Journal of Information Literacy

Article

Experimenting with Web 2.0 to cultivate information literacy within a medical ethics, law and human rights course

Sarah Whittaker, Information Librarian, University of Leicester, UK.
Email: srw9@leicester.ac.uk

Joanne Dunham, Clinical Sciences Librarian and Head of Collections & Information Systems, University of Leicester, UK.
Email: jd1@leicester.ac.uk

Abstract

The project, funded by the Teaching Enhancement Forum at the University of Leicester, aimed to develop medical students' information literacy by embedding it directly into their course at the point of need using Web 2.0 tools rather than providing generic training. Students would then build their own personal learning environments which they would take with them throughout their degree course and eventually into their medical careers.

The project ran over nine months and was intended to kick-start a change of practice in how the library delivers its information literacy training. The Library is still at the initial stages of discovering how it can use Web 2.0, many of the benefits of Web 2.0 come from an accumulation of resources and development of networks over time. The long-term goal of information literacy is to enable students to find and assess research materials independently. The structure of the modules only had short-term projects and goals for the students. This meant that realistically the library had to shift the original focus of the project towards using Web 2.0 tools to tailor library and Internet resources for the students and by doing so raising their awareness of these resources.

The resources developed were popular with the students and the course tutor reported an improvement in the range of their reading. However, there was no perceptible change in the way the students worked nor did they use the Web 2.0 communication tools provided to enhance their learning. For the Library's information skills training to be effective and to go beyond just providing search tools, information literacy and the Web 2.0 technologies need to be written into the course itself rather than as an adjunct.

Keywords

Web 2.0; Information Literacy; Virtual Learning Environment

---

1. Introduction

The term Web 2.0 is commonly used to refer to web-based technologies that facilitate user-generated content; the emphasis is on user communication and sharing of materials. Examples range from popular social networking sites such as Facebook, RSS feeds, social bookmarking, photo and file resource sharing sites such as Slideshare or YouTube, and blogs and wikis Typically users are recreating, mixing and adding commentary as well as creating their own material and metadata.

As this shift in emphasis towards user-generated content and sharing becomes ubiquitous amongst students in their lives outside of their academic work, much has been written about how this is changing the whole culture of the Internet (Shirky 2008). There has been much debate about how libraries can utilise Web 2.0 (Godwin 2007; Lorenzo et al. 2006), and furthermore how Web 2.0 may be influencing students' approach to their work (Alexander 2008). Many libraries have been experimenting with Web 2.0 not only as tools to facilitate communication between the library and its users, but also to embed their resources and services directly into academic courses (Matthew & Schroeder 2006; Scaramozzino 2008). A growing skills gap has been observed as students appear to be conversant with technology, but they do not always have sophisticated skills in either searching for or evaluating resources (Kennedy et al. 2008; Manuel 2002; Rowlands et al. 2008). Current 'Generation Y' students are said to be optimistic about the benefits of technology (Manuel 2002), but have reported that they feel overwhelmed by the choice of resources and that they cannot find their way around them (Head & Eisenberg 2009), and have widely varying levels of ability at critical thinking (Weiler 2005).

At a time when the needs of students, the roles of information librarians and the information landscape is developing into un-chartered territory, the aim of this project, funded by the Teaching Enhancement Forum at the University of Leicester, was to explore some of the possibilities of using Web 2.0 to help students become information literate in order to deal with the challenges of using information effectively in the digital environment.

1.1 Project objectives

The project aimed to exploit Web 2.0 tools to embed information literacy into the structure of an academic course. The aim was to do this in a way that enabled library users to engage with information literacy and broaden their use of scholarly resources. This project was to be an experimental investigation into whether the participatory culture of Web 2.0 could be utilised to give students more control over how and when they learn, so that library staff could focus on and respond more directly to individual needs.

