

"The term 'Web 2.0' describes the changing trends in the use of World Wide Web technology and Web design that aim to enhance creativity, communications, secure information sharing, collaboration and functionality of the Web. Web 2.0 concepts have led to the development and evolution of Web culture communities and hosted services, such as social-networking sites, video sharing sites, wikis, blogs, and folksonomies. The term became notable after the O'Reilly Media Web 2.0 conference in 2004" (Wikipedia 2008).

# Web 2.0 & YOU

**Donna J. Baumbach**

baumbach@mail.ucf.edu

The World Wide Web has come a long way in a very short time. A little more than a decade ago, with the invention of Mosaic, the first browser to display images inline with text instead of displaying images in a separate window, and Netscape, the first graphical user interface (browser), we began to experience a rapid expansion of information. At first, webpages were hard to edit; most people read information on webpages, fewer created them. Those who made their own library webpages learned to code in HTML or used WYSIWYG (What You See Is What You Get) editing software to design mainly static webpages. In other

cases, librarians provided content to the technology administrator or site owner, who then coded and designed webpages for them. As website design rules and styles emerged and coding became more sophisticated, some school administrators began to treat webpages as marketing tools. Designers were hired to create and organize entire websites, bringing a consistent look and feel to the school's public face. More recently, in response to privacy and safety concerns, information about people in the school community, as well as curriculum and student work, may be password-protected on an intranet, invisible to the general public.

Within the last three to four years, AJAX and other technologies have made it possible for software developers to create Web applications that communicate with the server, allowing elements on a webpage to change within the static page. These applications, collectively called Web 2.0 tools, enable interactivity and easily created content by contributors with no knowledge of programming. Using such tools, anyone can read and write on the Web, consuming and producing information. Some librarians think of Web 1.0 as a period in which they and their students could locate, read, and evaluate a rapidly exploding store of information, while the current Web 2.0 environment enables them to use the Web as a desktop. Software has become a service delivered over the Internet, called "cloud computing." In addition, Web 2.0 sites offer a social component; educators and their students can share and collaborate on their work, learning openly again rather than behind walled gardens.

If you're not sure if you might benefit by using Web 2.0 tools in your school library media program, consider these questions. Would you like to:

- *move* students beyond "searching for information" to using it and creating it?
- *get* better results from student projects and research?
- *provide* more equitable access to digital tools and resources?
- *integrate* 21<sup>st</sup>-century skills into the curriculum?
- *foster* more collaboration with teachers to benefit student achievement?
- *create* a website in seconds and post information, images, video, hyperlinks, and sound?
- *share* information (and labor) with your colleagues online?
- *showcase* library media center activities and promote your program online?
- *do* more in less time?
- *make* your budget go much further than you—or anyone else—thought you could?

If you said "Yes" to any or all of these questions, Web 2.0 tools may benefit you and your school community. (If you said "No" to these questions, you might be in the wrong profession!)

Consider the resources most of us had as K–12 students creating reports: pen, paper, scissors, glue, crayons, construction paper, typewriters or word processors, watercolors, photographs, videotape. Today's students have access to all of those and more: computers, social bookmarks, RSS feeds, blogs, wikis, photo editing and photo sharing sites, digital video and video editing tools, social networks, podcasts, image and text generators, and other new resources. If school library media programs are to be relevant to today's students, we must investigate these digital tools, use them ourselves, and teach students to use them effectively.

## Knowledge and Use of Web 2.0 Tools by School Library Media Specialists

My fascination with Web 2.0 tools began when I heard Alan November ask an audience of teachers at the Florida Educational Technology Conference <[www.fetc.org](http://www.fetc.org)> how many knew what a "blog" was. Very few hands were raised. Then he asked how many teachers blogged, and even fewer responded. November reported that in a visit to a local high school that very day, he had asked the same question in several English classes. Most students knew what a blog was, and over 80 percent blogged. That intrigued me.

Since then, I've read about blogs in professional journals, attended conference presentations about blogs and other Web tools, and subscribed to many blogs and RSS feeds. I've played with the tools; authored a blog; created wikis; uploaded photos; commented on, rated, and uploaded videos; and developed and shared presentations using web-based tools. These tools have changed the way I work and the way I learn, and I see the potential for their use in school library media programs by school library media specialists, students, and teachers.

