced in the UK, but I suspect that the same characteristics are being seen to a lesser extent across


our campuses and to varying extents throughout the world. It will be the future trend which we shall all see over coming months.


3.0 The Google searchers

Google has become the students' favourite way of searching, and this has led to the use of a new verb "to google". The simplicity of its front page has compared favourably with that of databases and most library home pages. The ranking of search results through those with the most links has ensured that popular sites come near the top, and students assume that they are getting appropriate results (Egger-Sider and Devine, 2005). Salo (2006) goes further and sees the design as the subtle key which has made us believe everything is on the Web. Librarians have been both worried and passionate about the dangers of Google, but the plain fact remains that our users have and will use it extensively. As Oblinger and Hawkins (2006) say "Google has become this generation's reference desk" yet "Information Literacy is much more than knowing how to open a Web browser and type a search term into Google." The user still needs to know about reliable information sources, and put the information into context. It is this amateur searcher behaviour with which we are concerned here. York (2005) concludes that the evidence that users prefer Google to library databases is confirmed by LibQUAL data for 2004 and other studies including the CREE study (Ingram et al, 2004). York proposes that "the resources users want are indeed online and available through the library ; they just can't discover them." Indeed there is still a lot of unhappiness with online catalogues and off-campus access. Salo (2006) also criticises unfriendly database interfaces, and tangled links from Library web sites to resources. Again the CREE study showed that "students raise differing designs across search engines as the most confusing factor in using these" (Ingram, 2004). The library response has often been to adopt metasearch solutions from the Library Management System providers. These allow cross-searching of those databases which are enabled to do this, and are aimed to make it easier for students to get material from a range of sources altogether. Unfortunately results could not always be ranked easily and search terms may not work satisfactorily for all the databases concerned, and supplementary detailed searches are still required. Much work continues on the development of metasearch solutions, and opinions differ on their suitability for comprehensive information searching. Many librarians have been more pragmatic and recognised that Google, and in particular Google Scholar, has a place in students' information searching strategy. With the availability of linking to full text subscribed by an institution using link resolvers, this has become a more useful search tool. The solution adopted by North Carolina State University (fig.1) is particularly interesting. The trend is therefore to meet the amateur information searchers and channel them towards the full text. However, as we shall see we should not be satisfied with the "good enough" mentality and users will still require assistance through the information maze, particularly with the growth of content deriving from Web 2.0 applications.

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What is Google Scholar?
 Why go through the Libraries' website to use Google Scholar?

1 Step One: Find the Resource You Want

2 Step Two: Get The Resource

For Articles

Links from Google Scholar may ask you to pay for articles. DO NOT PAY -- the Libraries may subscribe to the online and/or print version.

To see if we carry the electronic version, search by journal title (NOT article title):

If E-journal Finder gives you no results, search the catalog for a print copy. Search by journal title (NOT article title):

NOTE: If the Libraries has neither online access nor print copies of the journal, you can order the article through [TRIPSaver-Interlibrary](#).

For Books

Links from Google Scholar may point you toward buying a book, but the Libraries may have the book.

NOTE: If the Libraries does not have the book, you can order it through [TRIPSaver-Interlibrary](#).

3 Step Three: If you need more help...

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Figure 1: North Carolina State University Library page about Google Scholar 4.0 Web 2.0