1.2 Background

The library consulted course tutors at Leicester Medical School to see if they were interested in the project. The Medical Ethics, Law and Human Rights course tutor was enthusiastic to be involved. The subject of medical ethics and law is discursive in nature, with a considerable volume of wide ranging material that students have to consult. At this time the subject tutor was engaged in redesigning the course so that the students worked together in groups more closely than in previous years. The tutor was also keen for students to develop both the tools and a mind-set that would enable them to build on and add to their knowledge about medical ethics, law and human rights throughout the medical course and into their clinical practice. The use of Web 2.0 tools seemed to be an appropriate way of enabling this.

The project had two distinct stages. The first took place during the Phase I compulsory one-week course known as 'Ethics Week' for all first year medical students. This is a brief but intensive introduction to medical ethics. Over 250 students spend the week attending seminars and workshops, and, working in groups, they produce a daily presentation on different topics. The second took place during the Phase II Special Study Module (SSM) on Medical Ethics, Law and Human Rights, which is a 12 week course for third year students who have elected to take this module. Over the 12 weeks the students attend weekly seminars and workshops and produce weekly group assignments on different aspects of medical ethics, law and human rights.

1.3 Early developmental stages: some issues and problems

The initial period of the project focused on experimenting with different technologies and resources to find out what was most appropriate for a one-week course with a large cohort of students. The original intention was to adopt an approach that integrated technologies hosted externally to the University. For example, AJAX start pages were developed, which are easy to use and to customise by adding RSS feeds and interactive content. Three products - Netvibes, Pageflakes and iGoogle - were compared and initially it was intended to use one of them as a basis for the whole project. There was experimentation with the use of RSS feeds from journals, widgets that searched the library catalogue and e-journals, RSS feeds from databases such as Pubmed of topics within medical ethics, social bookmarking, and Twitter. One of the original aims of the project was to set-up a simple start page that students could then tailor themselves, for example setting up their own feeds and creating their own social bookmarking accounts on specific topics within medical ethics.

In the meantime however, it emerged that the course tutor needed to post material that some course contributors would not want to be publically accessible due to the sensitive nature of the material. The tutor also wanted all students to be able to view each others' work. The logistics of implementing this solution for over 250 students who would have all required authentication would have been unmanageable. After investigating the possibility of using Plone (the University content management system) it was eventually decided to use Blackboard (the virtual learning environment used throughout the University of Leicester). Blackboard was used as an authentication hub for the online resources that had been developed during the investigation phase.

It became clear that the aim of information literacy to encourage independent learning by students to seek out and assess research materials for themselves was too ambitious within the time frame of the Ethics course. As medical students tend to be goal orientated it was decided to place specific resources directly into their course module in Blackboard. Therefore the project focused on raising the students' awareness of the range of resources at their disposal by using Web 2.0 tools to create customized search tools. The idea of using certain tools such as social bookmarking was abandoned, as over one week the students would not have the time to build up a shared resource to which new sources could be added and there would be no time for the students to personalise content and add to the resources provided for them.

2. The Medical Ethics, Law and Human Rights courses

2.1 Ethics week June 2008

The module on Blackboard consisted of many conventional features such as: course information (handbook and contacts); case study assignments and related materials; recommended reading (journal articles and book chapters) and videos (pre-recorded videos of seminars). There was also a discussion board relating to course topics and help on using the resources.
The more experimental elements introduced into the Blackboard module were: a blog to which the students were instructed to submit their daily assignments; search tools; help and communication channels using various Web 2.0 tools, and some guidelines for citation.

