_____

Towards Curriculum 2.0: library / information education for a Web 2.0 world

David Bawden, Lyn Robinson, Theresa Anderson, Jessica Bates, Ugne Rutkauskiene and Polona Vilar

Abstract

This paper reports an international comparison of changes in library/information curricula, in response to the changing information environment in which graduates of such courses will work. It is based on a thematic analysis of five case-studies from Australia, Ireland, Lithuania, Slovenia and the United Kingdom.

Specifically, it describes responses to an increasing proportion of e-content and the impact of the communication and social networking features of Web 2.0, and Library 2.0. It examines both changes in curriculum content, and in methods of teaching and learning. The latter involves pedagogy adapting and changing in the same way as the professional environment, with a greater emphasis on e-learning, and use of Web 2.0 tools. Students therefore learn about the issues by making use of these tools and systems in their studies.

Specific issues arising from these case studies include: the best mode of introduction of Web 2.0 facilities, both as topics in the curriculum and as tools for teaching and learning; the set of topics to be covered; the relation between 'conventional' e-learning and Web 2.0, problems and difficulties arising. Examples of particular courses and course units are given.

▬▬

Authors

David Bawden and Lyn Robinson
Department of Information Science, City University London, United Kingdom
E-mail: dbawden@soi.city.ac.uk

Theresa Anderson
Faculty of Humanities and Social Sciences, University of Technology, Sydney, Australia

Jessica Bates
School of Information and Library Studies, University College Dublin, Ireland

Ugne Rutkauskiene
Institute for Librarianship and Information Science, Vilnius University, Lithuania

Polona Vilar
Department of Library and Information Science and Book Studies, University of Ljubljana, Slovenia

_____

1 Introduction

This paper reviews some approaches towards introducing Web 2.0 concepts into the library / information curriculum; both by including them as topics to be covered, and by using Web 2.0 tools themselves in teaching. It is based on experiences in five LIS departments worldwide, in Dublin, London, Ljubljana, Sydney and Vilnius.

An earlier conference presentation (Bawden et.al., 2007) gave a separate account of developments in each of the five departments. This paper builds on that presentation, combining the experiences of the five departments, to give a consolidated and integrated thematic account, illustrated by specific examples, and adding extra material.

2 Web 2.0 and Library 2.0

Web 2.0 encompasses a variety of different meanings that include an increased emphasis on usergenerated content, data and content sharing and collaborative effort, together with the use of various kinds of social software, new ways of interacting with web-based applications, and the use of the web as a platform for generating, re-purposing and consuming content.

<div align="right">(Franklin and van Harmelen, 2007, 4)</div>

Web 2.0 refers to a perceived second generation of web-based applications and services and in particular the use of the web as a platform for user-generated content and web-based communities, including particularly social networking, wikis and folksonomies (O'Reilly, 2005) . Komito describes the "rubric of Web 2.0" as consisting of "user-generated content, dynamic web publishing, and online social groups" (Komito, 2007, 85). Associated technologies include: blogs, social networking sites, wikis, mashups, podcasts and vidcasts, RSS feeds, shared bookmarks and image sites. Web 2.0 is intrinsically linked to the developing 'semantic web'. Due some confusion about exactly what Web 2.0 actually is, an amount of pragmatism, if not skepticism, is appropriate.

The development of the collection of tools, techniques and approached which are treated together under the general heading of 'Web 2.0' is increasingly entering the consciousness of library and information specialists worldwide, as they gain increasing use in the library / information sector (Bradley 2007; Farkas, 2007; Miller, 2005). Their library / information applications have come to be described as 'Library 2.0' (Casey and Savastinuk, 2007; Curran, Murray and Christian, 2006; Manness, 2006), though, as with Web 2.0, there is uncertainty as to quite what should be included under this heading.

Whether these developments threaten traditional library / information services, or whether they provide new opportunities and capabilities, is a matter for debate, but it is certain that the library / information world must be aware of them. These are issues beyond technology, raising complex issues and sometimes paradoxes. Take, for example, the issue of library presence on social networking sites, often

_____

_____

quoted as an obvious good, so that libraries and information centres can meet their potential patrons in their own place. Farkas (2006) reminds us that there is no point in just "being where our patrons are"; what is necessary is "being useful to our patrons in where they are", by providing immediate access to resources interactive reference services etc. There must be content and purpose, as well as flashy technology, in Web (or Library) 2.0. A paradox is shown in the study of Wright (2007) who found that over 300 American libraries had established a presence on social networking sites, at the same time as state legislatures were passing legislation forbidding these same libraries to offer access to these same sites to their patrons. Truly, the issues of Library 2.0 are not in essence technical.