It is through developments commonly labelled Web 2.0 that the age of the amateur can be most clearly detected. Web 2.0 has been described as “an attitude not a technology” (Davis, 2005). Wikipedia says “ Web 2.0 is a term often applied to a perceived ongoing transition of the World Wide Web from a collection of websites to a full-fledged computing platform serving web applications to end users. Ultimately Web 2.0 services are expected to replace desktop computing applications for many purposes. Before we consider these applications in detail we will look at their main characteristics.” Web 2.0 is fundamentally about user participation, remixing and tagging, featuring user generated content using simpler web tools which are easier for the end-user to learn. Users will be reading, creating and publishing more and more content. For example, social networking sites like MySpace let individuals create their own profile and interests, express their views and connect with others via the Web. These opportunities are for all staff and students. Ethical concerns over reuse of material, the overuse of Wikipedia for assignments and generally increased plagiarism have arisen. Also, blogs and wikis are by their nature open and democratic, but not necessarily authoritative. Finally, recent potentially amateur-driven developments such as podcasts and mashups demonstrate the speed with which technology is driving the provision of content to education. This is truly the age of the amateurs! How does this affect academic staff and librarians’ own continuing personal development, and how they manage student learning? I believe Web 2.0 type technologies will give librarians a real opportunity to grasp the initiative in becoming competent using them, promoting them to academic colleagues and then working together to embed them using active learning Web 2.0 techniques into course delivery. We shall now consider these challenges in turn via the Web 2.0 tools.

4.1 Social Networks and your own space

First let us discuss the social aspect of networks enabled through Web 2.0 which are so readily embraced by the Internet generation and which can be the key for librarians and academic staff seeking to reach them. The teenage social site MySpace currently has over 65 million users, with perhaps 150,000 new accounts being added daily. Facebook, the academic social networking site has 7 million users since 2004. These social network sites allow individuals to create profiles which can include personal interests, hobbies, and pictures. Each piece of information links the user to the others with similar interests, and thereby interest groups can be created. Web users are reviewing films, recommending books, publishing journals, sharing files, and exchanging favourites. Flickr enables anyone to compile their own library of pictures and then shared, by use of the Creative Commons online copyright initiative. LibraryThing even allows users to catalogue their books and share lists with each other. Librarians and patrons can thereby interact and recommend their resources to each other. Another example is Squidoo, which provides “lenses” more like research

portfolios reflecting research interests, which can be made searchable and sharable.

All these sites are significant for the skills which the students can develop in building their profiles and for the connections they build up with each other. In particular “by encouraging students to craft compelling profiles, Facebook allows students to express themselves, communicate, and assemble profiles that highlight their talents and experience.” (Educause Learning Initiative, 2006). Facebook can be used to teach citizenship in the online world. Such sites can be a starting point for discussions about web research, copyright, illegal downloads or the profile of a possible friend on MySpace. (Windham, 2006). When used to develop ideas and encourage creativity they are very empowering (O’Connell, 2006). Perkel (2006) argues that MySpace can be used to develop new literacies including remixing of text, images, video, audio and games through copying and pasting into a profile. Deitering and Bridgewater (2006) have warned of the dangers of students posting personal information on the Web, and the potential for this to be used in different circumstances (e.g.employers).Librarians have to find ways of making students realise the importance of managing the information on their MySpace pages. In the USA legislation is being proposed to protect young users from misuse of information by online predators. In the meantime and elsewhere students need to be informed of both the dangers and benefits of using these sites.

If higher education institutions are to meet the challenges of social networking by using them in the curriculum or warning of their dangers, appropriate staff development time will have to be invested by both academic staff and librarians. Librarians should be reconsidering their role vis-a-vis academic staff and grasping the initiative by providing assistance to staff with these new Web tools. This might encourage further collaboration and experiments in IL delivery.

4.2 Wikis

Wikis have grown in number and importance since their beginning in 1995. They are founded on a piece of software allowing users to freely create and edit Web page content using any Web browser. Critics have been quick to point to lack of editorial control, bias, inaccuracy and lack of academic credibility. O’Reilly (2005) counters this by reference to the common dictum applied to open source “with enough eyeballs, all bugs are shallow”. Wikipedia, the most famous wiki of all was founded on trust and now has at least 2.5 million articles, of which 850,000 are in English, some 2.5 billion page views per annum and 600,000 users. Immediacy is possibly the greatest advantage a wiki has over other reference sources. Material can be mounted quickly and easily kept up to date. Problems of malicious editing have occurred and this has led to the rules for certain pages being tightened up. Wikipedia’s popularity defies its critics and no doubt our users are giving it their seal of approval.

