

## INSTRUCTION 2.0

What are we actually doing?

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### ABSTRACT

This survey looks at Association of Research Libraries' (ARL) instruction websites to identify publicly available Library 2.0 tools focused on user education. The reasons for each tool's presence or absence are discussed and an overall assessment of the current state of the use of these tools in the field is offered.

## INTRODUCTION

Librarians have written about and discussed web/library 2.0 tools, but the current state of adoption of the tools on instruction websites is tentative at best. As more successful examples are shared in the literature and at conferences, and as the technology and understanding of the tools matures, they will move from being something intimidating to being simply another color in the instruction paint box.

Library 2.0 is an idea that grew out of the concept of Web 2.0 as envisioned by Tim O'Reilly and others. The Web 2.0 concept is defined by such terms as "web-as-platform," "perpetual beta," and "architecture of participation," and can be considered an "attitude, not a technology" (O'Reilly, 2005, p. 1). Web 2.0 allows users to participate in the creation and remixing of content in various ways and functions as a platform to enable this interactivity. Maness calls it a "matrix of dialogues, not a collection of monologues" (Maness, 2006).

Based on this general development of the web, librarians soon began to envision how Web 2.0 attitudes and the accompanying technologies might be useful in accomplishing traditional lecture-based library instruction goals (Godwin, 2006). Michael Casey and Laura Savastinuk provided the following definition of Library 2.0:

The heart of Library 2.0 is user-centered change. It is a model for library service that encourages constant and purposeful change, inviting user participation in the creation of both the physical and the virtual services they want, supported by consistently evaluating services. It also attempts to reach new users and better serve current ones through

improved customer-driven offerings. Each component by itself is a step toward better serving our users; however, it is through the combined implementation of all of these that we can reach Library 2.0." (2006).

For academic librarians, the challenges posed by this development will only become more important as the next generation of students arrive. According to the Pew Internet and American Life project report *Teens and Social Media*, 93% of teens aged 12-17 use the internet, and 64% of these have created some form of online content (Lenhart, 2007). These students will expect to use these technologies in college as well, and librarians' task will be to help them to use these online tools effectively to accomplish research tasks, just as librarians are accustomed to assisting students with more traditional resources.

New technologies should not be implemented just because they exist. They must address pedagogical objectives to warrant adoption (Dewald, 2000). The interactive nature of web-based technologies makes them well suited to active learning strategies. Exercises and projects that incorporate active learning and student autonomy can be useful in encouraging intrinsic motivation, which has been shown to be a powerful factor in student engagement (Jacobson, 2004). Library 2.0 tools also lend themselves particularly well to constructivist and inquiry-based methods of learning by allowing students to investigate topics both on their own and in groups and to share the results of their investigations. They also allow students to help shape the direction of the course in collaboration with the instructor and the rest of the class (Sharpless Smith, 2007). Students are familiar with and value the interactivity and visual stimulation online

tools offer (Armstrong, 2006).

The literature includes shining examples of Library 2.0 projects, and these examples illustrate the promise of these new technologies for libraries as well as the amount of work required to produce them. Blogs, instant messaging, Facebook, and YouTube have been used for both instruction and outreach purposes. In one case, the library provides access to 2.0 tools for the entire campus community (Cohen, 2007).

## LITERATURE REVIEW

The Association of College and Research Libraries (ACRL) defines widely used standards for information literacy competency. Information literacy is intended to form the “basis for lifelong learning” and is therefore “central to the mission of higher education.” Information literacy skills are required in “student-centered learning environments where inquiry is the norm, problem solving becomes the focus, and thinking critically is part of the process” (2009). Maryellen Allen takes this further and maps the five ACRL standards to defining features of critical thinking skills. She then suggests that the ACRL standards are at least in part espousing a constructivist pedagogy, focusing on “the phrase ‘...construct a framework for learning how to learn....,’ saying that “This sentiment represents the very essence of constructivism and demonstrates ACRL’s advocacy of a constructivist-based approach” (Allen, 2008, p. 33). This connection with constructivism is vital to understanding the instructional possibilities inherent in web/library 2.0 tools. If constructivism is defined by such characteristics as “learner inquiry and discovery, learner autonomy, and self-motivation of the learner,” and if

“constructivism seeks to place the learners in an open-ended learning environment in which they build their own meaning from new knowledge, new content that they construct” (Leonard, 2009, p. 38-39), then the ability of 2.0 tools to create or facilitate this type of educational experience will directly determine their utility for developing students’ information literacy skills as defined by ACRL.

