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EXPLORING SCHOOL LIBRARY 2.0 TOOLS IN AN ELEMENTARY SETTING

BY

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"Exploring School Library 2.0 Tools in an Elementary Setting"

Submitted by Dorothy M. Cousins

In Partial Fulfillment of The Requirements for the Degree of Master of Education

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## Introduction

I began working as a teacher-librarian in 1980 when, in my district, computers in school libraries were invisible. In those days we concentrated on building useful print collections for recreational reading and curriculum-based research and implementing constructivist approaches through team teaching. When computers were introduced into elementary school libraries, I used them to streamline catalog card production and then to help students with word processing. In 1993 I began my first forays into using computers connected to the Internet, and discovered the ease of email, the confusion of Gopher searches, and the huge professional development benefit of becoming part of the LM\_NET listserv community. Little did I know what was still to come.

Shortly after I began these explorations Netscape and the World Wide Web emerged, and gradually a new world of information unfolded. Over time, a variety of Internet browsers were introduced and then, as more and more information became available, search engines such as Dogpile helped students find information. Internet-connected computers appeared in schools and classrooms. The introduction of the Google search engine presented many new sources of information. As an elementary teacher-librarian I taught my students to access both print and digital information resources and to evaluate both sources. I became passionately hooked on using technology in the library.

As well as using technology to find information, my students used computers to share it through word processors, PowerPoints and graphical organizers such as Inspiration. In partnership with the school staff, I developed webquests and webpages. I saw the communication possibilities of the Internet so my students participated in the International Read-In where they shared discussions of their favourite books by email, chatted with other students around the world and participated in online conversations with children's authors.

My school library led the district in introducing first a computer-based catalog and then an Internet-available OPAC (Online Public Access Catalog). Throughout the school, I promoted the integration of technology and information literacy skills. Philosophically, the aim of developing critical thinking and higher order research and communication skills drove resource-based learning and information literacy collaboration between teacher-librarian and teachers.

While writing a paper on distance learning in 2005, I was intrigued by Dede's (2004) description of digital distributed learning communities and Loertscher's (2003) vision of the school library as primary information system and the digital hub of the school virtual community. I continued hearing bits of information about a new web and its application to public libraries. I did not hear or read much related to school libraries until Harris (2006d, para. 1) started the conversation in May 2006 declaring: "Say goodbye to your mother's school library." Shortly after publication of this piece, I began the task of exploring these Web 2.0 tools, and I discovered information, ideas and student-created content popping up everywhere. The *School Library Journal* Summit held in November of 2006 represented a turning point: proponents of School Library 2.0 gathered together in Chicago, and the movement took on a more unified direction. Now, I see and read daily about new productivity tools and about breakthroughs in the ways these applications are used in school libraries. I began to want to learn more about Web 2.0, about how the tools are used in Library 2.0, and about whether School Library 2.0 applications are suitable for an elementary library.

I see technology as another way of reaching students not responding to traditional instruction, and I like that these tools are about conversations, connections and community (Stephens, 2006b), but I wondered if School Library 2.0 is just a renaming of basic school library services. Are these 'flash-in-the-pan' technologies, of interest only to techies, but impractical in a school setting? In particular, can my elementary students use these tools to find and share information? Do my students need familiarity with these tools to keep abreast of the information-seeking and communication styles of their peers? In practical terms, as dropping school populations and shrinking school budgets restrict access to the physical space of the school library, will training the students in the use of these tools stimulate interest in reading and research? This paper attempts to explore these questions through some snapshots captured in ongoing discussions from the first half of 2007.

Early on, I discovered a lack of published research directly examining the effect of School Library 2.0 tools on teaching and learning, probably because school use is so recent. Although there are earlier papers examining the effects of technology, I was uncertain that the conclusions applied to this new wave of tools. I found many writers

lamented the lack of available, but sorely needed, research (Large, 2006; Maness, 2006; Valenza, 2006a). The newness of these technologies means only very recent sources can be considered.

The dearth of observations in journals or more traditional academic literature is equaled by the plethora of professional commentary found online in the technologies themselves--blogs, wikis, and podcasts. Using these sources, though, raises the question of what constitutes academic publishing, since often professional articles now appear as user-driven discussions on blogs (Blyberg, 2006; Kroski, 2006; New Media Consortium & the Educause Learning Initiative, 2007). I wondered how this development influences the research we expect from our students. Several writers (see, for example, Kling, 2005; Lawley, 2004; Thomas, 2007) have commented that, with the opportunity for immediate feedback, researchers are ignoring recognized journals and publishing online, where the ensuing scholarly debate and reflection are like a user-driven collaborative peer review (New Media Consortium & the Educause Learning Initiative, 2007; Van House, 2004). One group, the New Media Consortium, creates *Del.icio.us* tags for their reports and encourages readers to add to this collection and an accompanying wiki.

As I collected information for this paper, I found myself using a different set of standards for determining authority. It seems to me that these new tools are changing the research process and making it more important than ever for students to be ethical when evaluating and using information.

### **Definitions**

Since Web 2.0 tools may be new to some teacher-librarians, a list of definitions is in order. There are many definitions or interpretations of these tools or applications, but for this paper I have drawn on those developed through the deliberations of the 2006 Slj Summit. The Slj Summit is an annual meeting of school library leaders in the United States, sponsored by the publisher of *School Library Journal*.

*Web 2.0*: "Web 2.0 is referred to as the 'read/write' Web, where users are both consumers and producers of information. Unlike previous websites that were focused on information interactions between the website and a single viewer, Web 2.0 is centered on human-to-

human conversations and data sharing. It also incorporates the shift to Web as computing platform—the use of Web-based applications in place of commercially produced software” (Slj summit | The Glossary, 2006, para. 15).

*Blogs*: “Short for weblog, blogs are websites that use special software that provides us with four key capabilities: 1) blogs can be regularly and easily updated using a word processing like form, 2) content is displayed in reverse chronological order so new updates can be easily found, 3) blog posts are *tagged* with informal subject headings so like content can be viewed, and 4) comments allow blogs to move from a one-to-many conversation (author to blog readers) into a many-to-many conversation (blog readers to blog readers) format” (Slj summit | The Glossary, 2006, para. 2).

*RSS*: “While you will see different expansions of the acronym (rich site summary or real simple syndication) it is more important to know what it is and how to use it. RSS is an Internet utility that brings updates from a webpage directly to your computer. These updates are referred to as a site’s *feed*, and are displayed by a feed reader also known as an aggregator. RSS feeds are most commonly associated with blogs, but can be found on many other types of websites as well. For example, some libraries may provide RSS feeds of new books as a way to keep patrons updated” (Slj summit | The Glossary, 2006, para. 13).

*Wikis*: “Hawaiian for ‘quick’ this tool provides a webspace that can be edited by multiple users” (Slj summit | The Glossary, 2006, para. 16).

*Podcasts*: According to Warlick’s CoLearners (n.d.) podcasting is essentially “somebody records audio information, saves the information as an MP3 file & uploads it to the Internet, and people listen to the audio program using some audio player, either computer-based or a portable media player” (para. 4). The Slj summit | The Glossary (2006) adds to the definition: “video in the case of vodcasting-over the Web using *RSS* feeds. Podcasts are often described as a web radio broadcast” (para. 12).