LIS students, as future information professionals, need to be aware of these complex issues and innovations – technical and otherwise -and need to know more about them than an average user, so as to be able to cope in tomorrow's information world.This, of course, raises the question of how to incorporate these themes into the curriculum.

3 Curriculum 2.0 ?

One way in which this will happen is for these topics to impact the library / information studies curriculum; both as subjects to be taught, and as tools for teaching. How this may best be done - given the wide variety of such tools, their rapid development, and the relative lack of expertise in their use among many library / information educators – is far from obvious. This is particularly so since LIS education itself is going through considerable change, in response both to changing professional requirements and to educational reforms such as the European Bologna process; see, for example, Lørring (2006), Virkus (2007) and Bawden (2007).

In response to these developments, LIS curricula around the world are increasingly recognising the importance of Web 2.0, in terms of three main facets to teaching and learning activities:

- The technological developments

- The social uses / impacts

- Implications for the field and the profession

The motivation for including Web 2.0 as both content and means of teaching are clear. All the departments represented here have been keen to use Web 2.0 facilities into their teaching for three reasons: they offer real advantages over other methods; they give students an insight into academic and professional use of these facilities; and they increase the credibility of LIS teaching, in what is sometime seen, wrongly, as an old-fashioned subject.

However, all are aware of the need for care. Merely because it is easy to use Web 2.0 does not mean it is easy to use it well. Crucially, any students are very familiar with Web 2.0 tools – more so than most academics - and will not be impressed by an amateur or inappropriate approach. Indeed there may be some resentment of the use of such tools for teaching *per se*: as a recent survey of new entrants to UK higher education showed:

_____

_____

.. most young people are actively involved I using such technology. Nearly two thirds regularly use online social networking sites such as Facebook, more than a quarter often access wikis or blogs, and around a fifth are part of an online virtual community such as Second Life .. However .. prospective students do not see online or digital communication as a substitute for face-to-face interaction .. Many also hold strong reservations about the idea of academics "invading" these areas of their lives to provide trendy new ways of teaching and learning.

(Tysome, 2007, 6)

This issue of students not necessarily accepting this form of communication readily, for various reasons, has been noted in this study – particularly in the London and Ljubljana cases. Conversely, sometimes these tools may perhaps be accepted too enthusiastically, as a kind of 'quick fix', potentially avoiding the necessary effort of academic study.

Similarly, some misgivings among staff may be noted, to do with workload, problems with technology and support, lack of expertise, and a possible negative effect on current teaching/learning. Such worries have been experienced with the introduction of e-learning, but may appear in amagnified form, because of the nature of some of the Web 2.0 tools.

Introduction of Web 2.0 into teaching and learning for LIS must therefore be done carefully, from the perspective both of students and of academic staff..

While the 'popular culture' instances of Web 2.0 have received a great deal of publicity, their long-term effects on the library/information profession are far from clear. It seems sensible to steer a middle course between avoiding the issues entirely, and making too much of them, when it is far from clear which will be of most long-term significance. Having said this, it is clear from the experiences of the departments represented here that LIS academics have been among the first in their institutions to adopt this content and style of teaching.

3.1 Incremental approaches

In general, the departments represented here had chosen to follow a careful, and generally incremental approach to the introduction of Web 2.0 topics. While some departments have introduced a small number of specific modules that deal with Web 2.0, more commonly aspects of Web 2.0 are included as a part of existing modules and course structures.

Of the modules offered by the University College Dublin School of Information and Library Studies, three in particular include aspects of Web 2.0 in their curricula. Of these two are offered at Level 3 (and taken by mainly students in the third and final year of a primary degree, and also by a small number of postgraduate students on the Graduate Diploma and Masters in LIS) and one at Level 4 (for postgraduate students enrolled in either the Graduate Diploma in LIS or the Masters in LIS).