There have been numerous case studies and other reports of individual uses of these tools for both library and other educational purposes. Most of these studies have focused on an individual tool and how it was used in a particular circumstance, and there is some evidence from these examples that constructivist methods are well suited to these tools. Lee, et al. (2008) see really simply syndication (RSS) feeds as a way “...to promote engagement in networked, collaborative idea generation and sharing...” (p. 316). They conclude that 2.0 technologies must be integrated more fully into university curricula as a whole and see RSS as a means of developing a connection between these various other technologies (Lee, 2008). Heafner and Friedman (2008) offer an example from secondary education of how a student-created wiki utilized principles of constructivism in a social studies course. Students who participated in the section of the course involving wikis showed markedly better recall than those in a concurrently taught section using more traditional methods such as quizzes and test preparation. Blogs, as free or low-cost, easy-to-implement tools, have been attractive to library instruction librarians for some time. In a June 2005 survey (Coulter, 2006), 36.1% of librarian respondents said that they had used blogs for information literacy-related activities. In the same article, the use of blogs for library instruction was found less than successful,

with 73.1% of students surveyed reporting that they “never checked their class research blog” (p. 105). This was largely thought to be due to insufficient marketing and to the fact that the blogs in question were related to one-shot instructional sessions, rather than to semester-long courses. In a more recent survey, 41.6% of librarians in academic libraries cited instruction as the purpose of their blogs (Draper, 2008). An innovative class lesson in Egypt uses the participatory nature of the Flickr online photo sharing tool to teach about tagging, folksonomy, and related concepts. Students “. . . took photos of their groups; uploaded the photos to *Flickr*; selected tags and wrote a description” (Bussert, 2008, p. 5). The constructivist nature of this lesson is evidenced by statements such as, “The instructor became a facilitator, available for consultations. This participative approach allowed students to lead the conversation about tagging and folksonomy, even if they did not fully understand the concepts at first” (Bussert, 2008, p. 5). Examples such as this are evidence that Library 2.0 tools can be an effective part of constructivist pedagogy.

Assessment of the success of online technologies in library instruction has also focused on individual tools or projects. An early study in this area comparing traditional in-class instruction to a web-based, interactive tutorial found to the researchers’ surprise that online instruction was as effective as live instruction (Germain, 2000). Subsequent research has confirmed this result. A study at the University of Illinois at Chicago, Purdue, and Notre Dame found that students did significantly better on a test measuring students’ knowledge of library resources after completing a multimedia show created using Macromedia Flash software. These results were not affected by gender, class

rank, or previous knowledge of library resources, and the authors of the study felt that this was an indicator of the widespread utility of the multimedia format. Students in this study expressed the desire for multimedia websites on other library topics, with many indicating that they would recommend these sites to a friend (Markey, 2005). Beile and Boote (2005) examined the efficacy of online versus face-to-face library instruction by comparing three groups of students taking the same course in different formats. One group was taking the course in a traditional, on-campus format and was given a face-to-face library instruction session. The second group was in an on-campus course as well but was given a web-based library tutorial, while both the course and the library tutorial were online for the third group. All three of these groups showed significant improvement in their library skills as measured by a self-efficacy survey and a library skills quiz, although the authors point out that it would be beneficial to analyze the students’ performance on actual research assignments as a more authentic measure. Researchers concluded that web-based library instruction is a viable replacement for some traditional library instruction sessions (Beile, 2005). Similar methods were used in a study at the University of South Florida, where 295 undergraduate students could choose to attend face-to-face instruction sessions or to complete an online tutorial as an extra-credit assignment for a psychology course. Upon completion of each session, students took a quiz to measure their mastery of the content, which was carefully constructed to be equivalent in both formats. Students who took the online tutorial did as well as those receiving face-to-face instruction, and they overwhelmingly preferred the online option (216 selected this option, compared to 79 who chose the in-person session). Based on the success of this tutorial, university

librarians plan to create similar tutorials for other courses (Silver, 2007).

Clearly, there is a practical and pedagogical basis for the use of Library 2.0 tools to teach information literacy skills and concepts. The question is whether or not we, as instruction librarians are taking full advantage of these new tools, and if not, why not?

## METHODOLOGY

One hundred and twenty-two ARL libraries' instruction websites were searched for publicly available Web 2.0 tools being used in the service of information literacy instruction. Data was collected between February and April 2008.

A list of thirteen types of tools (Instant Messaging, Media, Interactive Content, Plug-Ins/Widgets, RSS feeds, Blogs, Wikis, Social Bookmarking, Media Sharing, Student Created Content, Social Networking, Gaming and Second Life) to investigate was adapted from a presentation given by Ellyssa Kroski at the ACRL New York Conference in November 2007 (Kroski, 2007). While most lists of 2.0 technologies mirror this list fairly closely (O'Reilly, 2005; Blowers, 2008; Maness, 2006), the Kroski list was chosen because of its presentation at a well-known conference related to the libraries under investigation and because of its general library-related focus. Once this list was established, the following research process was implemented:

1. Find instruction homepage of each ARL library.

Determining the instruction homepage was sometimes difficult, as the names of the pages varied, as did their degree of integration with other areas of the websites.

Instruction homepages were identified based on the pages' content in cases where titles were unclear.

2. Examine tutorials/research guides looking for 2.0 tools, stay within 3 clicks of the instruction homepage.

This portion of the research was concerned with answering the question about each tool: Is it there? Every tutorial/research guide link was followed, including bibliographers' subject guides (if and only if they were directly linked from the instruction page). If the tools included in the above list were present, they were accounted for qualitatively, and then examined in light of the 3<sup>rd</sup> step.