*Social Networking Tools* - Writers for the Young Adult Services Library Association [YASLA] (2007) define social networking technologies as “software that enables people to connect, collaborate and form virtual communities via the computer and/or Internet” (p. 2). Definitions of some current social networking tools are provided here:

*Tagging, folksonomies, tag clouds:* Tagging, folksonomies and tag clouds are all organizational tools that make information easy to find because they “are simple and informal subject keywords normally applied to an online resource” (Harris, 2006f, para. 2). A tag is described as “a keyword or descriptor users choose to assign to an object to increase its findability. . . . While formal, controlled-vocabulary subject headings may be more precise, tags tend to be more ‘right’ for users” (Slj summit |The Glossary, 2006, para. 14), rather than the more formal taxonomies (Sears/Library of Congress) teacher-librarians know. According to Stephens (2006b) a folksonomy “signifies a set of keywords or tags assigned not by librarians or knowledge workers but by everyday people, tagging their own content online” (p.13) and a tag cloud is “a graphical representation of tags and the number of uses of each tag for a blog, *Flickr* site, or other Web 2.0 interface” (p.14). Usually the most popular tagged content shows up with a larger, bolder font (Rainie, 2007).

*Del.icio.us or other social bookmarking sites:* Social bookmarking sites group and share tags, and a simple search locates related content (Richardson, 2007b). *Del.icio.us* is well known but *Ma.gnolia.com*, another social bookmarking site permits the teacher-librarian to create a group, and control access allowing only invited students, who can view resources and add links.

*Technorati:* *Technorati* is a searchable database of blogs that gives bloggers the ability to tag content for easy access by others (YASLA, 2007, p.7).

*MySpace and FaceBook:* *MySpace* and *FaceBook* are social networking sites that encourage people to gather together and communicate through online communities. *FaceBook* was originally formed for college students only, and although it is now encouraging younger users many school youth have an online presence in *MySpace*. Habib (2006) explains “these sites are based on the premise that each user gets their own personal space where they can create a personal profile and connect with all of their friends in the community . . . [and] to their friends’ friends” (p. 14).

*Flickr or photo sharing sites:* Flickr and other free photo sharing websites allow users to post and tag photos making them easily searchable.

*Streaming media:* Streaming media, as defined by *Wikipedia* on April 11, 2007 “is multimedia that is continuously received by, and normally displayed to, the end-user whilst it is being delivered by the provider. The name refers to the delivery method of the medium rather than to the medium itself.”

*YouTube or video sharing sites:* Video sharing sites like *YouTube* operate in the same manner as the photo sharing sites. Users upload their video clips, tag them, and then share them with the online community.

*IM or instant messaging:* IM or instant messaging is “real-time, synchronous conversation between two people via the Internet” (Stephens, 2006b, p. 45). Abram and Luther (2004) note these conversations can include up to twenty people. Conversations may be private or involve the whole group (Abram, 2004).

*SMS or short message system or simple machine messaging:* SMS are text messages sent from cell phones.

*LibraryThing:* *LibraryThing*'s function is “to allow users to catalog their personal libraries by downloading MARC records from the Library of Congress and applying tags to categorize the books” (Harris, 2006d, para. 13).

*Web-based applications:* Web-based tools reside on the Internet, rather than the user's own computer, and are accessed through Internet browsers. Users don't have to be concerned about version compatibility or updates because these are handled at the application's site. Stored documents can be used from any computer at any time, without worry about platform type. There are no virus problems with downloading these files. Examples of this type of free tool are *Google Docs*, *Zoho Writer* (word processors) and *Google Spreadsheets*. *Google Notebook* is a web-based application for saving notes from lectures, research etc.

*Webinars:* Webinars, defined by *Wikipedia* on April 12, 2007 are web-based seminars, types of web conferences that are interactive between the presenter and the audience and are conducted in real-time and archived.

## Literature Review

### *Background*

Prensky (2005b) labels today's school children as digital natives because they have always lived with digital technology, but older adults he classes as digital immigrants. School librarians can serve as "Digital Homesteaders, aka the pioneering settlers; the interpreters/adapters bridging the gaps between Digital Natives and Digital Immigrants" (Sljsummit | The Media Center in the Information-Rich World, 2006, para. 11). Williams, Grimble and Irwin (2004) confirm that teachers find the Internet speedy but distrust the information found, so Jukes and Dosaj (2006) suggest teachers learn Web 2.0 tools and explore their value with students who are already using virtual spaces for instant access to chats, gaming, communicating and publishing. Today, rather than just consuming multimedia literacy resources, teachers and children are creating them, in virtual communities, both as a result of changes in technology and as a result of movement from a behavioural approach to a constructivist one (Brown, Bryan & Brown, 2005).

The nontext characteristics of School Library 2.0 tools support the learning behaviours suggested by the work of Benjamin Bloom on learning styles and Howard Gardner on multiple intelligences (Abram & Luther, 2004). Jukes and Dosaj (2006) feel the interactivity of Web 2.0 makes learning more personal and relevant. Utecht (2007) takes a re-working of Bloom's taxonomy and applies it directly to Web 2.0 tools, noting that students are enthusiastically using it at the highest level as they design videos for *YouTube*, write profiles for *MySpace*, and post articles on *Wikipedia*. Advocates of virtual libraries, such as Valenza (2006c), point out that the social interaction from using these tools for information-seeking matches the constructivist view of learning. Blogging, in particular, allows for the scaffolding of student writing.

### *Access*

Researchers tracking the effect of home Internet access on low income children observed that with more access the children had higher scores on standardized tests and higher grade point averages (Jackson, Von Eye, Biocca, Barbatsis, Zhao & Fitzgerald, 2006). Many writers (Jenkins, Clinton, Purushotma, Robinson, & Weigel, n.d.; Sljsummit

| Notes from the Information-Rich group, 2006; Stephens, 2006e) describe the difficulties with Internet access and the resulting digital divide that may present as no or limited access to a computer, or lack of access to an Internet connection, especially broadband, and that may result from economic difficulties, parent's education (DeBell & Chapman, 2006) or the lack of resources in rural areas. As well, classroom or school rules--or school district filters--may deny access to certain websites (Arafeh, Levin, Rainie & Lenhart, 2002). Bull and Ferster (2005) suggest that the use of web-based applications will solve some problems because the software will be free and accessible to all with an Internet connection.

### *Children and the Web*

Canadian researchers found that 94% of young Canadians (grades 4-11) access the Internet from home, despite pockets with no access because of poverty or limited connectivity in rural communities (Media Awareness Network, 2007). The Canadian researchers found that many students have their own Internet-accessible personal computers, Internet-capable cell phones, digital cameras, and personal webcams. Gaming and instant messaging are favourite online activities of Canadian youth. Of special interest to this writer, 14% of the Canadian students surveyed write a blog (Media Awareness Network). By grade eight, many young people (78%) download and listen to music, television shows and movies.

Although many American studies note concerns with Internet access, DeBell and Chapman's (2006) American study, looking at younger children, found that a large number of these children use computers, and that they are one of the fastest growing groups online (Grunwald Associates, 2003). DeBell and Chapman's research showed nursery school children primarily played games, and those in grades one through five used the computer for completing school assignments as often as for playing games. Primary age students are socially active on the Net emailing and instant messaging their friends (Prensky, 2005a).

According to Media Awareness Network researchers (2007) household rules regarding Internet usage successfully guide children away from offensive and age-inappropriate sites, as does parental supervision. Online activities were not necessarily

solitary as many used the Internet with social groups of friends or siblings, and described the interaction as a positive experience. Canadian children in grades four to six are especially interested in learning how to protect their privacy (Steeves, 2005), which is particularly important as they access commercial sites that attempt to collect personal information.

### *Information-seeking Behaviour*

Students seeking information generally rely on the Internet (Media Awareness Network, 2007) and search engines (Combes, 2006b) for results, and although young people recognize the need to judge the accuracy of Internet information they are confident that their results are satisfactory. However, the behaviour of young people indicates they often are confused by so much information (Agosto, 2002; Branch, 2003). Although children express confidence in their abilities to use the Internet well, they actually appear to need instruction in information-seeking strategies (often termed ‘information literacy’).