Librarians cannot afford to ignore Wikipedia or the use of wikis in general. Clearly they should be recommended for quick general information of hot topics, especially as a starting point (Creech, 2006) and “the associated instruction of users in the evaluation of them, are almost certainly part of the future of libraries” (Maness, 2006). They may also be increasingly useful for esoteric subjects because of the absence of publishing concerns over cost and size. Questions such as who began the wiki and for what purpose, the number of persons who seem to be editing, the amount of editing in the pages you want to use, and whether the project is still being developed or is dead, are advisable. (Valenza 2006; Creech, 2006). A health warning should be given, with encouragement to check information given against another source. Often other sources are linked from Wikipedia. Libraries who subscribe to XRefer should promote cross-checking with this excellent collection of established encyclopedias. Ultimately a balance has to be struck between conventional encyclopedias and do-it-yourself encyclopedias now possible on the web. IL librarians have to explain how both are developed, using exercises showing how wikis are created and the types of information contained, and teaching awareness of the strengths of both.

Librarians could be using wikis to exchange information for their teaching. It is interesting to note how slowly Chris Powis’s excellent Infoteach wiki on IL definitions has grown. Librarians have been very coy so far in posting their definitions on this site to arrive at consensus. TeacherLibrarian wiki is an American example of a useful sharing resource for IL teachers in schools. The Oregon Library Instruction Wiki is an excellent resource for IL practitioners with handouts, tips, tutorials, and suggested reading which was begun by Rachel Bridgewater and Anne-Marie Deitering (Bridgewater, 2005). SUNYLA New Tech Wiki is a place for all State University of New York librarians to share their experience of Web 2.0 technologies. Scholarpedia is a free peer-reviewed encyclopedia which complements Wikipedia. It will aim to cover neuroscience, applied mathematics and computer science, but contributors and editing are controlled by a strict set of protocols.

Just as blogs can be used for active learning in IL, wikis can be used with classes to encourage collaborative work, bringing together information from varied sources, with diverse ideas, taking into account feedback and making a resource which can be shared by the whole group (O’Connell, 2006). Teachers are able to examine both individual and group work in the wiki’s development via the history pages of the wiki.

4.3 RSS feeds

RSS can stand for Rich Site Summary or Real Simple Syndication and what is at the heart of Web 2.0 technology. Weblogs and other sites can provide a “feed” in XML language which enables anyone to subscribe to this content and receive it on their chosen page, thereby no longer having to repeatedly visit the site. These links cope with web pages which continually change are therefore more powerful

than bookmarks or links to a single page. This has led to the development of sites which encourage users to collect their RSS feeds e.g. Bloglines. News feeds are a very valuable source for current news and Bloglines can also be used to aggregate these. (Richardson, 2005). Bloglines could also be used in our teaching and used to amass material collected by students. Furthermore feeds can be collected on Desktops or on portable devices. As replacement for services like Table of Contents alerts from services like ZETOC or e-journal sites, Usenet and bulletin-boards, the importance of this for researchers, receiving content regularly without effort is obvious. RSS feeds can of course apply equally to library databases delivered via the Web. This would encourage dissertation students and advanced researchers to fully utilise our precious subscription databases. Cranfield University is a good example of the many libraries which are already beginning to guide users through their web pages toward RSS feeds.

4.4 Blogs

Weblogs, or blogs, are web pages used to post information like a journal or an instant message on the web. Content is variable, unlimited and is formed by the blogger. It can be like a diary or a notebook. Anyone is free to respond but they cannot alter the original content. This is the fundamental difference from the wiki. The “blogosphere” has become like a global brain, a kind of collective intelligence and a vital part of online culture. Blog space is currently doubling every six months and Technorati is tracking over 37 million blogs. (Valenza 2006 : 2) The Pew Internet & American Life Project report on Bloggers in the USA in July 2006 concluded that 8% of net users, or about 12 million American adults, kept a blog, and 39% of net users, or about 57 million American adults read blogs (Pew Report, 2006). The majority of these are under 30 years old. The immediacy and comprehensiveness of this blogosphere is becoming so great that it cannot be ignored as an information source. Blogs are primary material which can be scholarly, but facilitate instant sharing of ideas and lively debate. The speed of the transaction differs fundamentally from journal publishing and peer review processes.