3. Go through tutorials to see what they address and how they work.

Tutorials that seemed to use 2.0 tools or concepts were examined to see if they truly introduced a new way of presenting material, or did they use traditional techniques of instruction with added multimedia elements. The questions asked about each type of tool here were:

- a. Is it publicly accessible and, if not, what login/affiliation is required?
- b. What is the level of interactivity/participation?

### *Limitations of Research*

The objective of this research was to examine the instructional use of Library 2.0 tools on publicly available instruction websites to determine whether the tools are actively being promoted by instruction departments. Because this research was

primarily concerned with instructional uses of these tools, the search did not go outside of instruction pages to other sections of library websites, although it is acknowledged that there are some interesting innovations in more general use that might inform instruction librarians as they introduce their own initiatives. These tools are also being used in classroom instruction situations and course management systems, either as an integral part of the course or as a topic of discussion. These uses were not considered in the present survey because they are not generally available but are limited to those who are able to attend the course. Therefore,

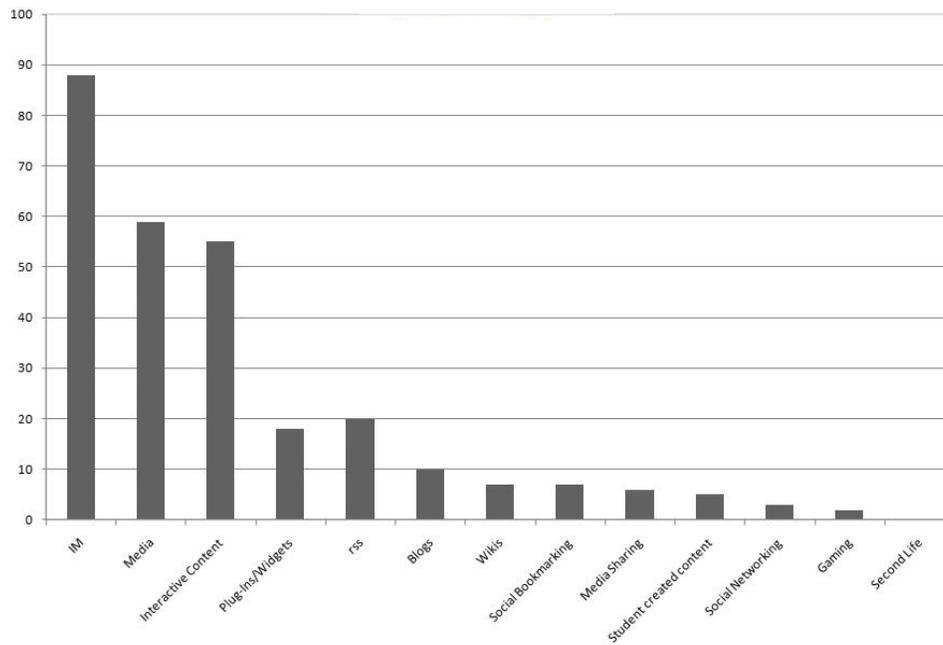
they fall outside the scope of O'Reilly's original definition of Web 2.0 (O'Reilly, 2005), specifically the idea that 2.0 tools "get better the more people use them" (p. 2). This survey was also limited to those tools that were freely available without any type of required login for the same reason, specifically that the restriction of the tools by affiliation or other criteria interferes with the culture of participation that is one of their main strengths.

## RESULTS

As seen in Table 1 and Charts 1 and 2, there was a definite prevalence of certain

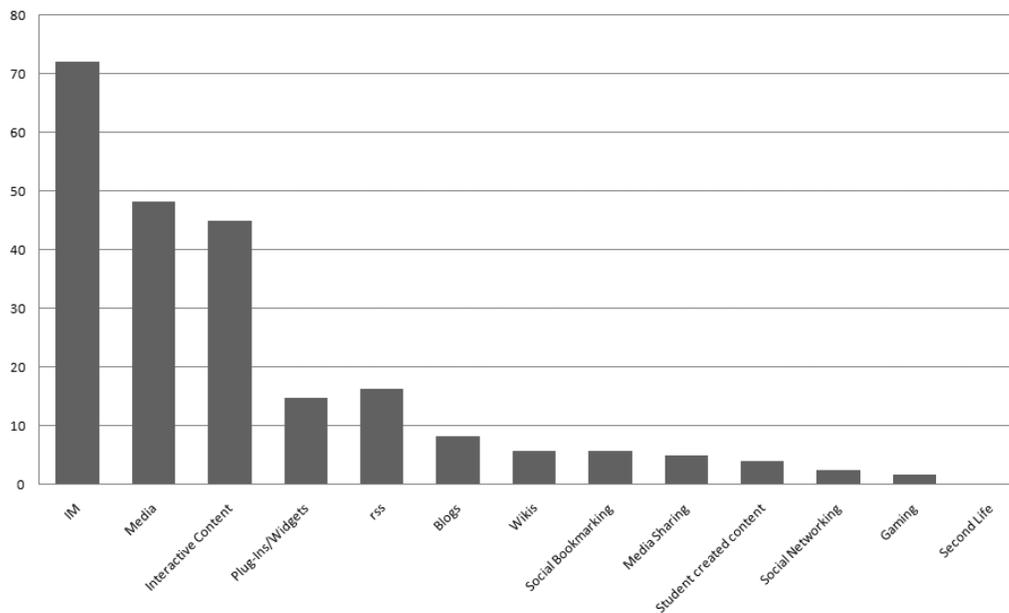
<b>TABLE 1 – TOTAL NUMBER OF SCHOOLS USING EACH WEB 2.0 TOOL.</b>		
<b>2.0 tools</b>	<b>Number of schools using each 2.0 tool</b>	<b>Percent of schools using 2.0 tool</b>
<b>Instant Messaging (IM)</b>	88	72.1
<b>Media</b>	59	48.4
<b>Interactive Content</b>	55	45.1
<b>Plug-Ins/Widgets</b>	18	14.8
<b>Really Simple Syndication (RSS)</b>	20	16.4
<b>Blogs</b>	10	8.2
<b>Wikis</b>	7	5.7
<b>Social Bookmarking</b>	7	5.7
<b>Media Sharing</b>	6	4.9
<b>Student Created Content</b>	5	4.1
<b>Social Networking</b>	3	2.5
<b>Gaming</b>	2	1.6
<b>Second Life</b>	0	0.0