Loertscher and Woolls (1997) define information literacy as “the library media version of constructivism and critical thinking” (p. 344). Despite children’s apparent facility with using the Web it is important for students “to use critical thinking to define, access, manage, integrate, evaluate, create, and communicate information in a technological environment” (Lorenzo & Dziuban, 2006, p. 11). Students should learn the value of giving proper credit for the information they find (Windham, 2006), and they need the citation skills to do so. Windham points out youth require these skills to evaluate information for homework projects, but also as life skills when dealing with friends on social networking sites, such as *MySpace*, and music and video download sites. Equally important are new media literacies which involve the social skills of collaboration and networking (Jenkins et al., n.d.).

### *What is Web 2.0?*

Web 2.0, sometimes referred to as the ‘participatory’ or ‘socially interactive’ web, is collaborative and characterized by open access, open source and open content. O’Reilly (2005), an Internet marketing guru, generally credited with inventing the term

*Web 2.0* talks about “harnessing the collective intelligence” (p. 2) of everyone who uses a product, in the form of feedback, user reviews, and user-crafted social networks. These tools, which Abram (2006) predicts will replace desktop applications, exist now because of the number of personal digital devices people carry everywhere and because of fast and easily available wired and wireless connections.

Stephens (2006b) and Maness (2006), referring to Library 2.0 in public libraries and Harris (2006d) referring to School Library 2.0 in school libraries describe Web 2.0 in terms of providing collaboration, connections, conversation, community, communication and content on the Internet. However, Crawford (2006) and Farkas (2006) feel strongly that we should be avoiding labels, and concentrating on services. School Library 2.0 offers traditional services, to every user, in new, easier and more productive ways (Harris, 2007b; Lackie, 2006), but regular user feedback and evaluation are necessary (Casey & Savastinuk, 2006). Several writers (Combes, 2006a; Harris, 2006a; Valenza, 2006a) express concerns that the school library needs to continue to be viewed as the home of literacy initiatives and constructivist, group-oriented information literacy learning.

### *The Tools*

Possible partnerships between the school library and the classroom include: blogging, reading RSS feeds, social bookmarking and building wikis (Lackie, 2006). These tools are accessible anytime and from anywhere there is an Internet connection.

*Blogs:* Very recently, there were not any school library blogs (Clyde, 2004), but now they appear as one of the most readily adopted School Library 2.0 tools. Blogs are easy to construct because no technical skills are needed (Valenza, 2005/2006). In our district and through readings on teacher-librarian listservs, I have discovered that some webpages get constructed and then never put on the Net because of difficulties in accessing servers or in getting technical personnel to assist with posting, but since students are working directly online with Web 2.0 tools, postings are made quickly and no one deals with network servers (Stephens, 2006b). Blogs are particularly suited to hosting booktalks by the teacher-librarian or students, book reviews of new acquisitions

and book discussions including literature circles (Harris, 2006, 2006d; Valenza, 2005/2006, 2007). Such blogs are written commentaries, allowing conversation through the comment function, and may feature embedded podcasts or videos. Through blogs some children's and young adult authors carry on a dialogue with their readers. Blogs are an effective way to motivate student writing and communication. Many blog readers responded to Ahlness' (2007) suggestion children occasionally read their own blogs, or those written by other children in sustained silent reading time. Blogs are also instructional tools where explanations and on-demand streaming videos act as online help guides for library orientations, database tutorials, or lessons on constructing effective Google searches (Harris, 2006c; Valenza, 2007). Blogs need readers, and authors usually appreciate comments back (Harris, 2006d), so they should be publicized (Clyde, 2004), and perhaps featured on the school library webpage. Clyde points out that once a blog is set up it, should be posted to regularly to maintain a readership. (See Appendix A for examples of outstanding blogs, and Appendix B for blogs created by BC teacher-librarians).

*RSS:* Blogs can be read through an Internet address which has to be checked each time to see if there is a new posting, or through an RSS reader which efficiently delivers each new posting (text or multimedia), or an accumulation of them from several different sites (Richardson, 2006; Stephens, 2006b). In Clyde's (2004) study of libraries with weblogs she pointed out that any blog without an RSS feed will not thrive unless it has a loyal following.

*Wikis:* Wikis are basic non-flashy webpages, easily created by anyone with minimal computer skills. Wikis can be public or private and may need a password. Stephens (2006b) stresses the importance of monitoring the wiki and quickly correcting any problems, or the webpage can disintegrate into an editing/altering/correcting free-for-all. Two currently popular wiki models are *pbwiki* and *wikispaces* (Dembo, 2007b). As with blogs, wikis are an excellent vehicle for online book discussions and book talks (Harris, 2006d). They appeal to constructivist educators because they are well suited to scaffolded collaborative projects, such as science classes from different locales

comparing water quality or weather, or a networked, group writing project where all participants can easily contribute and edit (Stephens, 2006c; Valenza, 2005/2006, 2006c).

Teacher-librarians and teachers use wikis for collegial brainstorming and cooperative lesson planning (Hauser, 2007), as well as collaboratively maintaining reading lists. The versatility of wikis makes them especially useful as professional development websites. They can be used as workshop webpages, planning tools for policy and staff meetings (Valenza, 2006b), discussion sites for professional book clubs, or host lists of similarly themed hotlinks. As webpages for conferences they can be used to detail transportation and accommodation information, give access to readily updated schedules and sessions, and offer a venue for networking, relationship-building and reflections from conference attendees (Hauser, 2007; Suter, Alexander & Kaplan, 2005). Suter et al. note that conference presenters can post lists of recommended readings, and after the conference add links to their handouts and presentations, while participants live-blog (right at the time, right from the venue) reports of sessions and their impressions of them. An added bonus is that the wiki becomes a dynamic archive because changes are made whenever necessary by whoever has access. With caution, they can be effective political action and advocacy sites for teacher-librarians, allowing a free voice to both professionals and the public, but they do need monitoring for issues of harassment and bullying.

*Podcasts:* Hauser (2007) offers a variety of “ideas for student podcasts: interview visiting authors, teachers, and other students; record morning announcements; practice foreign languages; record their own stories or poems; record comments during field trips; discuss topics taught in class” (Podcasts section, para. 4). One notable blog with podcasts and vodcasts titled, *Voices from the Inglenook*, features primary age children reviewing their favourite stories. Their faces are hidden, but their voices are proud as they pretend to be Oliver, the library cat, or some of his friends. On the American Association of School Librarian’s [AASL] (2006) blog a similar suggestion calls for recording the principal, teachers or selected students reading from a favourite book.



*Social Network Tools:* These Web 2.0 sites are free, interactive, participatory, and considered the next generation of the Internet. Tags and folksonomies, in particular, are changing the way information is used and organized (Rainie, 2007; Richardson. 2007b). Rainie reported that 28% of Internet users have tagged or categorized content online. Tagging allows groups to form around similar interests, so for this paper I used and searched in *Del.icio.us* for material under the tag 'SL2.0'.

Public libraries have designed *MySpace* pages announcing library events. Although some jurisdictions are banning these sites from school networks, establishing a presence situates the school library where students will notice it.

One recently introduced social networking site, *Ning*, is attracting attention as an online gathering spot for educators who can form themselves into different groups, including teacher-librarians. Part of the appeal may be that each group can remain private (not available through searches), and membership can be by invitation only (Dembo, 2007a). Dembo notes "since it [*Ning*] can bring in video from a variety of sources, blog posts, RSS feeds and any other embed-able code, it would make a great place for a class homepage" (para. 3).