Librarians now need to teach the best sources for searching out blogs, e.g. Technorati, Google Blog Search or Ask.com and how to evaluate blog content. Valenza (2006 : 2) gives a useful list of questions which users should look for, including details of the blogger, the type of materials the blogger is citing, how influential and authoritative the blog appears, size of the archive, and evidence of balanced content. Schrock (2006) also provides evaluation guidelines.

Bloggging encourages community, creativity, interaction and reflection, all key attributes of the Information Literate student. It can motivate students and allow ideas to be aired, encourage reflection and lead to a synthesis of ideas. (Berger, 2006). Some students even prefer the informal surroundings of a blog to express themselves rather than a classroom (Creech, 2006). Ground rules would have to

be set for class blogs to encourage participants to be sensitive as bloggers tend to work fast and there are no editors. (Valenza 2006 : 2). A blog could be created for a course receiving IL teaching, which allowed comments, learning from one another and linking to subject guides. The tutor could compile student weblogs onto his/her aggregator using RSS feeds. The student work can then be seen together, obviating the need to view individual student weblogs. Coulter and Draper (2006) give details of experiences at Stephen F. Austin State University and of a survey of experiences in other US libraries. Piper and Ramos (2006) in their presentation about blogs and wikis include a sample student blog at Western Washington University. The University of Minnesota U Think blog site encourages the creation of Library blogs. Innovative sites like these will require strong promotion and close collaboration with academic staff. Librarians can also use blogs themselves for marketing services to academic staff (Johnson, 2006). Temple University Library, Philadelphia, for example, uses its blog for news events and discussion.

4.5 Tags and Folksonomies

Users are now adding tags to organise their own digital collections, to categorise other people's content and to build up their own simple classification systems. Del.icio.us is a popular social bookmarking site, and users can save a webpage link there instead of using Favourites. As they are not being stored locally the links can then be used on any computer. As each page is added the user can give notes or tags to the link. Users can look at entries for other people's tags and links, and then enrich their own collection by saving entries which interest them. Flickr is being used the same way to store and tag images, and is becoming the largest public store of images on the web. Technorati, the huge index of blog content also tracks millions of tags. Browsing by tag can yield results from not only blogs but images from flickr and websites such as del.icio.us and Furl. Users are able to create tag watchlists. Collections of these personal tags have become known as folksonomies. They have become a way of helping anyone to remember material according to their own interests. Different from controlled vocabulary and subject headings in databases, they may help students to discover relationships between subjects, especially through their tags being displayed as tag clouds, thereby indicating the direction of their research. Tagging could be used to help develop critical thinking and making links which involve evaluation and categorizing. Salo (2006) sees it as a great opportunity for students to create their own information landscapes individually or in groups. Brian Kelly's article in the New York Times (Kelly 2006:1) led to lively discussions in blogs about the implications of tagging, replacing out-of-date schemes like Dewey and the advantages of giving power to people effectively voting for tags for a particular link. Professional classification schemes simply cannot keep pace with nomenclature changes, especially for Web technologies, and are becoming unsustainable. (Kroski, 2005).