CHART 1 — TOTAL NUMBER OF SCHOOLS USING EACH 2.0 TOOL



Of 122 possible schools

CHART 2 — PERCENTAGE OF SCHOOLS USING EACH 2.0 TOOL



tools and absence of others on libraries' instruction pages. An analysis of possible reasons for this follows in a discussion of individual tools.

## INDIVIDUAL TOOLS

The following discussion is organized around the following three questions.

- *Is it there?*
- *Is it publicly accessible? If not what login/affiliation is required?*
- *What is the level of interactivity/participation?*

### *IM*

*Is it there?* The use of instant messaging programs to provide point-of-need access to librarians was the most widespread new technology found on instruction websites. Out of 122 libraries surveyed, 88 had some form of instant messaging available directly from the instruction site. In many cases, this service was created in conjunction with reference departments, which is understandable given the common goals of instruction and reference librarians.

*Is a login required?* A few of these instances required a brief login such as an email address, but in most cases the service was provided through an immediately available interface such as the Meebo widget (an easily added tool that enables users to instant message the site owner directly from a website without having to download anything or create a new account).

*What is the level of interactivity/participation?*

The nature of instant messaging means that interactivity is built in. IM enables a real-time conversation between the website user and an online recipient of the message. Most

websites made the instant messaging tool available on every page, a design point that is crucial to ensure that it is used. The ease of implementing this technology (students don't need any special software and the widget can be added to the site with a few lines of cut-and-pasted code), as well as the great benefit to patrons of immediate feedback may explain why this was the most popular tool on library instruction web pages.

### *Media*

*Is it there?* Types of media used included standard video, Flash, Captivate/Camtasia screen-capture tutorials, podcasts, and other audio tutorials. Fifty-nine of the institutions (48%) utilized some form of media to provide instructional content on their instruction websites.

*Is a login required?* No login is required due to the way media was used in the examples found on instruction pages, as explained below. The majority of these tools were meant to be viewed online, but the podcasts were available to download for later use.

*What is the level of interactivity/participation?*

Student participation was not a major feature in these tools. Aside from a few students appearing in a video here and there, librarians created and delivered the content in much the same way as they might do in a lecture-based instruction session or on a static webpage. Because of this lack of interactivity, it is debatable whether these tools can really be considered Library 2.0 tools at this stage of their development.

### *Interactive Content*

This category is broad, considering that

ideally all web/library 2.0 tools are interactive to some degree. Most of the tools in this category could also be called interactive tutorials because they present the instructional content and then provide a review of it either through a quiz or other means.

*Is it there?* Quantitatively, this type of instructional tool was the third most popular among ARL instruction librarians, with 45% of instruction pages having some sort of interactive tutorial.

*Is a login required?* No login is required to view most of this content; however, some of the tools do offer a login for affiliated students who want to receive course credit for viewing it. Since this option doesn't restrict non-affiliated users from using the tools, they still fit under the definition of 2.0 used in the study.

*What is the level of interactivity/participation?* The level of interactivity varied widely among instructional sites. The majority of the interactive content was limited to the standard click-through tutorials with quizzes that have been around for years. While these tutorials are useful, particularly in conjunction with course-based instruction, there was not much evidence that students could add to or change the content. The concept of opening at least some content to alteration by users seems to be one of the main stumbling blocks to really implementing 2.0 philosophies on instruction websites. Enabling users to contribute examples, comments, or questions to these tutorials would be a way to start allowing more substantial interaction. If doing this in a completely open fashion were deemed too risky by site sponsors, students could be allowed to download and remix the tutorials and then submit them for review in a special

section of the site. This type of user interaction would probably work best in conjunction with a course but could also be left open to all students without additional effort. The best student tutorials could then be incorporated into the main site for a wider audience.