Public libraries are creating pages of photos with their library name as one of the tags, forming collaborative scrapbooks and embedding *Flickr* slide shows in library blogs (Stephens, 2006b). Schools though need to be aware of privacy provisions for some of their students before adopting this tool. *Flickr* uses tag clouds to highlight the most popular listings. *Flickr* is a useful site for copyright-free photos, but unfortunately from an elementary perspective some pictures are inappropriate for young children.

Streaming media such as the video sharing website *YouTube* mean "anyone with a basic video camera and a high-speed connection can create, edit, upload, and share video with ease" (O'Neal, 2006, para. 2). Class presentations can be recorded and students or their parents can watch the video, or listen to the audio online at the school website, or download it to their digital media player (Stephens, 2006e), although again schools need to be mindful of privacy regulations in their area. Media streaming, downloaded to cell phones or digital media players, can be used during field trips and for conducting tours of museums or art galleries (New Media Consortium & the Educause Learning Initiative, 2007). The same group suggests trying out *Machinima*, filmmaking using virtual world

settings and avatar actors, appealing to elementary students and stimulating many storytelling ideas. Only caution here would be safety concerns regarding other virtual participants. O'Neal reminds that students need to use critical thinking skills when viewing video on the Internet, questioning if what is shown is a true representation of the event, and also if the clips violate copyright regulations, especially at the *YouTube* site. Another worry is the unfiltered and unmoderated nature of these sites (O'Neal, 2006). Concerns such as these present opportunities for class discussions about appropriate content--both what students post and what they view.

A moderated video-sharing site introduced in January 2007, *TeacherTube* has become very popular with educators posting videos and tagging them for sharing with other school sites.

Stephens (2006b) states younger users practice Internet Messaging, so library use is particularly appealing to them, especially as IM works on computers, smartphones or personal digital assistants. Abram (2004) notes IM connects virtual classrooms and conferencing facilities, and asserts that IMing requires good literacy skills, especially for the special user-developed language of IM. Instant Messaging is currently used in public libraries for Virtual Reference, such as British Columbia's *Askaway* programme, and could be applied to school libraries if there were sufficient staff to maintain the connection. Teacher-librarians can choose when to have IM operating (Abram), for example, hosting specific homework help times. Some schools ban cell phone use, but they could be used by the teacher-librarian for short quick answers to reference questions. SMS messages can update traditional blogs from the creator's cell phone. Stephens (2006d) has suggested that conference goers could receive updates and alerts as SMS messages on their cell phones.

Harris (2006d) envisions *LibraryThing* functioning in school IPACs with users creating a free online catalogue of books while adding notes and descriptions (Richardson, 2007b). The library becomes a social network because someone browsing *LibraryThing* can search collections worldwide simply by using tags (Maness, 2006).

Web-based applications (including word processors and spreadsheets) are useful for elementary student work where several children are working on a document at one time (Dembo, 2007b; New Media Consortium & Educause Learning Initiative, 2007),

and integrate well with other Web 2.0 applications. Teachers can check on which student is really doing the editing (Valenza, 2005/2006). A bonus is that students can't lose their homework using these applications. With *Google Notebook* student researchers can capture text and save it. The text can be linked back to the source document so the teacher can track the student's research. As Harris (2006g) says it becomes a 'notes' book. Although unlikely a problem with student projects, security may be an issue with sensitive files (eSchool News Staff, 2006).

### *SOPACs*

From reading throughout the professional literature about possibilities for School Library 2.0, it appears that changes to OPACs (Online Public Access Catalogs) and IPACs (Internet Public Access Catalogs) are the most desired innovation (Chen, 2007; Harris, 2007a). Most suggestions centre on making the online catalog more open, personalized, and user friendly (Maness, 2006), so the term SOPAC for Social Online Public Access Catalog is commonly used. Advocates claim librarians and users want to add book excerpts, their own descriptions of library items, comments, reviews, user ratings, subject headings and tags, and links to these lists of tags in social bookmarking sites (Chen, 2007; Maness, 2006; Reimer, 2006). Habib (2006) includes a suggestion for integrating lists of what each class is using into the catalog system. Henry (2007), in addition to the above, wishes to be able to search the table of contents and the index and dreams of having a full text search where the user really looks inside the book, as well as a section noting "people who checked out this book, also checked out these other books" (Ahhhh!! The dreams go on section). Many of these options are already available on *Amazon.com* (Chad & Miller, 2005).

In January 2007, Blyberg announced the launch of the Ann Arbor District Library's version of a SOPAC, which meets some social networking criteria allowing users "to rate, review, comment-on, and tag items" (para. 3).

Harris (2007c) working on a similar open source project in the school library field will "provide local and union catalog access enhanced with tags, book reviews, podcasts, streaming video, social bookmarking, and much more" (para. 9). For now, he is concentrating on improving search capabilities by providing "relevancy-ranked

responses” and “a series of dynamic webpages--one for each ISBN as well as pages for authors, illustrators, subjects, etc” (Harris, 2007a, para. 9). Harris also posts images of book covers on the initial results page, and integrates book reviews and links to “other searches and resources” (Harris, 2007a, para. 10). A question that remains is whether libraries can use multimedia resources which they do not own within these systems (Lippincott, 2005).

Chad and Miller (2005) predict in the future the ILS (Integrated Library System) application will operate in the web browser, connecting “the components together and, unlike traditional desktop applications, there is no need to buy and install hardware, operating systems, databases and application servers” (p. 7). They also muse that collections in other nearby libraries or bookstores might be displayed along with results in the searched library. *OCLC* already offers the nearby libraries option to member libraries in their *WorldCat* application (Nilges, 2006), and hope to allow “anyone using *Open WorldCat* to contribute and share tables of contents, notes and reviews” (para. 3). These suggested changes make the library catalog easier to search by any student looking for information for a research assignment.

### *Hardware*

The convenience and ubiquitousness of small portable computing devices--laptops, personal digital assistants, digital media players and smartphones--mean information is just a click away and this change is influencing the development of Web 2.0 tools. An intriguing and much needed innovation for the future will be projection systems for cell phones (Greene, 2006; New Media Consortium & the Educause Learning Initiative, 2007), allowing students and teachers to display information on these devices easily.

Some educators report concerns about allowing iPods and other MP3 players into schools (Prensky, 2005c; Stephens, 2006e). Others, such as Stephens (2006a), argue these devices should be allowed except during lectures or tests. As more of the school library collection becomes digitized, teacher-librarians will be using e-books and books downloaded as podcasts. Public libraries are lending out portable devices with audible books already downloaded, and there are indications some school libraries are following

this practice too (Brisco, 2006). Brisco (personal communication, February 24, 2007) predicts her summer reading programme will consist of downloadable MP3 titles accessible from her school library website. School libraries may also find themselves lending such items as laptops and digital cameras (Valenza, 2005/2006).

### *Concerns*

Needless to say these advances in technology bring a multitude of concerns to educators, educational administrators and parents. School Library 2.0 tools are interactive Internet sites designed to promote community, but adults worry about child predators, cyberbullying and offensive content (Harris, 2006e; Steeves, 2005).

Children use these types of web sites outside of school and they offer many educational opportunities (Sljsummit | Trust\_respect opportunities, 2006; Stephens, 2006f)), so we must provide youth with instruction on using the Internet safely and responsibly (Windham, 2006). Students should learn how to authenticate information on the web, to question if it is opinion or fact, and to make good choices about sites they visit. If taught at an early age about ethical behaviour, then perhaps students can be trusted to make good decisions when they are more independent (Pedersen, 2007). Parents, teacher-librarians and teachers need to accept their responsibility to make sure students have these tools, and sufficient supervision.

