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Chapter 4

School Library 2.0: new skills, new knowledge, new futures

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Introduction

Libraries have been an integral part of civilization – providing a ponderous archive of knowledge and lasting record of the human spirit. From Alexandria to the present, a key purpose of libraries has been to store information and be a place of research and learning. Fast forward to the 20th century, when drawing on this heritage we saw the emergence of school libraries positioned right at the centre of learning for our children and young adults.

From such an august heritage, our school libraries have shown their value and purpose many times over, and their successes have been recorded through personal experiences and research studies. There are many school library impact studies (Library Research Service, 2007), the best known being the Colorado Studies, which prove that school libraries have a direct link to student achievement. We know that school libraries make a difference to student learning (International Association of School Librarianship, 2007).

Two elements of a school library have stood the test of time. The first has been to nurture literacy and promote the pleasure of reading. The second has been to provide pathways to information and knowledge by promoting information literacy skills and processes. The point is that school libraries have a distinct function and purpose, both similar to and different from other libraries, which draws on past, present and future possibilities in that

unique school library mix of the literary, cultural, recreational, and research needs of our 'learner' students.

The school library provides an organizational and educational centre for students and teachers striving to meet the demands of modern learning and the requirements of the learning programmes outlined by local authorities or governments. What is it about learning that is changing the scope of the school library's function and purpose? What does it mean to be a teacher librarian, a school librarian or school media specialist in a Web 2.0 world?

The internet is undergoing a transformation. The net is a child in terms of the maturation of information technology, and in its current evolution to the 'semantic web' with its emerging methods of information extraction, concept tracking and semantic analysis of data. Consequently our approaches to information literacy have to change - no question!

Functioning in a Web 2.0 world

Marc Prensky (2006) calls today's students 'digital natives'. Raised with an easy familiarity with video games, e-mail, instant messaging, MySpace and other Web 2.0 social networking habits, they have developed patterns of engagement that are different from those of earlier generations. Educators must recognize these differences and develop school library services that are appropriate in depth and diversity.

Web 2.0 tools are important, but their impact goes much deeper than their networking novelty might suggest. The tools for information seeking and the spaces for information sharing are rapidly changing and developing.

Johnson (2006) considers that there are three critical societal changes that impact on libraries' survival and opportunities to thrive:

- the growing digitization and portability of information
- emerging fundamental changes in the nature and sources of information
- the critical need for new skills for workers in a global economy.

In its 2.0 incarnation, the digitally re-shifted school library must transcend the physical space to bring services and programming to every student and teacher throughout the school, wherever learning takes place in new spaces and places, to prepare our students for the digital world of work.

Challenges and opportunities

Web 2.0 social networking makes participation fast. Our students are living that connection and driving Web 2.0 transformation. It is often teenagers or those in their twenties who create revolutionary new social networking tools such as YouTube, Facebook, WordPress and more. This is confirmed by research reported by Business Week (2007), which indicates that there are significantly more people aged from 12 to 26 years than older groups who are 'creators' 'critics' and 'joiners' - in other words, who publish web pages, write blogs, upload videos to sites like YouTube; who comment on blogs and post ratings and reviews; and who are members of social networking sites like MySpace or Bebo. So we must ask ourselves just how Web 2.0 can support our school's learning and teaching agenda - because if we do not, it threatens to make the difference between teachers and learners more acute than ever.

On the other hand, by embracing a Web 2.0 mindset we just might close the gap. This mindset will include accepting a transition from formal to informal learning spaces; accepting a shift from whole class to personalized learning opportunities; and accepting a change from restrictive and constructed learning activities to creative and extended learning opportunities. In all these instances the learner (Web 2.0 style) is the author of personal creativity, knowledge and understanding.

In other words, flexibility and personalization are at the core of re-purposing information literacy instruction in a Web 2.0 world. If students think about the internet as a virtual locker, backpack, notebook, diary and communication tool, then we must create flexible learning environments that support the use of multiple bibliographic and digital resource tools, including Web 2.0. In such a context our information literacy instruction framework needs to be personalized, real, physical, virtual and even visceral. This is very different. But in a Web 2.0 world our students must be passionate about their personalized learning, and it is the role of school librarians to help make it so.

Smart tools, smart research

The information literacy dilemma starts with the word 'find'. Searching is an essential skill for any generation - but more so for the Google generation. Have you noticed the primacy of Google in the minds of students? Have you been told that libraries don't matter because we have Google? Students

of all ages are heavy Google users, despite the existence of many other and more specialized search engines. 'The disturbing reality is that the internet is replete with out-of-date, conflicting, and inaccurate information. Rumor mills abound, and even trustworthy sites can be slow at updating facts and figures, leaving both "Googler" and "Googlee" exasperated' (Vise, 2005,147).