Deitering (2006) ponders on how librarians will adapt their instruction to meet these new user-created structures. It is possible that the users' experience in trying to organise their own resources could help them improve their understanding of existing established systems. The opportunities revealed by tagging for individual location of information seem to be quite comprehensible and exciting to some of our users. Obviously the weaknesses inherent in folksonomies are due to the lack of controlled vocabulary, precision or hierarchy. As a discovery tool, folksonomies have potential for teaching of information literacy. University of Pennsylvania Library have developed their own tagging system "PennTags", based on del.icio.us software (see fig.2). This allows users to bookmark and tag library catalogue records as well as websites. This social bookmarking service has enabled the library and information literacy promotion to be put into user personal link collections. The Library's tagging tips page sets the tone "All right, we're librarians....we can't resist pointing out that we organized a lot of information over the past few thousand years, so we have opinions about this kind of thing."

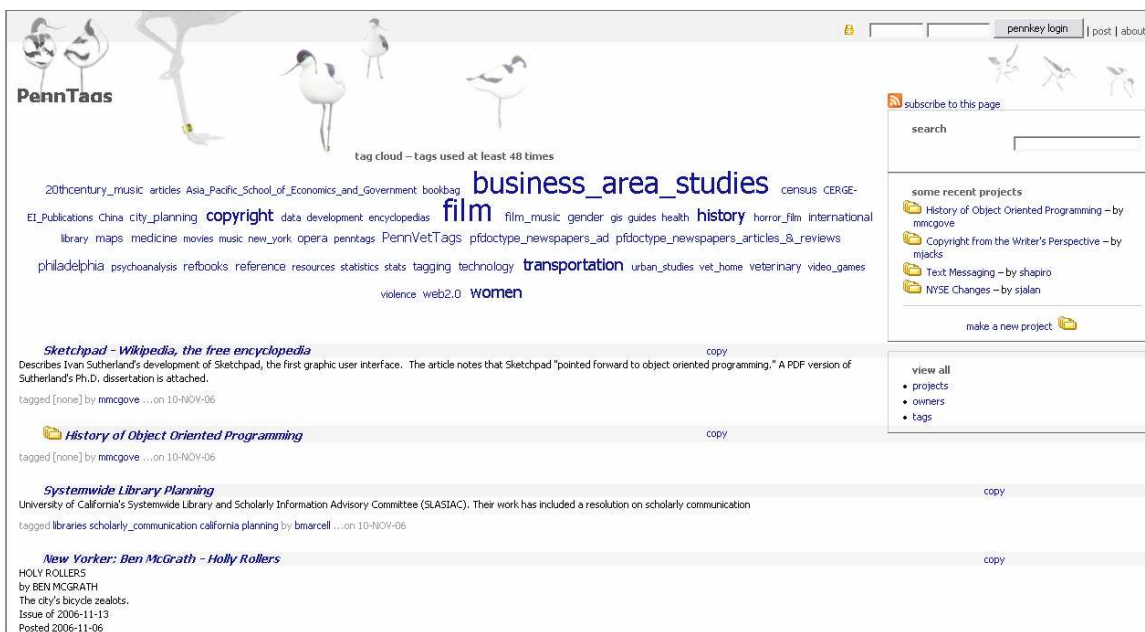


Figure 2: University of Pennsylvania Library page with PennTags

4.6 Podcasts

Podcasts are a type of broadcasting which allows individuals to record, publish, find, subscribe and listen over the internet using a portable player. Some have even described podcasts as the new "tranny". The growth of this medium can be gauged by the number of hits on Google for "podcast" :-

Sept.28 2004 24
May 25 2005 4,460,000
Sept.18 2005 60,000,000
June 20 2006 362,000,000

Podcasts use RSS feeds to bring up to date material which the user subscribes to and can then move it to their mp3 player to be listened to when convenient. It is replacing audiocassette recording. This technology allows great opportunities for academic star performers, who have good voice projection.