Figure 1: Screenshot of the online resources in Blackboard.
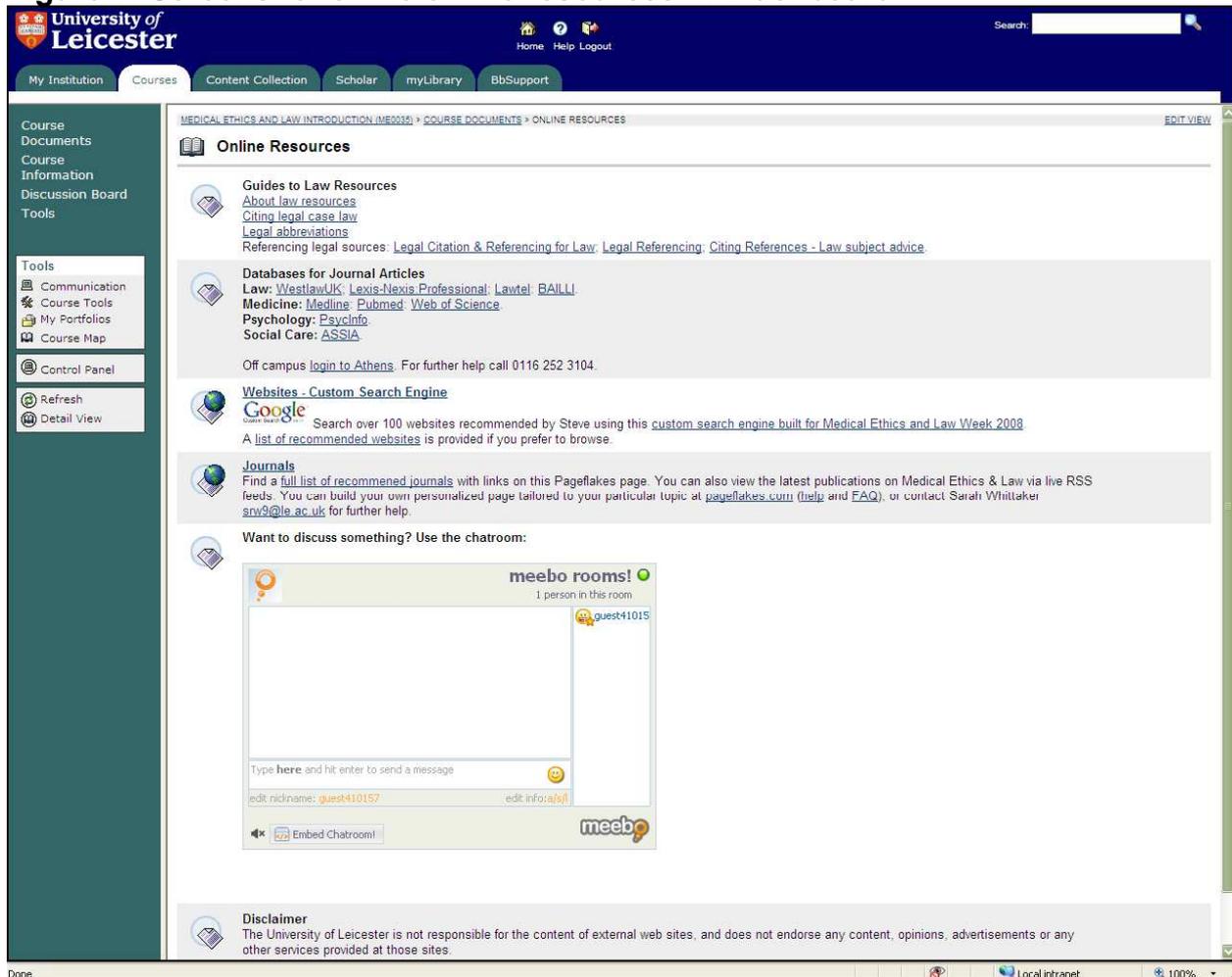
In previous years students have been given lists of recommended databases, and they would have been expected to find these independently on the library website. For the project, links to the databases were put directly into the Blackboard module immediately under the students' gaze, to facilitate their use. The links went to the database on the university library webpage which authenticates and describes the resource and, in many cases, provides help and guidance on using the database. To help students focus their research and make the list of recommended websites more accessible to them a Google Custom Search Engine comprising of the 160 websites recommend by the tutor (http://tinyurl.com/63qahv) was created. Using this tool the students could choose to search either the 160 websites or toggle to a standard Google search of the Internet. The Google custom search was the most used resource and had a lot of positive feedback both formally and informally.