Early in 2008 I surveyed school library media specialists to establish some baseline data about knowledge of Web 2.0 tools, to discover innovative uses of these tools in school library media programs, and to identify opportunities for professional development. Among the research questions:

- What are the current levels of knowledge and use of Web tools among school library media specialists?
- What are some of the best Web tools for library media programs?

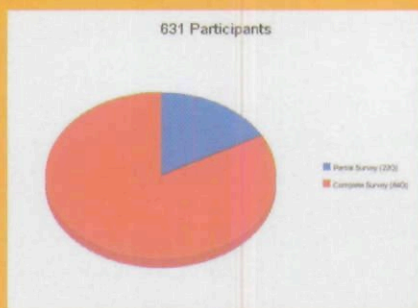


Figure 1. Number of responses to partial survey and to complete survey.

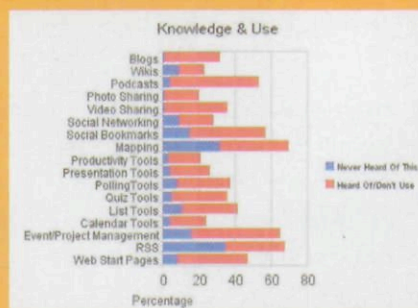


Figure 2. Respondents familiar with specific Web 2.0 tools.

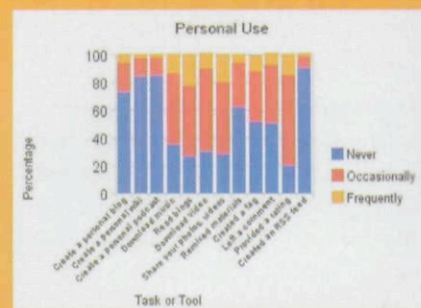


Figure 3. Performance of Web 2.0 tasks in personal life.

- Who is using Web tools in library media and education?
- What are they doing with them?
- Why aren't some people using Web tools?
- How can we learn about Web tools and share ideas for integrating them?

I used several e-mail lists to recruit participants: members of the Florida Association for Media in Education (FAME), the SUNLINK and SUNLINK Announcements blog e-mailing lists, and the Florida Association of Supervisors of Media. In addition, information requesting participation was posted to LM.NET, the FAME Website, and to the SUNLINK Announcements page.

An online survey was developed using SurveyMethods <[www.surveymethods.com](http://www.surveymethods.com)>. The survey included twenty-two general and demographic questions, and then gave participants the opportunity to continue to respond to forty-two more in-depth questions. Surveys were completed by 631 participants. Only the twenty-two general questions were answered by 17 percent of participants, while 83 percent completed the entire survey. (See figure 1.)

Of the 631 participants, most are quite familiar with the Web and have significant experience in school library media centers. In

answer to a question about Internet use, 96 percent said they go online several times per day; 2 percent say they go online only once per day; and the remainder less often than that. The responses revealed that 28 percent have worked as school library media specialists five years or less; 20 percent have five to ten years of experience in school library media center; 25 percent have eleven to twenty years of experience; and 25 percent have more than twenty years of experience; the remainder preferred not to answer that question. Male respondents made up 8 percent of the sample, while female respondents made up 92 percent. The breakdown by school levels included: 41 percent work at the elementary level; 17 percent at the middle school level; and 23 percent at the high school level; with the remainder working in higher education, at the district or state level, or some other combination of grades.

### Knowledge & Use of Web 2.0 Tools

Although most library media specialists have heard of blogs and other Web 2.0 tools, a great number have never used them. Over 30 percent had never heard of online mapping tools or RSS. Over 40 percent have heard of, but never used, podcasting, and event or project management tools. (See figure 2.)