### *Plug-ins or Widgets*

This category includes such things as browser plug-ins for bibliographic tools such as Zotero, library catalog search boxes and various widgets useful for research purposes.

*Is it there?* Eighteen schools or 22% of ARL libraries included something of this type on their instruction website.

*Is a login required?* The catalog/search-box plug-ins found of necessity had been customized to each library's system, and some of these resources required a login. Instruction pages referred to the other tools in this category in more general terms. For instance, they provided text explaining what the tools were and how they might be useful for research purposes. This information was available to anyone.

*What is the level of interactivity/participation?* Overall, instruction websites linked to or described the tools, rather than providing a direct means to use them. This type of tool offers an excellent way to introduce new technologies to the library website without having to overhaul the entire layout. Widgets and plug-ins tend to be relatively small in terms of both file size and screen real estate. Because many of the most popular are available for free download, they can be a low-cost means of experimenting with more participatory instruction methods. If staff time and expertise is available, libraries could create

useful widgets of their own and share them with the library community as a whole.

## RSS

Really Simple Syndication (RSS) is a way to syndicate web content so that users can be alerted when frequently updated content changes without having to visit the original website.

*Is it there?* Twenty of the instruction websites visited used RSS.

*Is a login required?* No login is required. The nature of RSS makes it available to anyone able to browse to the website. The content presents automatically on an open website.

*What is the level of interactivity/participation?* Instruction pages made use of RSS for one of two basic purposes. The most common use was to announce new or updated online tutorials, videos, or podcasts. Once aware of these materials, students can be alerted when something new is available, and if interested they can click through to the content related to the RSS message. The other appearance of RSS on instruction sites was as the subject of tutorials explaining what it is and how it might be used in a research context, for instance by subscribing to search feeds available through various online databases or news feeds from media sources.

## Blogs

A weblog is an easily updated website, usually created by an individual or small group, which allows readers to post comments in response to original postings and to other comments, facilitating discussion of a topic. As evidence of the general popularity of this format, Technorati

(a blog index) has indexed 133 million blog records since 2002 (Technorati, 2008).

*Is it there?* Ten instruction sites either referred directly to blogs as sources of information or were blogs themselves. This study did not look at course-related blogs unless they were directly linked from the instruction page because these blogs are not intended for general use, so they did not meet the definition of 2.0 as used in this study.

*Is a login required?* No login was required to view the original postings, but commenting was restricted on several of the blogs.

*What is the level of interactivity/participation?* The most common use of blogs was to communicate news. On the blogs that allowed open commenting, there were few comments, which may indicate that for the most part the blogs are functioning more as an easily updated website than as a forum for conversation. One notable exception, which is not an instruction site per se but in many ways is used for instruction, is Chad Boeninger's business blog (<http://www.library.ohiou.edu/subjects/businessblog/>) at Ohio University. At the time of this writing, there was a poll set up on this blog asking basic questions about the library, including questions relating to search strategies. The immediate feedback provided by this poll is an example of a simple way to engage users with more participatory content while still accomplishing instructional goals.

## Wikis

A wiki is a piece of software that enables people to create and edit web pages via a browser (Wiki.org, 2002). The ease of the

process encourages collaboration among users and allows for the possibility that everyone can contribute content.

*Is it there?* Wikis were used on seven of the instruction websites surveyed. One entire instruction site was a wiki, and most of the others used wikis as a means of creating subject guide pages. One website simply discussed what wikis are but did not actually use the technology.

*Is a login required?* None of the wikis were open to the general public for editing, but approximately half of them did allow the viewing of history, and one school allowed those affiliated with the school to register to login, although it was unclear what privileges would be granted once this was done.

*What is the level of interactivity/participation?* The level of interaction varied from none to minimal. It is understandable that the main pages were locked down to librarian-only editing, as these are the public face of the department, and graffiti at an inopportune time could prove disastrous. For the subject pages, however, it would be useful to allow students to at least comment on or add to content, even if such additions were limited to a student area of the site. Students in relevant departments could share their opinions on various resources with their peers, and librarians could get a better idea of how students use the materials recommended.

### *Social Bookmarking*

Social bookmarking is a means of saving links to websites and adding metadata in the form of user-created tags, often referred to as a folksonomy as opposed to a more formalized taxonomy.

*Is it there?* Seven of the schools' instruction websites made reference to these tools, mostly by providing a link to save a tutorial page on Delicious or Facebook.

*Is a login required?* For the one site that allowed user participation, logging in was required.

*What is the level of interactivity/participation?* Only one site actually allowed affiliated users to tag a page. This function was not limited to the instruction pages but was available throughout the library's website. At the time of this writing, there were 1162 unique tags in this system, most dealing with course-related topics or resources. Clicking on these tags provides library resources selected by peers or other academic community members, and so the function of these tag clouds can become a constantly updated resource guide for a particular class or subject. Like any folksonomy, the tags can be idiosyncratic at times, but students use similar methods for non-research purposes, and these methods can be useful at least in the beginning stages of serious research or for course-related work. This type of user-generated metadata is also useful as an introduction to a discussion of more developed forms of categorization schemes using controlled vocabulary.