As librarians we can use this technology for tours and other IL teaching. For example, University of Alberta Science and Technology Library are providing basic IL programmes via screencasts and podcasts, as well as podcast tours of the Library. This autumn, Glasgow University has launched a series of podcasts including general and subject guides aimed at freshers. The preferred access method at Glasgow is via iTunes. This major provider of music for iPods, has become an attractive option enabling users to jump around chapters, thereby overcoming one of the old challenges of making individual parts of an audio feed accessible. Campbell (2005) discusses the various subscription services available to provide podcasting including Ourmedia which proposes to host software, video, audio, images and text free “forever” with unlimited bandwidth, provided it reaches a global audience. Importantly it allows time-shifting and material can be used while in the car or out jogging, anywhere.

Librarians will be seeking effective ways of searching for these, and perhaps pressing for repositories (Kraft, 2006). Before they can be recommended as another way of using information, the usual qualifications about need to evaluate source and currency will apply as with any information source. Kathy Schrock’s (Schrock, 2006) Guide for Educators site provides some examples.

4.7 Instant Messaging

Instant messaging is the 3rd most popular method of communication for students according to an OCLC Perception of Libraries & Information Resources Report in 2005 (De Rosa et al, 2005). The report also identified “friends” as the number one source for information. If librarians want to communicate effectively with students and use it for immediate one-to-one IL tuition, we have to fit into this “friend” IM mould so that “Web reference is nearly indistinguishable from face-to-face reference; librarians and patrons will see and hear each other, and will share screens and files”(Maness 2006). Joyce Valenza believes we need to use two-way tools to communicate with our users in a learner-centred environment, and “librarians should aim to be a window on students’ home desktops”(Valenza 2006 : 1). A recent study analysing an IM reference service and surveying it over a seven week period at Southern Illinois University concluded there was overwhelming support from users for instruction via this medium (Desai and Graves, 2006), but that IM was best suited to assisting selection of sources, and

search methodology rather than evaluation of material and ethical issues. The University of Oregon began an IM service using Trillian in spring 2006, which contained the IM screen names on the Ask a Librarian page of their web site (see fig.3). Usage has increased dramatically this year, (Creech, 2006). In a large building, there has also been evidence that students will use IM internally rather than leave a precious seat and go to a desk. Librarians may also find IM useful for quick consultations with colleagues (Creech, 2006). In the future the challenge will be to use IM to market services and to answer questions quickly.