The two Level 3 modules, IS30010: 'Weaving the Web: The Internet and Society', and IS30070: 'Cybersociety? Technology, Culture, and

_____

_____

Communication', examine current developments in Web 2.0 and students taking these modules develop an understanding of the transition from the Internet to Web 2.0. 'Weaving the Web' focuses more on the technological changes that are enabling greater interconnectivity, and the 'Cybersociety' module is more concerned with the social impact of online communities and use of social technologies.

In the Level 4 module, IS40080: 'Information and Society', the emphasis is more towards Web 2.0 from the perspective of library and information professionals. The impacts of Web 2.0 on information provision are examined in a critical way and students are encouraged to explore and debate the implications of Web 2.0 in relation to library and information work.

At City University London, Web 2.0 issues are appearing in many, if not most, modules of the library / information courses. The main issues covered are new forms of communication (blogs, RSS, wikis, podcasting and vidcasting, etc.), social networking (MySpace, YouTube, etc.), media sharing (YouTube, Flickr, etc.), and social tagging and folksonomy. The emphasis is on those aspects of these issues which affect the creation and communication of recorded information, and hence the work of the library / information specialist.

Some specific examples are:

- New communication media affecting the publication chain are covered in detail in a course on 'Libraries and Publishing'

- Social tagging and folksonomies are covered, and compared with more conventional approaches in a course on knowledge organisation

- The advantages and disadvantages of wikis and other socially constructed knowledge resources are covered in a course on digital literacy

- Basic philosophical and societal issues resulting from the development of Web 2.0 are dealt with in courses on the foundations of the library and information sciences

Naturally, given the current interest in these topics, an increasing number of students at City are keen to undertake dissertation projects on Web 2.0 topics.

4 Web 2.0 specific modules

Some of the departments had developed modules which focused more strongly and specifically on Web 2.0 issues. Three examples of these are given here, two from Sydney, and one from Vilnius, to show some of the detailed issues involved.

4.1 Sydney: Communication and Information Environments

This subject is part of the common first semester curriculum for the approximately 600 first-year undergraduates enrolled in one of the BA in Communication degrees offered in our Faculty. As a Faculty of Humanities and Social Sciences, the specialties include journalism, public communication, media arts production, creative writing, cultural studies, social inquiry as well as information management.

_____

_____

As a foundation course for the undergraduate program, it is essential that students not only **study** communication and information environments, but that they learn to develop critical capacities involving discussion forums, blogs and collaborative online tools. Thus, as part of the redesign of the subject, fuller use was made of collaborative online tools like small group blogs within our syllabus this past year. Doing so involved shaping class activities, work between classes as well as a major assignment around the use of these blogs.

Figure 1 shows the three levels of blogging zones created within the online course site – class-wide, tutorial wide (e.g.: each of the 22 tutorials had a zone) and group wise (e.g.: each tutorial class had four or five small groups who worked weekly in their group blog).
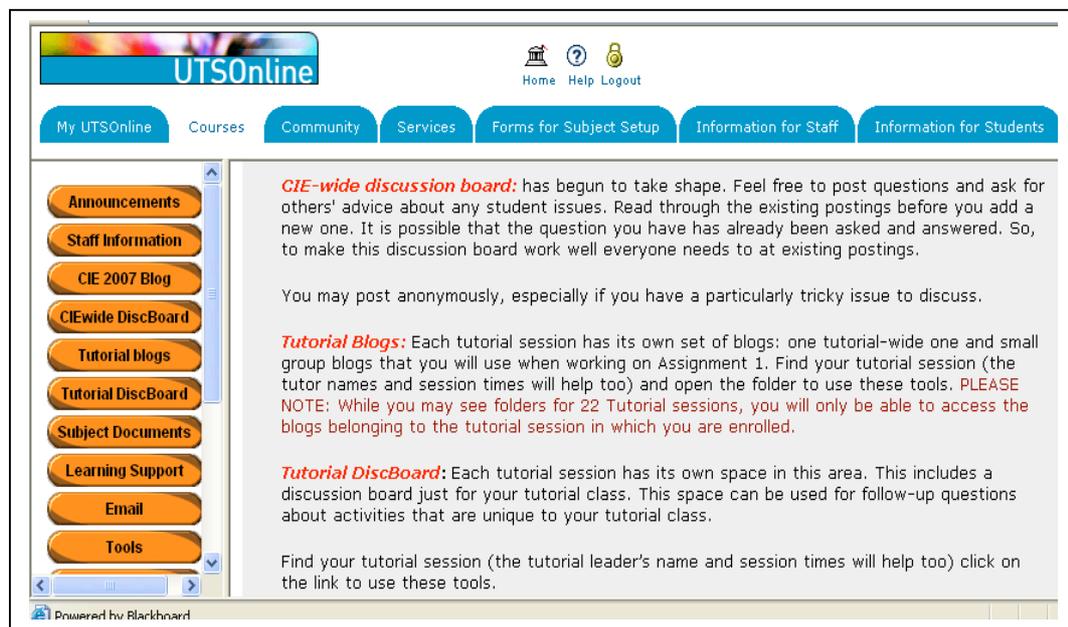
Figure 1: Three levels of blogging zones: class, tutorial and group.