Students learning to use these School Library 2.0 tools also should learn how to protect their own privacy and to think about boundaries and expectations (YASLA, 2007). In a school setting, this may mean that teachers and teacher-librarians may need to be moderating posts to blogs and websites and watching what students upload to these sites (Harris, 2006h). Some commentators suggest the use of filters but generally teacher-librarians feel they do not work. Instructions on how to disable school filters are posted on the Internet for all to see. With these and more changes in technology school districts need to ensure that Acceptable Use Policies cover Web 2.0 applications (Johnson, 2007).

The Media Awareness Network (2007) researchers found in their Canadian study, that more than half (59%) of the young people surveyed have adopted different identities and lied about their age online. Steeves (2005) reported that Canadian children preferred using IM (Internet Messaging) because then they controlled who they interacted with

online. Many of the games the children visited are advertising sites geared to marketing, although 18% of grade four students were unaware of this commercialism.

Today's children, and especially teenagers (Nussbaum, 2007), may not share adults' concerns about the Web. As wired social kids they freely share photographs, personal information and tidbits from their private lives (Steeves, 2005), and when challenged about these practices, they respond that they feel this is an exciting part of being young in the twenty-first century.

Not all teacher-librarians are interested in these technologies, wishing to stay with literature-based activities or information-seeking that is print based. They worry that if resources are concentrated on new tools, old services will be neglected (Crawford, 2006). However, if teacher-librarians interested in these tools offer workshops and write about their experiences others may "trust kids to use social networking appropriately" (Sljsummit | Trust\_respect opportunities, 2006, para. 6) and "trust teachers and librarians to monitor student use of social networking sites" (para. 7).

### **What's Next?**

After completing the readings for this paper I see many ways in which School Library 2.0 tools can be applied to the organization and management of the elementary school library, to educational collaborations with staff and students, and to professional development, personally and with my peers. My interest in technology makes it easy for me to see possibilities for these tools, but I think it is important for all teacher-librarians to at least develop an awareness of these technologies if they want to maintain credibility with their students, staff and the community.

#### *Library Applications*

I feel it is important for schools to make these new technologies available or children who are disadvantaged with access, also become disadvantaged with knowledge and experience. By using web-based technologies for assignments and research, students can access a digital workspace in any format, on any platform, from school, the public library or a friend's house.

Although Breeding (2006) acknowledges that some school libraries have not

achieved the Web 1.0 capacity to construct and maintain websites and to get their IPACs online, other schools offer customized websites, specialized search engines, access to the IPAC, links to other libraries, databases, pathfinders for major research projects, references and general library and school information through multipaged library webpages. These new tools allow for interactive user-friendly online help, and students can get assistance wherever they are at anytime. If students need further help, they can IM (Instant Message) the teacher-librarian for virtual reference help or arrange for further teaching. Understanding is checked with interactive quizzes. Farmer (2005) suggests in the future the teacher-librarian may access the student's search path, and suggest alternate strategies. Online calendars accessible on the web from any place are used to book both the teacher-librarian's time and the physical library space. Valenza (2006c) feels because our students are online continuously we need to make school libraries available in the same environment.

Teacher-librarians could use *LibraryThing* for cataloging their booktalks, as well as classifying books by non-standard classification systems. Harris (2006b) suggests students or teachers browse *LibraryThing* creating consideration lists for the teacher-librarian, as a form of collaborative collection development.

A blog can act as a dynamic online library newsboard updating the school population on library events, assignment alerts, announcements, reader's advisories on certain themes, author visits and include photographs of student activities in the library. The teacher-librarian, in collaboration with other teachers, could digitally record class discussions, band concerts, PAC meetings and interesting lessons, as well as inservice sessions and professional development workshops for replay to missing participants. Library services and programmes such as storytime and bookclubs could be advertised via podcasts (Stephens, 2007). Art teachers can post outstanding exhibitions of student art, and music teachers can showcase student's original music. Through these tools members of the community, parents, staff and administrators are informed of what's happening in the library.

I think some of the most exciting possibilities involve innovations to the library catalogue. Adding favourites' lists, cataloguing tags, book reviews, comments, ratings and recommendations make it easier for children to choose books that appeal to them

personally. Responsible students (Harris, 2006d) can manage embedded blogs and podcasts of book discussions or booktalks with both children and adult participants. I believe students will use and enjoy these recommendations; after all they love to pick books off the return book cart, reading what others in the group have already read.

### *Classroom Applications*

Elementary schools can easily utilize these tools because of their simplicity and 24/7 access from anywhere with an Internet connection. Blogging, building wikis, podcasting and using social networking tools offer many possibilities for collaboration with other teachers and for partnerships with students and the community. Many of these ideas suggested below are already used but new technologies present them in a new format.

Elementary children could write blogs about a favourite character, which could be added to and commented on by other children and the teacher, creating a lively conversation about books (Valenza, 2005/2006). Warlick (2006, para. 6) suggests that teachers can encourage critical thinking in older children by having them “write persuasive reactions—one in agreement, another in disagreement” on their classmates’ blog entries. Again for this age group online journals are appealing. As part of a class assignment, they could write reflective entries, before and after a test or a major project. Students could build their own study guides for tests, with both teachers and classmates correcting any misinformation, much like a digital wikipedictextbook (Valenza, 2006b). Elementary students could build online wikidictionaries as they come across unfamiliar words in their readings (Valenza, 2006b).

Another idea would be to develop an online version of the popular *Choose-Your-Own-Ending* series. Each child would write a pivotal scene in a story, but each with a different scenario and posted on a separate wiki page. When the story is read from a structured beginning, each of these different scenarios acts as a unique ending. Students could blog a school or class newspaper, which is easily read online, and archived as well. RSS feeds from blogs that students create can be added to a school library, school or district webpage making them easy to find.



Cross-country riddle exchanges build communication and written language skills. There is debate on whether children need to spell-check and use correct grammar in their online school-based communications, or whether they can use online user-developed language. Perhaps a compromise of correct language at times and popular lingo at others can be worked out.

Teacher-librarians must choose their blog hosting sites carefully, set them up so children are not linked to inappropriate websites, and decide whether to allow unmoderated commenting, moderated comments or no comments. A letter needs to be sent to parents explaining the blog's purpose and expectations for student involvement.

Teacher-librarians, working collaboratively with other staff members can make lists of feeds from pertinent blogs, wikis or streaming media resources as an up-to-date pathfinder matched to grade level and research goals (Richardson, 2006; Stephens, 2006a). These easily updated online resources may include call numbers of relevant library materials, databases, and appropriate web sites, including *Ask-an-Expert* ones (Valenza, 2005/2006). These resources could be tagged with common terms such as the name of the teacher, school or class making them easily searchable by both the teachers and the students, when posted to social bookmarking websites, then added to, and commented on by the students who are searching for the resources. RSS feeds alert the site creator when new information is added. Feeds are especially useful for collecting updates on current event topics from a source such as the *Google News* reader (Richardson), or new library acquisitions arranged thematically by the reader's interests. Teacher-librarians could post a 'Research Question of the Week' in a blog and allow the students to answer in this way.

Podcasts present opportunities for Web-based radio shows. Even primary students could use this technology, taping what they see and hear on visits to the fire hall or other community sites. Valenza (2005/2006) suggests historic reenactments and poetry slams. iPods could be used for literature circles, with all students listening to the audio book at the same time, and then recording the ensuing book discussion as a podcast. Foreign language students could join a community encouraging conversations for second language learners, but these interactions would need to be monitored (New Media Consortium & the Educause Learning Initiative, 2007).