Valenza (2006) explains that young information seekers do not have the sophisticated skills or understanding needed to navigate complex information environments and to evaluate the information that they find. Students prefer natural language searching. Couple this with difficulties in identifying information needs in environments that require appropriate terminology or vocabulary in search interfaces, and it becomes clear that we have a potentially 'dangerous' problem.

So the first challenge in the Web 2.0 information literacy environment is the matter of search. While we may have considered that we addressed searching successfully - by teaching students to use a range of search engines (including advanced and Boolean searching) and then to analyse the authority of the sites and sources they visit online in order to determine the value of the information found - we really have only just begun.

Working with search software in a school library has become critically important. At the school level there may be a library system, content or learning management system, a system for distributing videos and other multimedia, and more. In all of these the school librarian needs to consider how to develop the library catalogue or information retrieval systems, and how to define the required metadata so that automated capabilities of these systems allow students to easily find the resources they need to support their learning. By reverse-engineering organizational information structures to match the information literacy strategies that support students' information-seeking habits, school librarians can really make a difference and encourage good information literacy habits in their students at the school level.

In a Library 2.0 world it has become essential to work more closely with technology to enhance information retrieval and to look beyond existing structures and forms of information organization. Subject indexes are no longer sufficient in an environment where students expect (rightly or wrongly) to get easy answers to complex questions.

Library systems are notoriously unfriendly, seemingly designed for the expert rather than the user. At the simplest level consider aligning keywords to terms used in subject and knowledge disciplines, and then linking

these key terms as 'non-preferred' or 'See' terms within your library catalogue. In other words, develop your subject indexes to reflect real learning needs unique to your students. Utilize the knowledge expertise of your teachers and the practical usage of your students to enhance your existing taxonomy. You have to do this to align your system to the flexible mindset that is Web 2.0.

Then turn your focus to all areas where information is to be retrieved. Does your school have a recommended thesaurus of terms for information organization in its digital repository or video repository? What metadata does it include? Do you know what you could do to optimize search for files and information across your school's content management system? (Think Knowledge Management here!)

Does your library system import metadata for other sources included in your catalogue, for example web resources, image repositories, learning objects, e-books, audio-books and other content enrichment such as those provided by Syndetic solutions (www.syndetics.com)? When any of these resources are blended into a library information system, school librarians need to consider information literacy requirements for students and adapt indexing options to facilitate information access and information retrieval.

Schools are also providing access to many different digital and online resources, often on a subscription basis. Has your library incorporated 'federated searching' (the ability to simultaneously search multiple data sources) into your library catalogue or information system? Once again, decisions at the institutional level have an impact on the nature of information literacy interactions in your school, and the type of training and personalized learning support that is made available.

The answers to these questions will inform the nature of the structures that you build in your school and school library in order to embrace an information literacy teaching model that represents Web 2.0 search usability and functionality.

Search engines – one model for all?

Mitchell (2007) has reiterated that searching for information is more than just a rules-driven process, and that there is no one correct way to search for information in this diverse Web 2.0 landscape. It is the big picture processes, not the intricacies of a single interface (that could change at any time), that we need to take into consideration.

Our duty as teachers of information literacy is to help develop learners who can adapt both with and as a result of knowledge in each new learning situation. A school librarian need only visit Pandia Powersearch and their 'all-in-one' list of search engines (www.pandia.com/powersearch/index.html) in order to be prompted to develop new ways to help students learn how to incorporate alternative search strategies into their personal information-seeking toolkit - and then work with teachers to integrate deeper understanding about search strategies into the fabric of the learning and teaching experiences in the school.

Better still, school librarians can use their new knowledge of searching, Web 2.0 style, by showing students how to 'roll their own' search from resources they trust using Rollyo (www.rollyo.com) or build their own Google search engine (<http://google.com/coop/cse>) or Yahoo Search builder (<http://builder.search.yahoo.com/m/promo>) for specifically targeted information needs. Teaching students to identify their information need and shape the discovery of information with a Web 2.0 approach empowers the learner, rather than reducing learning to a quick-fix, 'cut and paste' option.

Of course, a school librarian can also adopt these tools to effectively support the information-literate Web 2.0 school community. For example, building a topic search tool or book review finder, and incorporating this tailored search tool right into the school library website or the school library blog, is a proactive information-literate strategy to support the developing information literacy skills of students.