When asked about personal use of some kinds of Web 2.0 tools, few had created personal blogs, wikis, or podcasts. About 65 percent say they download music occasionally or frequently; 73 percent read blogs occasionally or frequently; 70 percent say they download videos; and 72 percent say they share photos or videos. Over 60 percent of participants have never remixed materials to create something new. Approximately 50 percent say they have never created a tag for a photo, image, or article, and 50 percent say they have not commented on someone else's blog. About 80 percent have rated a product or service online. Almost 90 percent have never created an RSS feed for something they have created. (See figure 3.)

When asked about the professional use of these tools in the library media center, less than 30 percent reported that they access these tools and even less create or contribute to them for the school library media program. (See figure 4.)

When asked about their instructional role in teaching others to use some of these tools, about 70 percent have taught or showed someone how to share photos or videos online; however, 70 percent or more have never taught anyone how to create a blog, a wiki, or a podcast, or how to remix materials. (See figure 5.)

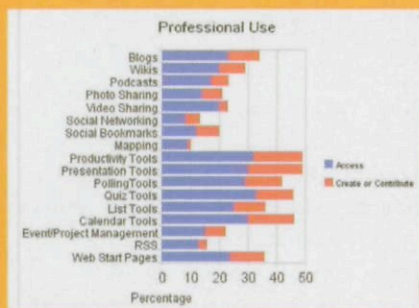


Figure 4. Performance of Web 2.0 tasks in professional life.

By contrast, 64 percent of K–12 students have created Web 2.0 content; 47 percent use photo sharing sites; 55 percent maintain space on a social networking site. In addition, 28 percent of students have created their own blogs, and 33 percent have created wikis, while 18 percent have created or listened to podcasts. At least 57 percent have watched videos on the Web, and 26 percent have remixed materials to create something new (Pew Internet and American Life 2007 and 2008).

## Barriers

Four major barriers to the use of Web 2.0 tools in school library media centers were identified in my survey.

### 1) Tools inaccessible at school.

The most common barrier identified was that many of these tools—including entire categories of tools—are blocked by district or school filters. YouTube and blogs are commonly blocked. Fully a third of participants reported that one or more categories of tools cannot be accessed from school computers—primarily blogs and video sharing sites. However, a third reported that they did not know if the tools were blocked or not.

### 2) Erosion of informal professional development time.

Increased demands, decreased staffing, and smaller budgets have limited the time that school library media specialists might have had to explore Web 2.0 tools that have been, of course,

rapidly multiplying. Even where training on specific tools has been provided or library media specialists have learned to use tools on their own, there is little time to experiment with the tools or explore them in enough depth to feel comfortable using a tool or, if it's not blocked, introducing it to students or teachers.

### 3) Lack of relevant training opportunities.

Most library media specialists said they have had either no training or poor training on the use of Web tools or that training has not been relevant to library media center applications. One library media specialist reported that she is not allowed to use any Web 2.0 tools until she completes training provided by the district. She has been on the waiting list for more than two years.

### 4) Lack of knowledge.

The cumulative effect of issues 1 through 3 is that library media specialists commented that they were not familiar with many of the tools listed in the survey. Others said they were not aware of entire categories of tools (RSS feeds, project management tools, social bookmarking tools, social networking tools).

## Need for Professional Development

When asked what kinds of Web 2.0 tools library media specialists would like to learn more about, most reported they wanted to learn more about all of them and, more specifically, about how they are being used in schools and school library media programs. Library media specialists expressed the most interest in learning about podcasts and online productivity tools, and the least interest—but still over 60 percent—in social networking and social bookmarking tools. (See figure 6.)

A major outcome of the survey has been our development of the "WebTools4U2Use" wiki <<http://webtools4u2use.wikispaces.com>>, designed to give school library

Figure 5. Teaching Web 2.0 tasks.

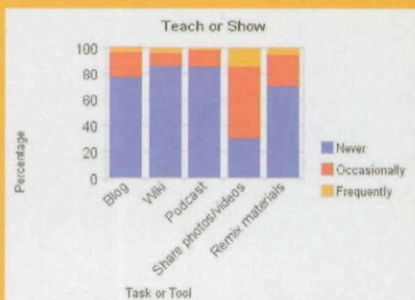


Figure 6. Expressed interest in learning about Web 2.0 tools.



media specialists an opportunity to learn more about Web tools and how they are being used in school library media programs (see page 15). Then library media specialists will be able to enhance school library media programs and services, and share their own creative ideas about how to integrate Web 2.0 tools with programs and services. As someone said, "It's difficult to teach someone to swim without getting wet." Hundreds of free and inexpensive Web tools are available for use by school library media specialists; these tools can make us more productive, valued, and relevant.