### *Media Sharing*

For the purposes of this study, media sharing is defined as creating media and then making it available for others to download, remix, or share. This definition does not include simply linking to others' materials.

*Is it there?* Only 6 of the 122 libraries' instruction sites made materials available in this manner to one degree or another.

*Is a login required?* For those wishing to customize the TILT tutorial described in the following, registration is required. The other materials were accessible without a login, but the right to alter them or reproduce them varied depending on the individual example.

*What is the level of interactivity/participation?* Most actual use of these tools/materials was by librarians rather than patrons, although except for the consortial agreements there is no reason why any user couldn't use them as well. Probably the most well known and shared example is the Texas Information Literacy Tutorial (<http://tilt.lib.utsystem.edu/>) (University of Texas, 2004), which can be downloaded and customized by any school. Other examples included videos posted to YouTube, materials shared by consortia, and materials made available under a Creative Commons license. An example of this type of sharing among librarians (though not promoted to students at this point) is the Animated Tutorial Sharing Project (<http://ants.wetpaint.com/whatsnew>), on which instruction librarians make their tutorials available online for others to use or adapt.

### *Student/User Contributed Content*

*Is it there?* Considering the participatory nature of Web 2.0, the author of this study hoped that there would have been more to find in this area. Only five of the schools surveyed had some form of user-created content. On two of the instruction websites, there was some evidence of direct student participation in the creation of videos or captivate tutorials. This number might be higher if behind-the-scenes technical assistance were factored in. The other three schools had open forms for users to enter suggested content for the site or other feedback about the website. Feedback mechanisms such as quizzes, suggested

courses, or suggested items for purchase were not considered to meet the criteria for this category as they do not really provide an opportunity for direct participation in the creation of content.

*Is a login required?* Given the small amount of student-generated content on instruction websites, it is difficult to tell. However, there were no clear means available for non-affiliated users to contribute their own content.

*What is the level of interactivity/participation?* The student participation (as actors or technical assistants on video projects) that was present in these few examples seems to have occurred before the materials were made available online. However, most if not all of the tools examined in this survey could be opened to students' ideas and technical skills to generate new content focused on instruction topics. Simply allowing comments or tagging of online instructional materials would provide students with a way to be heard at the point when they are trying to use the materials. User submissions would also provide instruction librarians with a current view of what students are looking for, which they could then use to revise or create new materials. Providing downloadable content or a platform on which to edit existing materials would allow students to express themselves creatively, developing an understanding of the content in the process. It might be naive to expect many students to do this on their own, but most aren't accessing static content without a bit of encouragement either. Additionally, it would be simple to incorporate this type of participatory exercise into a course-related assignment, perhaps as extra-credit or a contest if time constraints precluded it being a requirement.

## *Social Networking*

*Is it there?* Only three of the institutions made direct reference to Facebook or other social networking tools on their instruction websites.

*Is a login required?* Facebook and similar sites require an account, but anyone is eligible to open one, regardless of affiliation so this is not an obstacle to participation.

*What is the level of interactivity/participation?* The main way these types of programs were promoted was by offering downloadable widgets to be used for searching of the online catalog, WorldCat, or online journal collections from within the social networking space. Instruction sites also offered basic information about what the sites were and how they could be used in conjunction with these widgets to facilitate research. Many libraries undoubtedly have a presence in Facebook or MySpace; however, only three instruction websites were actively promoting this presence during the research period.

## *Gaming*

Gaming is not strictly a 2.0 phenomenon, but many of the educational benefits of the medium are similar, particularly if a game is offered freely over the internet. These benefits are discussed at length by Gee (Gee, 2004) and Prensky (Prensky, 2006). Levine addresses gaming with a specific focus on library applications (Levine, 2006).

*Is it there?* Only one library in this study was found to be promoting gaming as an instructional tool.

*Is a login required?* No login was required; anyone could participate. Players can choose to create a login in order to leave the

game and return later at the same point in the game.

*What is the level of interactivity/participation?* Games are inherently participatory, so where they are present, the level of interactivity is high. While typically ARL libraries did not take advantage of games as an engaging way to convey instructional content, the one ARL library that did use this method (Ohio State University – “Head Hunt” game) did so extremely well. That university’s game introduces basic library information and policies in a fun way that will surely be used and retained by more students than a simple list of information. The only other school that even mentioned gaming on its instruction website did so in order to highlight the games available in the library collection, which is interesting but not the focus of this study.