Students can create and present newscasts, made into iMovie projects for uploading to streaming media sites or students could conduct interviews, which are taped, and then vodcast. School library blogs could host video streaming of well-known authors reading children's books aloud or of author interviews. Video clips of someone's vacation can give students a sense of a foreign culture or an ancient archeological site.

Students can use IM to interactively plan collaborative projects from anyplace at anytime, including with other elementary classes across the country (Abram, 2004; Stephens, 2006b). Students can designate certain other children as their buddies, granting them permission to join the group, and creating a trusted network for communication. Valenza (2006d) calls this information shared back and forth the "student equivalent to peer review" (para. 26). During project discussions, students share files back and forth and, through IM, they could run a question and answer session with a virtual expert (Abram, 2004).

Prensky (2005c) suggests teachers develop lessons, including animations, that students can upload from cell phones, and that they use short messaging services for related quizzes. Cell phone voice capabilities would make this idea especially work with language or vocabulary training.

In acknowledging use of these social networking sites, the school has a responsibility to teach sensible online behaviours by developing a code of ethics to stem cyberbullying and to caution about posting personal information. Children need to clearly understand the real consequences of posting private information and images, and especially information that may embarrass them in the future. Students need to be aware of their responsibilities in terms of music and video downloading, and other cases of copyright infringement.

Using these new technologies, teachers and teacher-librarians have the opportunity to continue to stress information retrieval and literacy skills and to teach information evaluation.

### *Professional Applications*

Teachers and teacher-librarians are usually digital immigrants, and they sometimes approach these new technologies with fear (and sometimes loathing), but I hope they try to understand them.

Teacher-librarians, who often work away from others in the field, may wish to set up blogs for their own professional development. There is no publication delay and there is instant access to current topics, both for writers and readers. Several blogs for teacher-librarians already exist and are a venue for networking, sharing, and discussions among the participants (Harris, 2007c; Richardson, 2007a). Bloggers can set up blogrolls of those blogs they read.

RSS readers are also helpful for the teacher-librarian's professional development because postings from all pertinent blogs can be accumulated in one place and easily read on a daily basis. *Bloglines* will deliver a list of each separate feed that has received a posting that day, or *Suprglu* will accumulate the targeted feeds together into one posting (Richardson, 2006). Social bookmarking sites and *Technorati* are good sources of curricular information that has been posted to blogs.

In this paper I did not touch upon another Web 2.0 development--digital game-based learning including video games, massively multiplayer online role-playing games (MMORPGs), and virtual role playing sites like *Second Life*. These game-based tools should be considered for school libraries and would definitely provide material for another exploration.

### **Conclusion**

In the beginning of this paper I wondered if Web 2.0 tools would work in an elementary library. I believe the answer is yes. The goal of the school library programme is still to encourage the love of learning, the joy of reading, and support for resource-based learning throughout the curriculum but these tools, which can allow for a high degree of collaboration may make learning more participatory, social and interactive for students.

I think use of these tools will bring about a shift in the way library services are used throughout the school. Teacher-librarians must recognize that rapid change is

happening and provide leadership in the adoption of these technologies. A description in chart format, courtesy of Joyce Valenza, of the changes taking place and adaptations needed can be found in Appendix C.

I believe these new technologies will drive change throughout the school system. Principals will need to provide significant financial support and leadership for both staff and students. School district administrators will have to consider that children born this year, will have hundreds of photos and maybe a few videos posted online by the time they reach school. Will their parents care if the school posts a picture of them when they are in kindergarten? We need to take a careful and current look at our Acceptable Use Policies and privacy policies, and teacher-librarians need to model appropriate use. Schools need to make decisions on how much personal information they allow students to post and how closely monitored these posts will be, as well as teaching responsible thoughtful attitudes towards photo and video sharing.

Probably the best thing is just to begin to work with these tools--find out what works for each situation, each group of teachers, within the technological capabilities of each school setting. Teacher-librarians, as tech innovators, need to share what they learn about positive uses of these new technologies with students, staff, other teacher-librarians, parents and the community through collaborative technology classes, professional development sessions, journal or blog articles and community workshops.

It is very hard to predict where much of this technology is going, and even in writing this paper the speed of technological change is amazing. I began the paper in January and by the time I finished in May I had to go back and alter some parts because change had already happened. It seemed like every day I needed to add not only new information, but also news of a new development. The Web 2.0 tools will clearly be useful in school libraries, especially so for older students. Our school children are living at a time when the ability to network and communicate across different media is important for knowledge production, but it is still important for us to meet the information needs of users and for them to learn information literacy skills no matter what the format. A PowerPoint presentation (Fisch, 2006), I came across in my learning journey says it well: "We are currently preparing students for jobs that don't yet exist ... Using technologies that haven't been invented ... In order to solve problems we don't

even know are problems yet” (slides 31-33). The need for change is clear; it will take both planned implementation and trial and error to see which tools are best suited to elementary students.

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## Appendix A

### School Library 2.0 Blogs and Wikis for Elementary Teacher-Librarians

Gathered in April 2007

#### **Book Voyages**

<http://www.bookvoyages.com/>

- a podcast about children's literature from the point of view of an elementary school librarian. Updated regularly.

#### **Carol Richardson's Weblog**

<http://www.gln.k12.va.us/weblog/crichardson/>

- example of how a class newsletter prepared through a blog

#### **Goochland Elementary Media Center**

<http://www.gln.k12.va.us/weblog/lsussman/>

- library events and new resources

#### **Grandview Elementary**

<http://www.grandviewlibrary.org/default.aspx>

- updated regularly, many podcasts and lots of presentations of student work can be found at the newspaper link

#### **Livonia Primary Library**

- [http://www.livoniacsd.org/class\\_webs/agordon/index.htm](http://www.livoniacsd.org/class_webs/agordon/index.htm)
- updated blog featuring many podcasts produced by students

#### **Roosevelt Elementary School Media Centre**

<http://rooseveltmedia.blogspot.com/>

- not being kept up-to-date, but shows how a blog can function as a library webpage

#### **IIIIVoices from the Inglenook**

<http://csslibraryblog.blogspot.com/>

- updated weekly, enthusiastic book reviews and descriptions of library presentations – HIGHLIGHT is series of video blog reviews featuring the voices of primary students but fronted by a puppet of 'Oliver, the Library Cat'

*\*wiki listing school libraries (K-12)*

[http://www.blogwithoutalibrary.net/links/index.php?title=School\\_libraries](http://www.blogwithoutalibrary.net/links/index.php?title=School_libraries)

*\*wiki for teacher-librarians*

<http://teacherlibrarianwiki.pbwiki.com/Links%20to%20our%20blogs>

Learn how to use these tools at:

#### **edTech Classroom**

<http://edtechclass.blogspot.com/>

- instructions on how to use Web 2.0 plus other 'tech' tools
- geared to all educators, not just teacher-librarians

**School Library Learning 2.0**

<http://schoollibrarylearning2.blogspot.com/>

- Learning 2.0 is a discovery learning program created by Helene Blowers. Content and style for the CSLA School Library Learning 2.0 program has been borrowed and duplicated with permission.