As well as a list of recommended websites, the students have also traditionally been given a hard copy list of recommended journal titles. The original AJAX 'startpage' focused on journals using Pageflakes (http://www.pageflakes.com/srw9/). One of the page 'flakes' consisted of direct links to the journals. In the future all links will take students off campus to the EZProxy login, so that off campus students will be guaranteed straightforward access. The original intention was for students to set up their own RSS feeds to journal contents, and the following exemplars were set up: a feed from the contents pages of the Journal of Medical Ethics, and a feed from Pubmed which picked up new additions to the database searching for 'medical ethics'. Although these feeds were relatively crude, they were intended to show students at a glance what RSS feeds can do. There was also a feed from YouTube which picked up the terms 'RSS' and 'Pubmed', and showed

54

instructional videos for creating RSS feeds from Pubmed. 'Flakes' that searched the library catalogue, e-link (ejournals), and the custom search engine were also included.

There was a meebo chatroom which students could use to communicate with other students concurrently logged into Blackboard. Help channels on Twitter and Seesmic (video blogging), which were demonstrated in a face to face session with the students on the first morning of Ethics Week, were also set up. They were promoted as a channel of communication either between the students themselves or to ask library staff questions. The students could access this directly within Blackboard. In addition the students were given library email contacts, and staff made a daily visit to the student coffee bar where they could address questions from the students face-to-face.

2.2 Ethics week outcomes

Students were introduced to the resources during the introductory lecture at the beginning of Ethics Week; feedback was collected by a survey at the end of Ethics Week. The resources were popular with the students, in particular the Google Custom Search Engine. Some examples:

> *I think the on-line resources are excellent. I have browsed through them and happy in the fact the resources are constantly evolving (unlike students) and can be accessed throughout my time here. Excellent!*

> *Online resources were very helpful - much better this year uploading our work as opposed to the posters from last year.*

> *The online resource was good especially the limited Google. This is something that should be set up for the whole course.*

The course tutor believes that making the resources available in Blackboard helped the students with their research. In previous years lists of resources had been handed to the students in hard copy in their module handbook with little evidence that the students sought further sources of information. It is also worth mentioning that every year medical students receive generic information and library training which includes searching Medline, and recommended sources of information for evidence based medicine. The students on this Ethics course had received the same generic information and library training, the only difference this year was the resources were made available through this project.

Whilst the resources that were developed for the project were clearly used by the students and positive feedback was received, there was no fundamental change of their 'normal' research behaviour. Students did not use the Web 2.0 tools to develop a community of practice nor to share resources. At this stage in the project it was felt that this was due to the short nature of the course and that the tools were not built into the structure of the course but were 'add-ons'.

The negative outcomes were that the students did not use any of the communication channels available to them to ask the library questions. Likewise the students simply used the blog to upload their assignments and did not comment on each other's work, despite being encouraged to do so by the course tutor and some attempts to initiate comments by a member of the project. The chronological structure of a blog may have resulted in students experiencing difficulties seeing each other's work as they covered parallel topics on different days.

2.3 Phase II special study module (SSM) on Medical Ethics, Law and Human Rights

There were nine students on this elective module. Although student numbers were significantly lower than the group in Ethics week in the first stage of the project, Blackboard continued to be used partly for continuity and to ensure that some of the course materials were not made publically available. At this stage the library's original plans had to be altered as it was originally thought that

55

the SSM would be structured so that students would be completing a large piece of work over a sustained period of time and that resources could be developed accordingly. Many Web 2.0 technologies become beneficial and meaningful over a prolonged period by accumulating information and building social relationships. In reality the SSM featured short time spans and weekly assignments, so many of the project's original ideas (for example students tagging and sharing resources) would not be applicable.