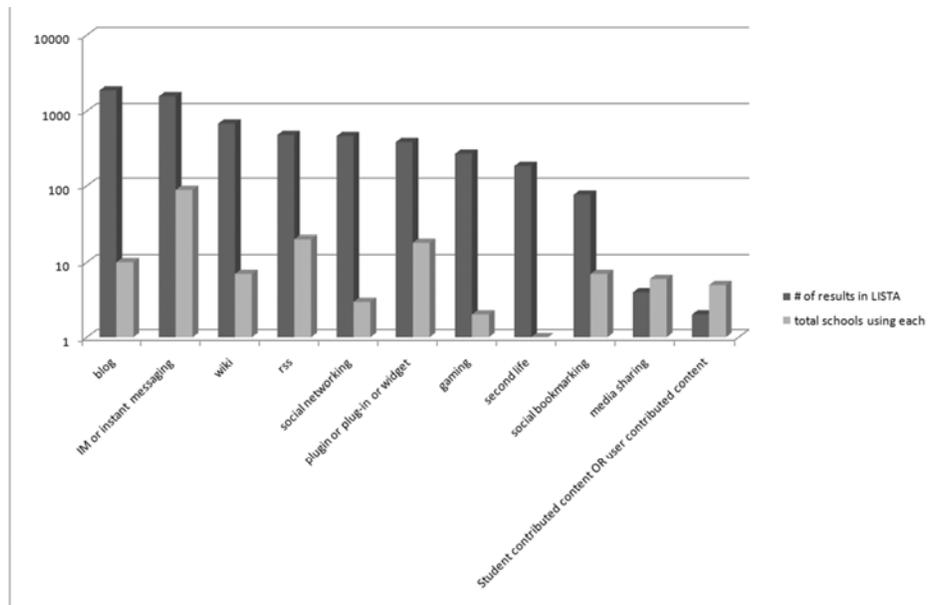
## *Second Life*

Second Life or similar virtual worlds are being touted as an exciting way to engage and reach students who cannot or do not want to visit the library in person. The instructional uses of this type of environment have been shown to be effective in other subject fields (EDUCAUSE, 2008) but do not seem to be widely utilized for library instruction at this point.

*Is it there?* There were no instances found of ARL libraries’ instruction pages referring to or featuring the use of this technology for general information literacy instruction.

*Is there a login? What is the level of interactivity/participation?* Because no examples of the use of this technology were present on instruction websites, these questions do not apply.

CHART 3 — LISTA SEARCH RESULTS COMPARED TO TOTAL NUMBER OF SCHOOLS USING EACH TOOL



### COMPARING THE LITERATURE TO THE REALITY

Table 2 and Chart 3 compare the usage of each tool to the discussion of that tool in the literature. In order to compare the talk to the action, each of the tools investigated in this study (media and interactive content were omitted as they were too broad and returned many irrelevant results) were used as a keyword in a search of the LISTA database. The LISTA database was chosen as a technology-oriented information science database useful for getting an idea of how the use of 2.0 technologies on library instruction websites compares to the discussion of these technologies in the literature. While a more rigorous study of this relationship would require examination of multiple databases and a more complete set of library websites than examined for this research, it is hoped that this small sample will at least help to identify possible trends. For the most part, the degree of

implementation of these technologies mirrors the amount they have been written about, with a few notable exceptions. A basic search in the LISTA database reveals that social networking, gaming, and Second Life are written about disproportionately to their actual presence on library instruction websites.

Part of this discrepancy can be attributed to the fact that the literature search was not restricted to only instruction articles, but also included any library-related mention of these tools, whether or not instruction was mentioned. This search strategy was adopted because most of the applications of 2.0 technologies written about in the context of other library departments could easily be adapted for instructional purposes. Aside from their actual utility, social networking, gaming, and Second Life are frequently written about and experimented with because they are fun and excite the imagination. Unfortunately they also require the most time and expertise to use well.

TABLE 2 — COMPARING THE LITERATURE TO THE REALITY		
Search terms	Number of results in LISTA	Total schools using each (of 122 possible schools)
<b>Blog</b>	1879	10
<b>Instant Messaging</b>	1563	88
<b>Wiki</b>	679	7
<b>Really Simple Syndication</b>	481	20
<b>Social Networking</b>	464	3
<b>Plugin or Widget</b>	387	18
<b>Gaming</b>	271	2
<b>Second Life</b>	182	0
<b>Social Bookmarking</b>	76	7
<b>Media Sharing</b>	4	6
<b>Student-Contributed Content OR User-Contributed Content</b>	2	5

IM, widgets/plug-ins, and RSS were written about fairly often and were the most used technologies on instruction pages. As has already been mentioned, this is likely due to ease of implementation and low cost in both time and resources.

Table 3 and Chart 4 illustrate the degree of adoption of 2.0 tools by examining how many different tools each school is using. It is evident that most schools are starting slowly with these technologies. Although few ARL libraries have implemented the more ambitious types of projects possible with these technologies, 112, or 91%, have attempted at least one of them.