These very simple strategies are the new face of search in Web 2.0 information literacy. They require a shift of thinking from simply developing a search strategy to understanding search engines, and then using the power of Web 2.0 to make your own search strategy come to life. It can then be embedded into another Web 2.0 tool such as a blog or wiki (which may be created for a particular unit of work, or to support a particular requirement for the learning and teaching needs at your school).

As part of the information literacy toolkit, school librarians should also familiarize students with the differences between natural language, visual, clustering or metadata search engines in order to appreciate 'Search 2.0' versus traditional search as explained by Ezzy (2006). Remember to explain to your students about the tools available for searching the deep end of the web for information that can only be found by very specific and direct queries (Turner, 2006; Trinity College, 2007).

Smart tools and smart research will make information literacy search strategies in Library 2.0 an essential learning experience for students. Teach them how to search - but only after you have taught yourself how to improve search functionality within your institution and beyond!

Flexibility, folksonomy and favourites

It's clear that flexibility is a critical component of Library 2.0, and comes in a number of guises. The whole point is to keep students 'on task' engaging with learning, and collaborating with teachers and other learners in the process.

Blogs and wikis provide ideal flexible environments which allow for asynchronous collaboration, and learning in a global context. Synchronous communication is also possible in a learning setting using collaboration tools such as Elluminate, or by embedding communication widgets into wikis and blogs, for instant messaging, or tools like Meebo, Twitter or more. Stephens (2006) describes a wealth of tools and ideas for best practices using Web 2.0 social software. Bradley's conference presentation (2007) provides a neat summary of Library 2.0 possibilities. Richardson (2007) tells about one of the earliest and best school library blogs from Galileo High School in San Francisco, where the librarian uses a 'Li-Blog-ary' to identify resources for classes, update the school community on new offerings, link to online databases and publish student reviews. If you are still not convinced, explore the Blogging Libraries Wiki for more, and see how others have incorporated these ideas. Among them Dr Charles Best Secondary School Library, and Delany Library are excellent examples. Investigate the various widgets that are used to enhance information access and communication options for the students.

What a good 'school librarian 2.0' needs to do is to incorporate Web 2.0 tools into the information dissemination framework while modelling exemplary information literacy strategies for students and teachers. Most school librarians will begin this adventure by starting a book blog, or a project wiki. The Horizon Project (2007) successfully show-cased the collaborative learning potential in these Web 2.0 environments. While the assessment rubrics include information literacy concepts, clear scaffolding of development of information literacy skills and competences is not included. So even such a wonderfully creative project would benefit from Web 2.0 information literacy guidance from the school librarian.

One of the easiest yet most critical areas for Library 2.0 operations is in the field of 'taxonomy' in the new generation version, known as 'folksonomy' and used for social bookmarking and 'tagging' information in shared online spaces. Tags are a means for individuals to organize and describe resources in personally meaningful language and classification schemes. Tagging is a bottom-up, grass-roots phenomenon, in which users classify resources with searchable keywords. The tags are free-form labels chosen by the user, not selected from a controlled vocabulary. For the first time in history, students and teachers can sort and organize information 'naturally' and online, thus organizing and managing information for personal use or with groups of learners. Godwin-Jones (2006) elaborates on tagging and the semantic web (which provides a common framework that allows data to be shared and re-used across application, enterprise, and community boundaries), and in so doing highlights the fact that the tagging process is by no means simply technical - a way of categorizing resources. It also has a strong social dimension, as users of the site find common interests and create online communities.

Show information literacy students how to 'tag' and manage bookmarks with del.icio.us, Furl, Magnolia or others; make annotations on web pages with Clipmarks or Wiz; and use these tools to organize their sources, share their collaborative project information, manage their personal knowledge repository, and tie this information via a widget to their blogs and wikis. In addition to being a popular way of organizing resources, tags enable the formation of unexpected connections with others sharing similar interests. Use tagging for photosharing (Flickr, Photobucket), podcasting (iTunes, Podomatic, Podbean), videosharing (YouTube, TeacherTube), slide sharing (SlideShare, Slidecast), and so on.

The Horizon project (2007) made excellent use of distributed information using tagging, sharing resources across the globe with the tag 'hz07' in the social bookmarking site del.icio.us and video-sharing site YouTube. It was easy for global participants in the project to provide 24/7 support by using this tag. School libraries are also embracing this collaborative method of sharing web resources, with school librarians and teachers establishing social bookmarking as a library service or service to a particular project team or school year group.

What tagging highlights (since it applies to a large range of interfaces) is the need for supporting students with information literacy strategies that

are multi-modal and collaborative in nature - and which embrace the natural language functionality of folksonomy.