The same basic structure of the Blackboard site as for Ethics week was used, with a few key differences. A wiki rather than a blog for the students to submit assignments was used so that students could find material by topic rather than date, and a weekly 'Tip of the week' was introduced. In an attempt to promote resources and information literacy issues (such as evaluating websites), a concise information literacy topic updated weekly in a prominent place was posted onto the site. The topics were: Google tips, working online collaboratively (using Google documents), accessing journals, accessing databases, mental health resources, about the Google custom search, evaluating websites, targeting your search, Intute resources, and the National Library for Health.

The structure of the course constrained how resources could be developed to help the students. As well as the lack of time to develop personalised resources, realistically the students were not going to start using training materials in information literacy topics when their research was going to be short term and focused on getting an overview of Medical Ethics, Law and Human Rights topics.

2.4 Phase II SSM outcomes

Statistics on the use of the resources were collected and showed that the discussion boards were not used much, however the small numbers of students on the course made it unlikely that they would need to use them. The students later informed the course tutor that they tend to communicate via text or face to face.

The course ran on Mondays, which was also the coursework hand in day. The usage of the site reflected this as it was most heavily used on Friday, Saturday and Monday as students prepared for their assignments and group sessions.

The students were emailed an evaluation where they stated that they liked the resources and found them helpful.

> *I think the online resources available to us were very good in this module. We had specific search engines available to us to aid us with the research for our presentations, these helped as they ensured we had all the appropriate information for our presentations. We also had a section on Blackboard with all the resources we needed to complete our work which was also very helpful.*

> *The course was well structured and organised. The online resources were particularly useful when preparing for our presentations.*

Despite the positive feedback from the students the course tutor reported that he had spoken to the students informally, confirming that they have not changed their existing work behaviours and methods by either developing new networking practices or creating their own Web 2.0 tools or skills. Whilst the original intention was to do this, realistically the project became more about what could be achieved in the short time span within which student's assignments were undertaken. The students reported they had found the Google custom search engine and the Journals Pageflakes page very useful, and that they had even shared these resources with students outside the Medical Ethics, Law and Human Rights SSM.

Significantly the course tutor also believed that the custom search engine resulted in the students using a wider range of resources in their work. The custom search engine comprised of 160 preselected websites, collated by the course tutor. This was seen in their wider use of materials within their presentations and their increased number of references compared with previous years; he believed this had improved the quality of their work. He also stated that the students' knowledge of where to find materials had noticeably improved as a result of the resources, in particular legal materials and databases.

The students also expressed a preference for learning through YouTube video, which will be considered for the future either as a place for students to access video clips from lectures, as a resource to find course material produced by other sources, or even as a source of reusable learning objects relating to information literacy. The custom search engine was very popular, as Google is regarded as a 'trusted brand' and selecting sites to search allows quality control; students are drawn to the familiar.

The wiki worked better than the blog as a place for students to upload their assignments largely because it focused on the organization of content rather than entries being added in a strict chronological order, making them more difficult to access.

3. Conclusions

The project has been a valuable learning process on which the library can build for the future as it continues to work on utilising Web 2.0 tools to develop information literacy. The project succeeded in using Web 2.0 tools to produce resources tailored to the course which helped students to access information more effectively than in previous years. It did not however facilitate the development of students' Web 2.0 skills such as creating their own feeds, tagging, or sharing resources. Students did not change their approach to their work by forming networks, commenting or debating online, nor was the students' ability to evaluate their resources assessed.

Putting tailored resources into the student Blackboard course makes them more likely to be used than when students have to visit a library web site and then work out which resources to use. This doesn't teach them information literacy skills per se but does make resources easier to access. It could be argued that creating these tools and placing them and library resources within the Blackboard module is a form of 'spoon-feeding', not forcing students out of their comfort zone and making it too easy for them to find the materials. The sheer volume of material available to students in the digital age, in particular for a course such as medical ethics law and human rights, is unprecedented. Prior to the digital age, directing students to the library (which consists of selected and finite resources) would not be considered spoon-feeding, and students in the early stages of their learning in a given subject area would not have been expected to use randomly selected resources or have the experience to select these resources themselves. Our claim is that the digital environment requires a different approach to the print environment, in other words by facilitating access to digital resources the project aimed to introduce the students to information literacy practices that would support their development as learners and their future career. In this context, the tools created made better quality resources more accessible and may have been beneficial to the students' learning experience.