## Appendix B

## School Library 2.0 Tools Created by BC Teacher Librarians

Gathered in April 2007

A Database is Just a Less-Dusty Library	<a href="http://www.bestlibrary.org/databases/">http://www.bestlibrary.org/databases/</a>
Award-Winning Novels in the Charles Best Library	<a href="http://www.bestlibrary.org/award/">http://www.bestlibrary.org/award/</a>
Back to the Source	<a href="http://www.bestlibrary.org/primary/">http://www.bestlibrary.org/primary/</a>
BCTLA Conference 2006	<a href="http://bctlaconference2006.pbwiki.com/FrontPage">http://bctlaconference2006.pbwiki.com/FrontPage</a>
Best Teachers	<a href="http://www.bestlibrary.org/best_teachers/">http://www.bestlibrary.org/best_teachers/</a>
Booklady	<a href="http://bookminder.blogspot.com/">http://bookminder.blogspot.com/</a>
Digital Handbook	<a href="http://www.bestlibrary.org/digital/">http://www.bestlibrary.org/digital/</a>
District Book Club	<a href="http://districtbookclub.pbwiki.com/FrontPage">http://districtbookclub.pbwiki.com/FrontPage</a>
Dr. Charles Best Secondary School Library	<a href="http://www.bestlibrary.org/">http://www.bestlibrary.org/</a>
The Reader Rag	<a href="http://readerragvanier.blogspot.com/">http://readerragvanier.blogspot.com/</a>
Science 9 Digital Handbook	<a href="http://www.bestlibrary.org/sc9/">http://www.bestlibrary.org/sc9/</a>
Social Studies Ten Digital Handbook	<a href="http://www.bestlibrary.org/ss10/">http://www.bestlibrary.org/ss10/</a>
Social Studies Eleven Digital Handbook	<a href="http://www.bestlibrary.org/ss11/">http://www.bestlibrary.org/ss11/</a>
Tyee's Red Cedar Group Site	<a href="http://tyeeredcedar.pbwiki.com/">http://tyeeredcedar.pbwiki.com/</a>
Welcome to Mr. Ewert's Virtual Classroom	<a href="http://www.bestlibrary.org/ewert/">http://www.bestlibrary.org/ewert/</a>
Well Read	<a href="http://www.bestlibrary.org/well/">http://www.bestlibrary.org/well/</a>
YRCA 2007–Junior Division (Grades 4–6)	<a href="http://yrca-2007.blogspot.com/">http://yrca-2007.blogspot.com/</a>

## Appendix C

Retrieved March 26, 2007 from <http://mciu.org/~spjvweb/lifechanged.htm>

## 30 Years of Information and Educational Change How should our practice respond?

I graduated with an MLS in 1977 and had to return and redo most of the credits in 1987/1988 to get education credentials. While I learned programming the first time around and personal computer applications the second time around, the rate of change has dramatically altered the landscape.

I see an urgent need for librarians to retool. We cannot expect to assume a leadership role in information technology and instruction, we cannot claim any credibility with students, faculty, or administrators if we do not recognize and thoughtfully exploit the paradigm shift of the past two years. Retooling is essential for the survival of the profession.

I started playing around with a chart to record the changes and help plan for the future. I invite you all to help me refine this chart. It is very rough!

Things that have changed	When left library school preservice (1976/1988?)	2006/ 2007 School Year	Implications for Future? Learners, Educators, Schools? Library Profession?
Most used reference sources	Encyclopedias and almanacs, Readers' Guide, CD-ROM Databases, books, magazines, newspapers	Wikipedia, Google, Ask.com, MapQuest, subscription databases, ebooks media sharing portals	Need to introduce a fuller information toolkit. Need to promote lesser known or used tools—subscription databases, alternate search tools, ebooks, streamed media resources Potential for an <b>information underclass!</b> Need to help students determine where to start. Need for high quality federated searching to cut through the noise? May need to promote the value of books for some projects. <a href="#">Top 25 2.0 Search Tools</a> (Online Education Database) Streaming Media <a href="http://mciu.org/~spjvweb/video.html">http://mciu.org/~spjvweb/video.html</a>
How we most often communicate	Letters, phone calls, email through Pine and other text-based systems	Cell phones, texting, email, IM, Skype (VOIP), social networking (MySpace, Friendster, FaceBook, Elgg), telecommunications, blogs, wikis, Web goes two ways Pew Studies—students are online, students are bloggers, students are content creators! <a href="http://www.pewinternet.org/">http://www.pewinternet.org/</a>	Librarians need to communicate with users using emerging tools. Blended service and instruction. Two-way communications. Learner-centered/learner empowered environment.
Reference service	Reference service at the desk, in-person reference interview, Mudge <i>Guide to Reference Books</i>	Students expect immediate interaction and 24/7 information service. Students expect independence in information access—on home PCs at any hour of	Users expect information and services to be immediate. Need for blended service in the form of Web sites, blogs, pathfinders customized to meet students' information and developmental needs. New pathfinders in the form of wikis and blogs inspire feedback.

		day. Some libraries and states offer IM and email reference	Need for extended just-in-time, just-for-me guidance/intervention. Libraries should aim to be a window on students' home desktops. Virtual library as customized information landscape.
<b>Options for student projects, learning</b>	Student projects: term papers, Hypercard, dioramas, essays, speeches, debates, etc.	Term papers, essays, speeches, debates, etc. PowerPoint, websites, learning objects, podcasts, video editing, Internet2, wikis, blogs, digital storytelling, WebQuests, I2 and teleconferencing bring authors, experts, performances in and connect teachers and learners with remote partners. Learning can be face-to-face, online synchronous, asynchronous. Growth of distance learning options Video sharing Students are film producers-YouTube, Google Video	Librarians must partner with classroom teachers to create projects relevant to 21 <sup>st</sup> century learning using emerging tools for communication. What is the best communication tool for the project? How can we use these new tools for teaching, practicing, and reflecting on information fluency? Blogs and wikis help students track the research process? <a href="http://researchlogtemplate.edublogs.org">http://researchlogtemplate.edublogs.org</a> Rethinking PowerPoint (PresentationZen?) <a href="#">Presentation Zen</a> <a href="#">PowerPoint Extreme Makeover</a> <a href="#">Lawrence Lessig &lt;Free Culture&gt;</a> <a href="#">Cliff Atkinson: Beyond Bullets</a> <a href="#">Tom Peters on Presentation Excellence</a> <a href="#">Gettysburg Address PowerPoint</a> <a href="#">Ira Glass on Storytelling</a>
<b>Audience for student work / writing</b>	Teacher's eyes only, class presentation, file cabinet	Website, podcasts, wikis, blogs, digital portfolio--open potential global audience	Student work can easily be public, global! How does shifted and expanded audience change approach, instruction, motivation? (Need for caution/instruction about "stickiness" of student personal and other writing. Admissions officers and potential employers are watching.)
<b>What we know about how learners learn</b>	Move away from fact memorization, right answers, textbook reliance, and reporting to constructivism. Move away from "frontal" teaching, group projects, inquiry, essential questions	Influence of brain research / cognitive science. Learning is: multidisciplinary, social, multi-intelligence (Gardner), potential for gaming/simulations, brain needs to "pattern", every brain different, learning styles vary, importance of building on prior knowledge, application of knowledge, real world, growth of relevant service learning, learner-centered, community-centered, problem-based	How do we use what we know about learning to partner with teachers to create effective learning activities? What role will collaboratively created e-books, new media, a.i., gaming play? How will we design learning environments that work? <a href="#">Coming of Age (Terry Freedman)</a>
<b>How we and our students find out about books and other new materials?</b>	Bestseller lists, recommendation lists from organizations, book review journals,	Amazon & other online booksellers, push technology suggestions, mega-bookstores, book trailers, book review blogs	Need to promote and solicit suggestions for materials in new ways. Interactive forms? Encourage student/teacher book blogging? Student-produced book trailers?
<b>Understandings about intellectual property</b>	Copyright laws	Copyright laws, <a href="#">Multimedia Fair Use Guidelines</a> , Tassini decision <a href="#">Creative Commons License</a> , Open Source, copyright-friendly portals for sharing content	Need to teach new world of information ethics. Copyright options are expanding for creators. How do we guide learners to copyright-friendly options? How do we behave responsibly? Is Fair Use shifting?