## CONCLUSION

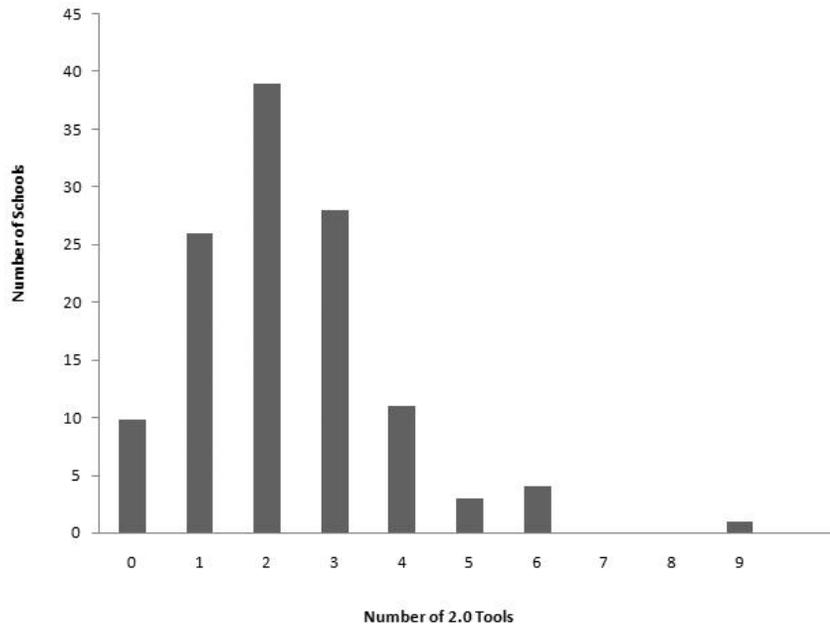
*Is it there?* All but one (Second Life) of the 2.0 tools included in this study were in use by at least one ARL library’s instruction website. This is evidence that instruction librarians in these libraries are aware of the technologies and interested in experimenting with their instructional value.

*Is a login required?* Most of the time, existing content within each tool could be viewed without a login; however, several websites did allow for account creation, particularly with interactive tutorials when students wished to receive course credit. Required login was present on the one site that allowed posting tags to a social bookmarking tool and on several of the blogs for those who wished to comment.

*What is the level of interactivity/participation?* Interactivity or participation, varied widely, depending on the tool used and how that tool was implemented. In general, the level of participation was low except for the instant messaging tools, although there were a few examples of other technologies such as blogs being used in more interactive ways.

There is a clear desire among instruction librarians to experiment with 2.0 technologies, as evidenced by the high rate of adoption of at least one of the tools examined previously. As might be expected,

CHART 4 — USAGE OF 2.0 TOOLS ON INSTRUCTION WEBSITES



Of 122 possible schools

TABLE 3: USAGE OF 2.0 TOOLS ON INSTRUCTION WEBSITES	
Number of 2.0 Tools Used	Number of Schools Using 2.0 Tools (of 122 possible schools)
0	10
1	26
2	39
3	28
4	11
5	3
6	4
7	0
8	0
9	1

more libraries have started by using instant messaging or another easy-to-implement tool; however, both this study and the individual examples cited in the literature found that there are some more ambitious librarians willing to attempt more labor intensive projects.

While there are clear pedagogical goals that can be met with some of these tools, instruction librarians must be careful not to invest too much time in their development without seriously considering whether their goals in using the tools are already being met as effectively with traditional instruction methods.

Developing an original game from scratch will require a significant amount of time and technical expertise, not to mention funding (see the discussion of the planning and funding process for one such game at <http://librarygames.blogspot.com/2007/07/another-session-information-literacy.html>), but creating a wiki or blog can be done almost instantly, depending on the platform chosen. Many of these tools do not require an enormous amount of time to initiate. In fact, they are often designed with the specific intention of being easy to start using. Once an initial level of fluency is gained, more complex implementations can be attempted, keeping in mind that as with most instructional methods, it will be an iterative process that constantly needs to be reviewed and changed to meet the changing information environment.

Once librarians and students become accustomed to using the simpler 2.0 tools

already available on instruction websites for instructional purposes and see evidence that they do indeed work to improve information literacy skills as described in the ACRL standards (Association of College and Research Libraries, 2005), they may be more inclined to engage with library 2.0 technologies that require more investment in time and more user participation. Examples from the literature such as the Flickr-based lesson in Egypt (Bussert, 2008) show that

students appreciate the chance to participate using 2.0 tools and that taking that risk can help students see the relevance of information literacy concepts to their daily lives. Once the idea of allowing students more

INSTRUCTION LIBRARIANS ARE OFF TO A VERY GOOD START WITH 2.0 TECHNOLOGIES BUT ARE STILL RETICENT ABOUT ALLOWING TOO MUCH ACCESS TO THEIR MATERIALS.

access to directly participate in the creation of instructional tools and other online library materials is more widely accepted than it is today, instruction librarians will be able to support the constructivist pedagogy underlying many of the ACRL standards, not only in the classroom and the library but also anytime, anywhere.

Instruction librarians are off to a very good start with 2.0 technologies but are still reticent about allowing too much access to their materials. It is this philosophical aspect of library 2.0, the idea of a culture of participation allowing everyone involved to add to the final product, which may prove most difficult to implement. Since instructional librarians are used to exercising professional judgment and skill when organizing information, it is difficult to allow students to alter carefully constructed instructional materials in their learning process. However it is this same

aspect that offers librarians a way to integrate constructivist ideas of student-centered, student-directed learning while ensuring that key concepts of information literacy are not diluted along the way. The key, both for instructional success and for institutional support, is to find ways of connecting the benefits of the tools to recognized instructional objectives.

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