A recent study by the MacArthur Foundation found that with these new technologies "young people are learning basic social and technical skills through their use of digital media that they need to participate fully in contemporary society" (2008). Web 2.0 tools are changing the way students learn and socialize. As yet students do not fully take advantage of the opportunities these new tools offer for learning. They have learned to use these new tools by trial and error, and are now faced with new challenges in learning about privacy, social skills, and the advantages and features of the tools for academic purposes. Researchers recommend that "to stay relevant in the 21<sup>st</sup> century, education institutions need to keep pace with the rapid changes introduced by digital media" (MacArthur Foundation 2008).

Why should library media specialists learn and use Web 2.0 tools?

### *Remain educational leaders, become educational innovators.*

As we work with teachers to help them learn about these tools and integrate them into the curriculum, we are seen as instructional leaders, information leaders, and technology

leaders at the center of teaching and learning. Most Web tools are introduced as beta testing versions, so that the school library media specialist can begin to experiment with them almost as soon as they are invented and, in fact, can help shape the final product through feedback to the company and product development team. Many Web tools initially designed for business use were discovered by teachers who, experimenting with them in their classrooms, suggested modifications for K–12 use. These suggestions have resulted in special, safe, easy-to-use educational versions. For so many years we waited passively while new technologies became more available and more affordable. It's fun to be in on the ground floor of the design and implementation of innovations.

*Stretch the library budget; leverage existing technology investments.* School and school library media center budgets have seldom been slimmer. Yet, there are literally thousands of tools available to help with almost any task, and many of these tools can be obtained for little cost, other than the time to learn them. Even when there is a fee for the full version of a tool, the free version may have enough features to suit your purpose. Schools and library media centers have large investments in computers, infrastructure, and other technology. Providing access to and instruction in a wide variety of web-based software that can increase student achievement, help meet state and national standards, and capitalize on existing investments yields an excellent return on technology investments, whether measured by use or products or learner outcomes.

### *Support equity of access now; teach life skills for the future.*

Students who may not be able to afford productivity software, audio or video editing equipment, or large capacity storage media at home can use functionally similar free software. The tasks that today's Web tools help us to accomplish are those we will need to do throughout our lives: to access, interpret, synthesize, manipulate, report, and create information in a variety of forms and formats; to express ourselves verbally and visually; to present information and opinions with clarity and creativity; to write; to calculate; to visualize; to define; to discuss. Capitalize on the higher-level thinking skills these tools enable—encourage reflection with blogs, invite evaluation and synthesis within wikis, and ask for planning and assessment using charting tools. Selecting the right tool or tools, creating visuals, editing essays, evaluating the work of others, and sharing ideas and data all require an awareness of one's own knowledge, skills, and ideas, as well as the capacity to take others' perspectives—these are skills for a global citizen.

*Easy to introduce; flexible and versatile to use.* Most Web tools offer a very flat learning curve. Simple directions, online video tutorials, and a wealth of examples are frequently a part of a Web tool's site. Basic skills, such as uploading images, saving written work, and importing embeddable videos, are similar from tool to tool. Students can generally figure out how to make things work on the first or second try and will soon be offering others tips and tricks on how to improve their web-based products. A variety of tools can be used for a single purpose across grade levels and throughout the curriculum. For example, students can create a book review in a podcast, a video,

a photographic essay, a single image, a work of art, a blog entry, several frames in a comic creator, an animation, a timeline, a flow chart, a slideshow with or without narration, and dozens of other ways—each with its own impact and trade-offs. A single tool, a blog, for example, was originally intended to be an online journal, but is currently being used to provoke discussion, distribute news, collect comments, assess learning, record reflections, publish videos or other visual information, organize information, and broadcast links.