			<p><a href="#">Learn How to Use Copyright and Stay Legal in the K-12 Classroom (CyberPlayGround)</a>  <a href="#">Music Law <a href="http://www.educyberpg.com/Music/musiclaw.html">http://www.educyberpg.com/Music/musiclaw.html</a></a>  <a href="#">Creative Commons' Podcasting Legal Guide</a>  <a href="#">Free Culture</a>  <a href="#">Lessig's Free Culture Flash Presentation <a href="http://randomfoo.net/oscon/2002/lessig/free.html">http://randomfoo.net/oscon/2002/lessig/free.html</a></a>  <a href="#">UNESCO's Handbook on Copyright and Related Issues for Libraries <a href="http://www.eifl.net/services/handbook.htm">http://www.eifl.net/services/handbook.htm</a></a>  <a href="#">Bloggers Beware <a href="http://www.llrx.com/features/bloggersbeware.htm">http://www.llrx.com/features/bloggersbeware.htm</a></a>  <a href="#">Student Bloggers FAQ <a href="http://www.eff.org/bloggers/lg/faq-students.php">http://www.eff.org/bloggers/lg/faq-students.php</a></a>  <a href="#">EFF Legal Guide for Bloggers <a href="http://www.eff.org/bloggers/lg/">http://www.eff.org/bloggers/lg/</a></a>  <a href="#">Intellectual Property and Free Speech in the Online World <a href="http://fairusenetwork.org/resources/OSPreport-2007.pdf">http://fairusenetwork.org/resources/OSPreport-2007.pdf</a></a>  <a href="#">White Stripes Creative Commons Video <a href="http://mirrors.creativecommons.org/getcreative/">http://mirrors.creativecommons.org/getcreative/</a></a>  <b><a href="#">Boucher and Doolittle Introduce the FAIR USE Act of 2007**</a></b>  <a href="#">World Intellectual Property Organization <a href="http://www.wipo.int/copyright/en/P">http://www.wipo.int/copyright/en/P</a></a></p>
<b>Students and intellectual property / academic integrity</b>	MLA (and other) books and handouts, teachers and librarians check for plagiarism by searching through print sources	Tools like turnitin, bibliographic format available on the Web, citation generators, Google as an originality check.	<p>Need for instruction and guidelines in respecting intellectual property in a cut-and-paste, mixed, mash-up world.          Need to define appropriate levels of collaboration for particular projects.  <a href="#">IMSA 21<sup>st</sup> Century Information Fluency Project</a></p>
<b>Evaluation</b>	Resources limited. Evaluation simplified by formal, vetted publishing process. Print sources—books, magazines, journals, newspapers—well-know to teachers and librarians. Relatively easy assessment of credibility, authority, relevance, scope.	Resources vast—choices among formats explode. Multiple voices available. Anyone can author content. New challenges in assessing credibility and authority. Read/Write Web 2.0 facilitates immediate power of the citizen as author. No more black and white evaluation rules!	<p>Need to teach about how to evaluate for particular information task.          Notions of authority are shifting.          Need to annotate to explain some information choices.          How do we learn to evaluate blogs, wikis, shared video, podcasts, etc?          Some ideas for evaluating blogs:  <a href="http://mciu.org/~spjvweb/evaluatingblogs.html">http://mciu.org/~spjvweb/evaluatingblogs.html</a>          Need to distinguish what printouts represent:  <a href="#">What am I holding?</a>  <a href="#">IMSA 21<sup>st</sup> Century Information Fluency Project</a></p>
<b>Understandings about cataloging</b>	Sears and LC Subject headings	Sears and LC, and access to computer cataloging services. Taxonomies vs. folksonomies. Move from tree hierarchy to pile of leaves ( <a href="#">Weinberger: Taxonomy and Tags</a> ) Metadata, tags,	<p>Need to rethink ineffective cataloging schemes to recognize power of keywords and tags that make sense to users. Cookery—India no longer plays! Personalization of the OPAC?          Need to teach about tags, RSS, etc. as new ways to locate relevant information.          Multiple strategies to describe, identify knowledge items. Virtual things do not need to</p>

		folksonomies. Emerging strategies for tagging non-print media—images, film, music Emerging strategies for tagging non-print media—images, film, music. Richness of hyperlinks	be kept in one place.
<b>How we get news</b>	3 major news channels, newspapers, weekly news magazines	24-hour news, 100s of channels on television, websites, blogs, push news, RSS, access to global news sources for multiple perspectives, news portals gather content in varying formats	Need for pathfinders to lead learners to news sources they will need for particular projects, multiple languages, multiple cultures, multiple formats
<b>Standards</b>	Information Power released in 1988—new focus on information literacy	<u>IP2 released in 1998</u> ETS releases <u>ICT Literacy Assessments, Partnership for 21<sup>st</sup> Century Skills, ISTE's NETS for Students, Teachers, Administrators</u> , release of state and national content area standards New drafts: <u>Draft Framework for ISTE NETS•S Refresh</u> <u>ISTE NETS Refresh 21st Century Readiness</u> <u>AASL Draft of 21st Century Standards</u>	How do we use new tools to deliver both content and process standards?
<b>Intellectual freedom</b>	Books have been challenged and sometimes banned from collections	Challenges of all sorts. DOPA threatens access to Web 2.0 tools, filters required for e-rate funding	Increasing need to protect student access to information. Need more complicated in a political environment motivated by fear of new tools.
<b>What our collection looks like</b>	Books, magazines, filmstrips, cassette tapes, 16 mm movies, software on disk	Books, ebooks, streaming audio, streaming video, blogs, Webcasts, podcasts, wikibooks, open source, software & Web-based apps	Need to create signage, guides, pathfinders for new additions to “collection.” How will we lead students and teachers to them most effectively?
<b>What our space looks like</b>	Traditional shelves—books, magazines, videocassettes, reference workstations	Much of reference is moving online, video and audio streaming, still need for fiction and nonfiction	Increasing need for group, creative production space—iMovie, podcasting, blogging. Library as group planning/collaborating space. Library as performance, presentation space. Library as event-central, telecommunications, remote author/expert visit space. Library continues as study/reading/gathering/cultural space.
<b>What we loan</b>	Books, videocassettes, audiocassettes, magazines	Traditional items & ebooks, digital audio, laptops, memory sticks, digital cameras, etc.	Budgets and policies need to recognize students' new needs for learning materials.
<b>Need for retooling / How we retool</b>	Every five years or so Professional journals, conferences	Frequent! Professional journals, conferences, virtual conferences, Webcasts, professional blogs, collaborating through professional wikis.	Learning happens between annual conferences. Blogs publish professional news, new strategies before it can travel through traditional publishing process. (Essential strategies for keeping up!) Attend conferences without traveling—viewing keynotes online. Use tools like <u>Hitchhikr</u> , visit sources like

			<a href="#">EdTechTalk</a> Models of student and teacher work at the <a href="#">Edublog Awards</a>
<b>Typical assessment</b>	High stakes testing, beginning of project-based assessments	High stakes testing + growing recognition of need for alternate, authentic performance-based assessment. High stakes backlash beginning.	Need to move schools beyond knowledge needed to pass one or two high stakes tests. Digital portfolios more practical option for performance-based assessment. Students need to solve problems, make decisions, collaborate, and communicate effectively with traditional and emerging tools.

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