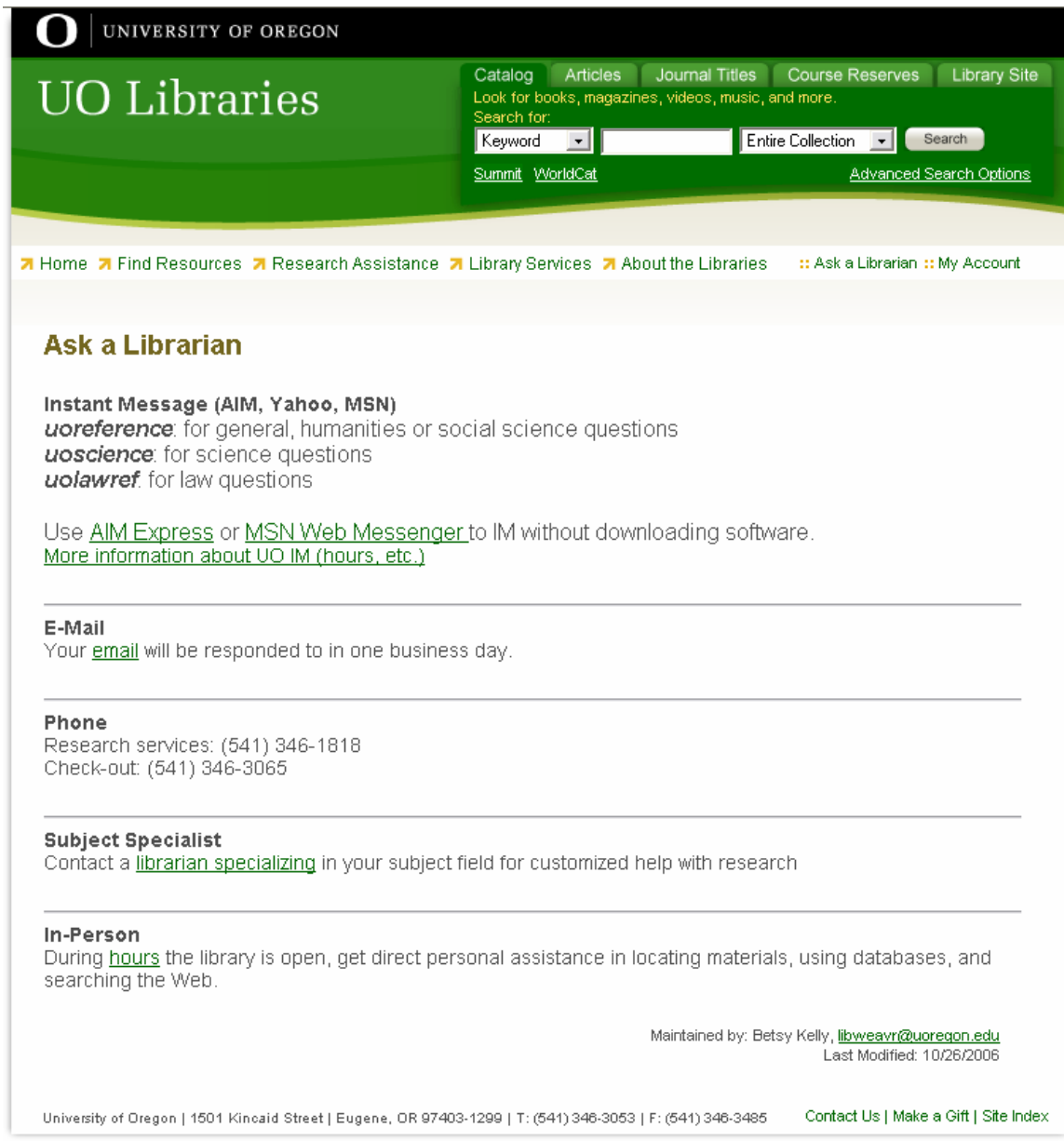


Figure 3: University of Oregon Library Ask a Librarian page

4.8 Mashups

Mashups are websites or web applications which use content from more than one source to create a completely new service. Such content often sources by use of various API (Application Programme Interfaces), web feeds and JavaScript. Crucially these mashups require little technical knowledge. For example Google Maps have been used with other data sources accessible on the internet to provide new services. The Chicago crime page is an exemplary site which does this and can display location of crime history street by street. Sharing and joining together of sources can allow librarians to create new services for our users more easily. Huddersfield University have used Greasemonkey to display their local catalogue information in Amazon so that users can be linked back into the Library OPAC to view the full record. Academic libraries which do not have programmers or sufficient IT staff may struggle to find the time to trial these services. Jenny Levine of the Shifted Librarian blog and the American Library Association suspected that “Librarians just aren’t thinking like this yet, and we need to change this...If we keep our content locked up on our own website and don’t get it out there for people to use as they want to use it, then our content will fall by the wayside.” (Casey and Savustinuk, 2006). Blyberg (2006) illustrates how our users may in future even be allowed to mashup our content themselves. The challenge will be to not only allow access to our catalogues and collections but also access our control systems (Maness 2006).

5.0 Securing our future with the Internet generation

The technology and expectations of the Internet generation so far analysed imply changes in how teachers and librarians view learning and teaching. In this age of the amateurs, students’ use of print, electronic full text, sound, still and moving images or a mix of all these, show this and requires the development of multiple literacies. As we have seen there is a steep learning curve for all staff to climb to keep abreast of the Web 2.0 technologies. Librarians can choose to take the lead in acquiring Web 2.0 skills and assisting academic staff with developments such as flickr, del.icio.us, furl, Technorati, the Google suite, and podcasts. The skills which these imply can be termed IT, media, or visual, (Lorenzo and Dziuban, 2006) but they underpin the delivery of IL. This can both help academics with their own research and provide opportunities to work creatively with librarians in IL delivery. This can be a major priority for the 21st century librarian.