Research has shown that making activity assessable in some way is a great motivator when it comes to online tools such as the ones used used in this class. Equally, e-learning research also invites caution about the risk of overloading students and crowding curriculum with online elements that do not add value with regards to the learning outcomes and desired graduate attributes. In the case of this particular subject, the link was an easy one to make: learning to think critically about the merits and flaws of various forms of online and face-to-face communication pathways available to these students was explicitly related to the desired attributes of communications graduates. It was also an essential factor to be considered in terms of the actual content of the subject. Through this approach, teaching issues about contemporary communication and information environments, including what we now label Web2.0, is a central focus of this subject. Thus, Web2.0 technologies are both sites of learning and tools for learning.

_____

_____

4.2 Sydney: Social Informatics

In a second subject (Social Informatics; 60 students in core undergrad for LIS students; elective for postgraduate LIS and rest of Faculty) the focus of weekly class activities centres on discussions about emerging technologies and theoretical frameworks associated with Social Informatics that help us to understand and interrogate the way such e-techs may be used in society. It builds on the first example – taking both the content and the use of e-tools in class further by using blogs, wikis, virtual classroom tools, IM/real time chat and podcasts.

Once again, as in the first example, it is imperative for students looking at these themes theoretically to make active use of such tools. Their first-hand experience can then used to clarify theoretical issues.

In this subject, the students create digital scrapbooks that categorise and analyse reading they are doing on the theme. Many students create blogs (individual) to deliver their scrapbooks and to reflect on the many "texts" (ranging from traditional academic works through to popular literature and music, advertisements and tv programs as well as blogs, rssfeeds and e-zines) they collect as part of their knowledge artefact. They analyse this material in terms of the bidirectional influences of society and information & communication technologies, such as that discussed in class and identified in their reading.

Use of Web2.0 tools goes further in this subject that in the first example – and it does so deliberately as part of a progressive approach to the lesson they need to learn about multimodal collaboration and work. We discuss ways to represent the ideas they wish to communicate and relate their experience of creating digital scrapbooks with the work of creating a catalog for a museum exhibition. Discussion in class and analysis in the assignment relates this work to issues of knowledge access and organization, helping the students to examine the implications of Web2.0 worlds and uses for enabling all 'users' to effectively become knowledge producers.

Blogs may be used for individual scrapbooks, but the main focus in this second subject is online collaboratories of small groups (4-6 students) who must take responsibility for a 2 week online discussion around their chosen e-technology. For this purpose, wikis are created at two levels:

1   Student teams each get a private work zone assigned in the online content management system. In includes live chat, file sharing and a wiki site where they prepare a wiki that serves as the central site for discussion with their class colleagues around their e-tech.

2   As part of a small team, they have responsibility for facilitating discussion about their e-tech topic and summarizing/weaving the activity in their wiki for the rest of their tutorial class. As part of this Moderating Team, students work together to plan, facilitate, monitor and synthesise the two-week discussion in their tutorial's Blog for that particular emerging technology.