The technologies and the goals of information literacy need to be built into the course to be meaningful to the students. Simply showing students resources is not enough, learning to use them must be integral into the work that they do, and they must understand that this is part of how they are assessed (Kirkwood 2008). In future it may be possible to devise ways to do this, for example assessing their comments and online debates, or asking them to describe how they undertook their research process, which resources they used for which types of 'answer' or idea, or showing how they searched for them. Students are likely to be debating and commenting online in

57

their social lives and when pursuing their personal interests. We could encourage them to transfer this practice into their academic life, although this may well be incongruous with assessment as in a formal context students may be inhibited if they feel they are being observed and their comments being recorded. A deeper understanding of how the use of multimedia environments and collaborative environments affect student learning (Chou & Min 2009) is required. The Library may be able to incorporate other tools from Blackboard (such as short quizzes or tests) to assess what students are learning (Knecht & Reid 2009) within the course. This project has generated a culture of collaboration between the course tutor and the library staff enabling the library to go beyond its standard provision of existing resources. This has led to the creation of some useful learning tools for medical students and has consolidated the integration of information literacy within the Medical Ethics, Law and Human Rights courses.

Acknowledgements

References

Alexander, B. 2008. Web 2.0 and emergent multiliteracies. *Theory into Practice.* 47(2), pp. 150-160.

Chou, S.-W. and Min, H.-T. 2009. The impact of media on collaborative learning in virtual settings: The perspective of social construction. *Computers & Education.* 52(2), pp. 417-431.

Godwin, P. 2007. Information literacy meets Web 2.0: how the new tools affect our own training and teaching. *New Review of Information Networking.* 13(2), pp. 101-112.

Head, A.J. and Eisenberg M.B. 2009. *Finding Context: What today's college students say about conducting research in the digital age. Project Information Literacy Progress Report.* [Online]. University of Washington: Information School. Available at: http://projectinfolit.org/pdfs/PIL_ProgressReport_2_2009.pdf [Accessed: 15 April 2009].

Kennedy, G.E. et al. 2008. First year students' experiences with technology: Are they really digital natives? *Australasian Journal of Educational Technology.* 24(1), pp. 108-122.

Kirkwood, A. 2008. Getting it from the Web: Why and how online resources are used by independent undergraduate learners. *Journal of Computer Assisted Learning.* 24(5), pp. 372-382.

Knecht, M. and Reid, K. 2009. Modularizing information literacy training via the blackboard eCommunity. *Journal of Library Administration.* 49(1-2), pp. 1-9.

Lorenzo, G. and Dziuban, C. 2006. How choice, co-creation, and culture are changing what it means to be net savvy . *EDUCAUSE Quarterly.* 30(1), pp. 6-12.

Manuel, K. 2002. Teaching information literacy to Generation Y. *Journal of Library Administration.* 36(1), pp. 195-217.

Matthew, V. and Schroeder, A. 2006. The Embedded Librarian Program: faculty and librarians partner to embed personalized library assistance into online courses. *EDUCAUSE Quarterly.* 29(4), pp. 61-65.

Rowlands, I. et al. 2008. The Google generation: the information behaviour of the researcher of the future. *Aslib Proceedings.* 60(4), pp. 290-310.

Scaramozzino, J.M. 2008. An undergraduate science information literacy tutorial in a Web 2.0 world. *Issues in Science and Technology Librarianship,* [Online] 55, Fall 2008. Available at: http://www.istl.org/08-fall/article3.html [Accessed: 25 February 2009].

Shirky, C. 2008. *Here comes everybody: the power of organizing without organizations.* London: Allen Lane.

Weiler, A. 2005. Information-seeking behavior in Generation Y students: motivation, critical thinking, and learning theory. *Journal of Academic Librarianship.* 31(1), pp. 46-53.