Librarians need to engage the Web generation, meeting them where they are, so that libraries and librarians are seen as relevant and become part of their experience. Services have to meet our users’ learning styles and time-shifting requirements. As Miller (2005) says “with the rise of Google, Amazon, Wikipedia and more, there is an oft-stated fear that many users, much of the time, will bypass processes and institutions that they perceive to be slow, unresponsive, unappealing and irrelevant in favour of a more direct approach to services offered by others that just might be ‘good enough’ for what they need to do”. Our

future will require constant evaluation of our services. Web 2.0, is by nature participatory and interactive. We need to avoid being an obstruction between users and what they want. We should make our sites and materials more visual and active. As we have suggested wikis and blogs can be harnessed to our IL teaching. Library OPACs can become more user-focussed with tagging of items found e.g. Plymouth State University.

Library tutorials have the potential to move from static text “into more interactive, media-rich tutorials, using animation programming and more sophisticated database quizzes.”(Maness 2006). The ACRL Instruction section contains a database of tutorials called PRIMO (Peer Reviewed Instructional Materials Online) which are increasingly including media presentations and interactive quizzes. This can facilitate the use of deep and active learning methods and peer-based learning. The Horizon Report 2006 has gaming as one of its major predicted near future development areas (New Media Consortium, 2006). Games structure and play can help with youth information searching (Creech, 2006).The emphasis on active learning and participation implied by Web 2.0 should move us toward teaching which uses play and involves the users’ input and is fun! Instead of pushing students down one road we should offer alternatives and let them learn by experimentation. It may be better to admit the limitations of a database and guide them to alternatives rather than defending the indefensible.

I believe the Internet Generation students will still need help with their search strategy in formulating appropriate keywords. As they locate materials they need to understand how easy it is to create information and then learn to question, think critically and be able to evaluate material. Experience of using blogs and wikis will help to demonstrate this. These critical evaluative skills are needed now more than ever (New Media Consortium, 2006). This will lead them to understand the ethics of using the information and in so doing learning how to interact with what they find, create their own material, and in the case of advanced research, produce new knowledge.

We need to work with academic and administrative staff to ensure that tuition and institutional procedures support students’ understanding of the ethical issues in using material from the Web, and of exposure of their data in social networking sites like MySpace. Plagiarism will continue to be a problem, but tracking software such as Turnitin will assist with this. Although these ethical issues must be tackled at institutional level, the practical help that librarians can give in the context of IL is likely to be increased.

We can expect many more developments before this article is published – so volatile is the content! Here are a few examples:

- Google Co-op has just been announced which will offer us the possibility of asking students to make a do-it-yourself search engine, and for us to even create these in our teaching ourselves. Will they replace the hyperlinks on our library sites?

- The Citizendium pilot project which is an experimental wiki will start as a mirror of Wikipedia, offering a more controlled environment, with Larry Sayer as editor-in-chief. Its usefulness and dependability should differ from Wikipedia.
- Google recently acquired YouTube for \$1.65bn. This huge, fast-growing site for uploading video could be another area for IL use in due course.

Therefore, many more exciting developments can be expected. Librarians are well placed to keep abreast themselves and work with academic staff to cope with the wave of “amateur” searchers and creators of web content. In the Web 2.0 world librarians can help to ensure that student ICT programmes include the new skills (Abram 2006). We will need to become Web 2.0 savvy ourselves, using the new tools where appropriate, to promote our services, and engage and teach our students. We should use this technology if we are to appear relevant to the Internet generation. We can then encourage them to use tools such as blogs and wikis but to be critical about the content. In the information age of the amateur, the provenance and validity of content becomes blurred; IL becomes even more critical, and librarians and academic staff have new teaching tools which attract rather than patronise or bore our students.

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