_____

_____

Figure 2 shows the layers in this subject.
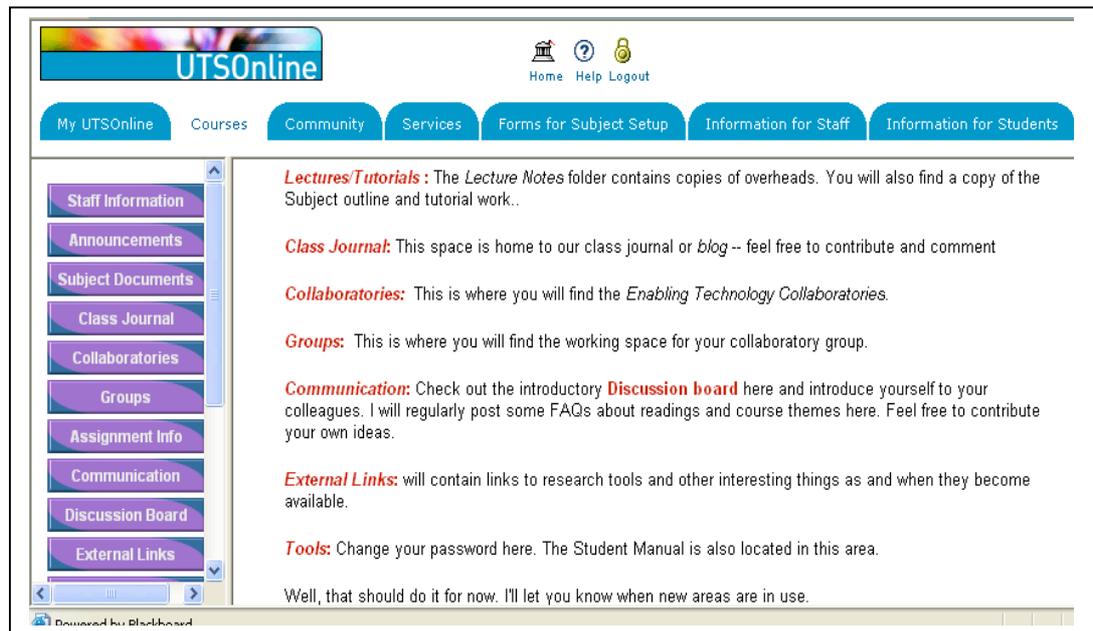
Figure 2: Collaborating online

Each team has a personal online work zone (e.g.: private discussion space, file exchange, wiki page) that can be used for group-only communication and behind-the-scenes work. Teams are also encouraged to meet in person as required. Students are expected to take active part in each of the emerging technology collaboratories in operation for any given week. They cycle fortnightly in each tutorial so that students are able to focus on one theme at a time.

Students are encouraged to bring their online chats into the classroom (that is, lessons learned, themes covered). A major assessment item involves them preparing a critical reflection of the collaboratory experience (at all levels and in all roles). They look at the benefits and drawbacks of face-to-face and online communication for workplace and social activities. Furthermore, a final assignments (critical evaluation of one of the emerging technologies under discussion) draws on the wikis constructed in the process of working through the student-moderated discussions. The online work also forms the starting point for lecture discussions in second half of semester (along with the class-wide blog that encourages the sharing of ideas on the subject's themes).

4.3 Vilnius: Internet Communication

In the LIS Institute of Vilnius University, teaching about Web 2.0 is currently integrated into the Internet Communication course for second course LIS students. This course can also be freely taken by any student of other programmes of the Communication Faculty of Vilnius University.

The format of the course has been developed in the light of the social networking site 43 Things [http://www.43things.com], where users create accounts and then share lists of goals and hopes. The content of the course has been adopted from the Learning 2.0 program, originally created by Helene Blowers at the Public

_____

_____

Library of Charlotte & Mecklenberg County [http://plcmc.org] Also the experience of other libraries, running the 23 Things program (Yarra Plenty Regional Library [http://www.yprl.vic.gov.au/Learning_2.0/index.htm], Marylathe public library [http://www.marylandlibrarieslearning2about.blogspot.com], etc.), has been explored.