**Encourage creative expression, gaining authentic audiences and useful feedback.** Web 2.0 is a digital playground for self-expression in various modalities. Students can record music and voice; create and share presentations; publish photos, essays, drawings, and poems; edit existing works or combine materials to create new ones; and then share their own work and see what others have created. They like exploring new tools and new ideas, and often create uses for a tool that goes far beyond that for which it was intended. Since nothing is final and everything can be edited, as they learn what impact their work has on others, creators can use others' comments, ratings, and discussion to improve and refine scripts, characters, animations, videos, photos, stories, and presentations.

**Design collaborative learning; support social scholarship.** The social nature of most Web 2.0 tools provides new ways to interact with and share data and information. Government reports, business leaders, and state standards have called for students who can work collaboratively. Web tools can help students work in teams—whether they are classmates in the same

room, or partners with students across the country or on the other side of the globe. Tools allow multiple authors and editors to work on a project, synchronously or asynchronously, during class time or after hours from many locations.

**Support goals in national and state standards.** Just look at some of the words used in the current standards:

- inquiry, use of information, technology skills, equitable access, thinking skills, learning skills, information skills, information literacy, social context—*AASL Standards for the 21<sup>st</sup>-Century Learner* (AASL 2007)
- interact, collaborate, publish, variety of digital environments, communication, produce original works, solve problems, responsible use of information, learning, productivity, digital citizenship, select and use applications—*NETS for Students* (ISTE 2007)
- facilitate and inspire; digital age learning experiences and assessments; model digital-age work and learning; professional growth and leadership —*NETS for Teachers* (ISTE 2007)
- learning and innovation skills; information, media and technology skills; life and career skills—*Framework for 21<sup>st</sup> Century Skills* (Partnership for 21<sup>st</sup> Century Skills 2007)

**Teach information literacy; participate in networked public culture.** As content grows exponentially, there is more information to find, to evaluate, and to use. Students need to hone their evaluation skills to separate fact from opinion, to judge authority, to choose appropriate tools, to express themselves clearly, and to participate effectively in collaborative efforts. Although some students use some Web 2.0 tools outside school, they may not use them effectively, or choose the best tool for a task, or discover all the features of the tools they are using. We can help them learn to be analytical consumers and producers of Web content. These same tools are being used by businesses, government agencies, military installations, and others in doing real work in the real world. Online information includes medical blogs, photo blogs, celebrity blogs, political blogs, sports blogs, travel blogs, and more. Mainstream news has responded to citizen journalists by including updates on what bloggers are reporting about world events and encouraging viewers to send in "I-report" videos. The U.S. government has a blog, *Gov Gab*, where five federal employees blog



## 100 Helpful Web Tools for Every Type of Learner

<[www.collegeathome.com/  
blog/2008/06/10/100-helpful-  
web-tools-for-every-kind-of-  
learner](http://www.collegeathome.com/blog/2008/06/10/100-helpful-web-tools-for-every-kind-of-learner)>

In this article by Christina Laun tools are categorized by learning style: visual, auditory, kinesthetic, etc. Visual tools include mindmapping tools, graphing tools, and photo and video tools.

## The Web 2.0 That Works Wiki

<[www.web2thatworks.com](http://www.web2thatworks.com)>

Especially useful at this wiki is the "Master List of Web 2.0 Tools," which correlates Web 2.0 tools and specific instructional situations in which they can be used: identifying similarities and differences; cooperative learning; summarizing and note-taking; reinforcing effort and providing recognition; homework and practice; non-linguistic representation; setting objectives and providing feedback; generating and testing hypotheses; questions, cues, and advance organizers.

## 100 Free Library 2.0 Webinars and Tutorials

<[www.collegeathome.com/  
blog/2008/05/29/100-free-  
library-20-webinars-and-  
tutorials](http://www.collegeathome.com/blog/2008/05/29/100-free-library-20-webinars-and-tutorials)>

Jessica Merritt, author of this article containing links to a wealth of online resources, wrote, "If you've heard the buzz about Library 2.0, but don't quite understand how to implement it, you've come to the right place. The internet is full of webinars, presentations, and tutorials designed to help you take your library to the next level, and we've highlighted some of the most useful of these here. Read on to learn how your library can get with the times."

about the government education resources they use. Traditional media, including newspapers, magazines, movies, books, and television programs, are replete with references to Facebook, blogs, wikis, photo sharing sites, and more. As I write this, President-Elect Obama has announced he will report to the public weekly via *YouTube*. How can schools continue to justify blocking sources that are central to participatory citizenship?