RSS that information need

RSS is definitely changing the web, changing our classrooms and changing the information literacy needs of our students. Because students need to access both traditional and emerging sources of information, both formal and informal, RSS needs to be part of their information literacy toolkit and the toolkit of school librarians.

Utilize RSS feeds to assist students to subscribe to journal collections, media sites and other information sources, as well as to your library's blog, book lists, photo collections, videos, podcasts and more. It is essential to provide students with information skills training in how to maximize the use of RSS feeds for information gathering and sharing.

Collaboration is the key. Have your students subscribe to their fellow students' blogs or wikis; or have teachers subscribe to students' work and related sources. However, the power of RSS comes into its own with web-based information aggregators such as Pageflakes, iGoogle, Netvibes or other choices. Web 2.0 educator Will Richardson shares his 'flake' at www.pageflakes.com/weblogged.ashx, which also has an excellent demonstration of this RSS tool for topic aggregation on the Darfur tab. The information is dynamic, constantly updated and shows what's happening in Darfur and in other parts of the world in response. RSS pages of this type can be pretty effective for gathering content, making it easier to make decisions about what to do with that content.

The natural extension of this concept is for libraries to 'mashup' and enrich their OPAC with maps, reviews, jacket images, or folksonomies - though this is not common in school libraries yet. Blyberg (2006) demonstrates the power and flexibility of API programming in creating mashups with his Go-go Google Gadget. At any rate, the development of products for collecting and organizing data continues. For example, Second Brain (your personal internet library), at www.secondbrain.com, allows users to aggregate all their creations, services and favourites, and then share and/or publish them online. Capturing data is easy, and all existing tags, comments and thumbnails are manageable and easily identifiable ones. Second Brain looks at Web 2.0 as a widely distributed desktop, albeit a huge one. What

a significant area of development for school librarians - a personal library, resource and research space for each student.

School librarians can use RSS to deliver professional learning programmes, as well as news and information. The thing about RSS is that it goes both ways - providing school librarians (and students) with a Web 2.0 tool with almost limitless opportunities for blending knowledge and information sources, organizing them, and having them ready for the rich learning tasks as set out by the teacher or school librarian.

Build your support for information literacy programmes

Of course, in order to promote an information-literate school community, school librarians (in a Web 2.0 world) need to develop online tutorials, videos (for YouTube for example), audio podcasts, slideshows and more, so that students will have access to these as part of their personalized skill-development toolkit. Even a small school library can create a free Group space in TeacherTube, or embed a podbean audio compilation into a library blog (also hosted free on edublogs or blogger).

School librarians also need to create social networking spaces as virtual learning and collaboration spaces. School librarians are active members of many online spaces, such as Facebook, Ning or Twitter. Librarians and their professional associations are embracing the possibilities, as demonstrated by the School Library Learning 2.0 project of the California School Library Association. These and other social networking sites provide the ideal way to create a learning community, for a few or many engaged in a rich learning task, where they can share and collaborate with ease 24/7.

The Web 2.0 options are fun, engaging - and most certainly extend the range of information literacy instruction needs we have to meet for our net-savvy students. So, school librarians, in collaboration with teachers, need to ensure that they are facilitating information literacy programmes in this 2.0 environment that allow them to learn independently and in ways that allow students to engage with expert guides and mentors in order to have their information literacy needs addressed. Students need the support of *guided enquiry* - the intervention of an instructional team of school librarians and teachers to guide students through curriculum-based enquiry units that build deep knowledge and deep understanding of a curriculum topic, and gradually lead towards independent learning (Kuhlthau and Todd, 2007).

What does Web 2.0 really mean for school libraries? As we create conversations, connections and a Web 2.0 learning community, we are opening the door to a better school library future - one that embraces the digital identity of our students and their multi-modal minds. We need to look for new ways of working with literacy, information literacy and digital fluency. School libraries need to embrace Web 2.0 and change the focus and purpose of information services. In so doing, our new learning communities will be able to get involved in responsive academic discourse and new processes and products will emerge, leading to new forms of digital scholarship and personalized learning.

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Helpful resources

- Blogging Libraries Wiki: School libraries
www.blogwithoutalibrary.net/links/index.php?title=School_libraries.
- HeyJude, <http://heyjude.wordpress.com>.
- Judy's Library 2.0 del.icio.us collection, <http://del.icio.us/heyjude/Library2.0>.
- Library 2.0 Matrix, www.flickr.com/photos/heyjude/230640507.
- School Library Learning 2.0, <http://schoollibrarylearning2.blogspot.com>.
- Teacher Librarian Network, <http://teacherlibrarian.ning.com>.
- Teacher Librarian Wiki, <http://teacherlibrarianwiki.pbwiki.com>.