The 23 hours length on-line course is based on the Moodle virtual learning environment. It consists of 10 training modules, each exploring the particular Web 2.0 tool. The course begins with the introduction to this new concept of the Wide World Web. After an introduction to Web 2.0 philosophy, students are invited to take part ina learning journey through Web 2.0 tools, where they learn about blogs, wikis, Flickr, YouTube, webcasting, podcasting, RSS, Del.icio.us, Library Thing and the Library 2.0 concept. The course is a self-discovery program which encourages students to take control of their own learning through exploration and play. Students are encouraged to work together and share with each other their discoveries, techniques and "how to's" both in-person and through discussion forums.

As the course is a part of formal LIS education, it was not possible to give the full ownership to the learning process to the students. Their learning process is supervised by the tutor, who is monitoring, consulting and assessing learning process of students. The final assessment of each student is generated from the assessment results of each module. Students of year 2007/2008 are considered as piloting the course. After the piloting the program will be reviewed and modified according to the students' feedback. Also it is planned to transform the distance course into a Wiki web site, to allow free access to the course material to the staff of Lithuanian libraries, for professional development.

5 Building on e-learning

It is clear that, in most cases, the use of Web 2.0 features as teaching tools has initially been built on existing e-learning systems: Blackboard (Dublin), Moodle (Ljubljana, Vilnius) and WebCT (London). In some cases, this has happened incrementally, by personal enthusiasm, and in other cases by clearer planning; in the case of Ljubljana, for instance, Web 2.0 tools are seen as continuing and expanding the value of e-learning tools, and sharing in their nature and advantages, as well as potentially negative features (Donert, 2004), in practice by adding Web 2.0 tools into the Moodle facilities. Initially this is being done by the inclusion of blogs to supplement and replace discussion forums for communication between students and academic staff, and between students themselves.

The Ljubljana experience confirms that, as with e-learning, there are two approaches to introduction of Web 2.0 features: the low-budget, pedagogy driven way (bottom-up) which is less controlled, more spontaneous; and the planned, systematic and institutionalized (top down) which has more control and better organization. An ideal scenario would incorporate both, but experience shows that such ideal scenarios are rare in LIS academic life.

_____

_____

The Vilnius example above shows a rich range of Web 2.0 facilities being added to a Moodle courseware environment, in a carefully planned manner for this particular course.

In London, the approach has been to introduce Web 2.0 'organically' into existing approaches. Specifically, this means introducing Web 2.0 facilities incrementally, to augment or replace equivalent but less effective, measures in the WebCT e-learning environment, and on staff web pages.

Specific examples include:

- Replacement of discussion board communication by blogs

- Use of wikis to gather student contributions, rather than using attached files

- Use of podcasts and vidcasts (live and recorded) recordings of lectures, as a complement to text files

- Use of Deli.c.ious bookmark lists, as a way of sharing web resources

City is also beginning to adopt blogging as a way of conducting some academic administration, to replace email exchanges and (in some cases) face-to-face meetings, and as a way of assisting student recruitment.

In Dublin, the tools are being incorporated into the Blackboard e-learning environment in a similar way. Here, Web 2.0 is anticipated as having an increasing impact in the School's teaching and learning activities for the assessment of student work, for example the use of social software in group projects.

6 Curriculum content and evaluation

It is clear from the examples here that the institutions all find it necessary to teach about all of the wide range of tools and features within Web 2.0 which may be of relevance to LIS; and it is difficult to think of any which would not be.

Evaluation of the use of Web 2.0 tools for LIS education is highly desirable, as soon as the development of their use permits. All the institutions participating in this study are clear that they are at the start of the introduction of these tools, so that evaluation – other than informal and formative evaluation, to guide the next stages of development - is premature.

7 Conclusions

From the rich and diverse insights given by these five case studies, we have distilled some general principles. Such principles must always be qualified by local circumstances, and by the choice of which Web 2.0 tools and features to adopt, from the variety available..

'Integration' is a key concept. Web 2.0 provides both the content of learning, and the tools to promote learning itself. This gives a particularly strong, and desirable, integration of theory and practice. It is also worthwhile to integrate teaching of

_____

_____

these topics with related activities of research or consultancy in the teaching department, where such exist.

Students typically have a natural enthusiasm for these topics, and often greater expertise in some aspects than most teaching staff. If this enthusiasm can be harnessed, and students can learn for themselves and from eachother, then the effects will be particularly positive. Similarly, the use of Web 2.0 facilities by academic staff themselves, for their own purposes, will enhance their understanding, and hence promote more credible teaching. Where academics are lacking in expertise and confidence, this must be built up gradually and sensitively. Student expectations and preferences must also be sensitively managed.