Web tools are tools—much as pencils, paper, crayons, and glue are tools. They can be used in almost every subject area for almost any academic objective. They provide us with an opportunity to bring library media services into the twenty-first century and to harness the power of the many interactive digital resources available for real "library power." These Web 2.0 tools will help us to remain effective, relevant, productive, and competitive in this time of change;



Currently a  
professor emerita at  
University of Central  
Florida, College of  
Education, **Donna  
Baumbach** was

formerly the director of the Florida SUNLINK project, the state's K–12 union catalog. She authored *"Making the Grade: The Status of School Library Media Centers in the Sunshine State and How They Contribute to Student Achievement"* <<http://www.sunlink.ucf.edu/makingthegrade>>. She retired in 2007 and now resides near Asheville, NC. She calls "WebTools4U2Use" her first "retired, but not dead yet" project.

to reach beyond the walls of the school library media center and the school to interact with students and teachers; to provide them with new ways to access, explore, and create information; to involve them in dialogue; and to create community. Perhaps most importantly, these Web 2.0 tools allow us so many new opportunities to focus once again not on the tools or technology, but on our learners.

## Works Cited

- American Association of School Librarians. 2007. "AASL Standards for the 21st-Century Learner." <[www.ala.org/ala/aasl/aaslproftools/learningstandards/AASL\\_LearningStandards\\_2007.pdf](http://www.ala.org/ala/aasl/aaslproftools/learningstandards/AASL_LearningStandards_2007.pdf)> (accessed December 26, 2008).
- International Society for Technology in Education. 2007. "NETS for Students 2007." <[www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS\\_for\\_Students\\_2007.htm](http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS_for_Students_2007.htm)> (accessed December 26, 2008).
- . 2008. "NETS for Teachers 2008." <[www.iste.org/Content/NavigationMenu/NETS/ForTeachers/2008Standards/NETS\\_for\\_Teachers\\_2008.htm](http://www.iste.org/Content/NavigationMenu/NETS/ForTeachers/2008Standards/NETS_for_Teachers_2008.htm)> (accessed December 29, 2008).
- MacArthur Foundation. 2008. "New Study Finds Time Spent Online Important for Teen Development." <[www.macfound.org/site/apps/nlnet/content2.aspx?c=1kLXJ8MQKrhH&b=2024163&content\\_id={3A699BFD-3FA0-4793-8328-9E542E5280C9}&notoc=1](http://www.macfound.org/site/apps/nlnet/content2.aspx?c=1kLXJ8MQKrhH&b=2024163&content_id={3A699BFD-3FA0-4793-8328-9E542E5280C9}&notoc=1)> (accessed December 23, 2008).
- Partnership for 21st Century Skills. 2007. "Framework for 21st Century Skills." <[www.21stcenturyskills.org/documents/frameworkflyer\\_072307.pdf](http://www.21stcenturyskills.org/documents/frameworkflyer_072307.pdf)> (accessed December 27, 2008).
- Pew Internet and American Life. 2008. "Writing, Technology and Teens." <[www.pewinternet.org/PPF/r/230/report\\_display.asp](http://www.pewinternet.org/PPF/r/230/report_display.asp)> (accessed January 6, 2009).
- . 2007. "Teens and Social Media." <[www.pewinternet.org/PPF/r/230/report\\_display.asp](http://www.pewinternet.org/PPF/r/230/report_display.asp)> (accessed January 6, 2009).
- Wikipedia. 2008. "Web 2.0." <[http://en.wikipedia.org/wiki/Web\\_2.0](http://en.wikipedia.org/wiki/Web_2.0)> (accessed December 22, 2008).

Copyright of Knowledge Quest is the property of American Library Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.