The introduction of Web 2.0 into teaching is, in most circumstances, best done incrementally, starting with particular courses or topics, and expanding on the basis of knowledge gained. Given the investment of effort into the development of e-learning systems in many academic departments, it seems very sensible to use this as a platform for development of the Web 2.0 LIS curriculum. Some degree of central planning is desirable, as is evaluation of the success of use of Web 2.0 features in teaching, as experience is gained.

The full range of Web 2.0 features should be covered in the curriculum, as it is difficult to predict which will be of importance for LIS practice. It seems certain that some will be, and their successful incorporation into the LIS curriculum – both as things to learn about, and as tools to learn with – is an important task.

References

Bawden, D. (2007) Facing the educational future. *Information Research* [online], 12(4), paper colise01. URL: http://informationr.net/ir/12-4/colis/colise01 [accessed 20.10.07].

Bawden, D., Robinson, L., Anderson, T., Bates, J., Rutauskiene, U. and Vilar, P. (2007) Curriculum 2.0? Changes in information science education for a Web 2.0 world. *Presented at: INFuture 2007: 1st International Conference on the Future of Information Sciences. Digital Information and Heritage Conference, Zagreb, Croatia, 7-9 November 2007.*

Bradley, P. (2007) *How to use Web 2.0 in your library*. London: Facet Publishing.

Casey, M.E. and Savastinuk, L.C. (2007) *Library 2.0: a guide to participatory library services*. Medford NJ: Information Today.

Curran, K., Murray, M. and Christian, M. (2006) Taking the information to the public through Library 2.0. *Library Hi Tech* 25(2), 288-297.

Donert, K. (2004). Analysing the use of virtual learning, collaboration and communication tools in Innovation Education. *European Teacher Education Network, volume 6*. London: University of Greenwich Press, 101-114.

Farkas, M.G. (2006) Libraries in social networking software. *Information wants to be free* [online blog]. 10 May 2006. URL:

_____

_____

http://meredith.wolfwater.com/wordpress/index.php/2006/05/10/libraries-in-social-networking-software/ [accessed 07.10.07].

Farkas, M.G. (2007) *Social software in libraries*. Medford NJ: Information Today.

Franklin, T. and van Harmelen, M. (2007) *Web 2.0 for content for learning and teaching in Higher Education.* URL: http://www.jisc.ac.uk/media/documents/programmes/digitalrepositories/web2-content-learning-and-teaching.pdf [accessed 05.09.07].

Komito, L. (2007, in press) Information society policy. *In:* Hearn, G. and Rooney, D. (eds.) *Knowledge policy: Challenges for the 21st Century.* Cheltenham: Edward Elgar. 85-99.

Lørring, L. (2006) Content, reflections and curricular questions. *ASIS&T Bulletin* [online], December 2006 / January 2007. URL: http://www.asis.org/bulletin/dec-06/lorring.html [accessed 19.12.07].

Maness, J.M. (2006) Library 2.0 theory: Web 2.0 and its implications for libraries. *Webology* [online], 3(2). URL: http://www.webology.ir/2006/v3n2/a25.html [accessed 07.10.07].

Miller, P. (2005) Web 2.0: Building the new library. *Ariadne* [online], Issue 45, URL: http://www.ariadne.ac.uk/issue45/miller [accessed 07.10.07].

O'Reilly, T. (2005). *What is Web 2.0 ? Design patterns and business models for the next generation of software*. URL: http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html [accessed 13.09.07].

Tysome, T. (2007) Sixth-formers object to educational space invaders. *Times Higher Education Supplement*, no. 1812, 21 September 2007, 6-7.

Virkus, S. (2007) Collaboration in LIS education in Europe: challenges and opportunities. *Presented at 73rd IFLA general conference, Durban, South Africa, 19-23 August 2007*. URL: http://www.ifla.org/IV/ifla73/papers/134-Virkus-en.pdf [accessed 19.12.07].

Wright, V.K. (2007) *Can MySpace also be LibrarySpace?*, unpublished Masters dissertation, Department of Information Science, City University London.

_____