Virtually Yours:
Online Embedded Librarianship in Higher Education

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While embedded librarianship has been in existence within higher education settings for quite some time, the proliferation of online learning opportunities and e-courseware products has generated an increase in options for librarian engagement in higher education coursework and course platforms. In online settings, faculty members, students, and librarians can engage in new ways, with exciting technologies, and using innovative strategies. The literature review included here provides readers with a wealth of readings to increase their familiarity with this topic. This article discusses the process of “embedding” a librarian (individually and institutionally); best practices for the use of technology in embedded settings; the management, readiness assessment, marketing, promotion, and evaluation of embedded librarianship and its efforts; and the value of collaboration within this environment. Additionally, the authors share a variety of web-based tools suitable for embedded collaborations, broken into four categories: digital learning object repository tools, content management tools, remote storage and collaboration tools, and synchronous and asynchronous learning and engagement tools. A brief discussion on the future of embedded librarianship in higher education concludes this article.

Keywords: embedded librarianship; online learning; e-learning; distance learning; instructional technologies; higher education; open access; information literacy.

Virtually Yours: Online Embedded Librarianship in Higher Education

Increasingly, academic librarians are teaching and supporting online students who they will never see face-to-face. As a result, librarians must use technological tools to reach those students in meaningful ways and to create a presence virtually when face-to-face encounters are not possible. Use of web–based tools, including social media, enables librarians to embed in e-learning communities.

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Librarianship, according to Shumaker (2012), are relationship, shared goals, and customized, high-value contributions (p. 6). The differences between traditional and embedded librarianship are anticipatory, in the case of embedded librarianship, as opposed to responsive in traditional librarianship; a team of collaborators versus the individual customer; customized versus standardized; ongoing projects versus single transactions; and partnership versus service. In short, librarians are in the midst of a redefinition of their relationships with their communities and embedded librarianship is a name given to this change (Shumaker, 2012, p. 13).

Background and Literature Review

Collaborations between a librarian and a learning community are unique. The types of services provided are customized and based on the needs of the particular group. A community can be a class, an academic department or program, a student organization, and so on. In higher education, embedded librarianship seems to have originated with liaison librarians working with and supporting subject- or discipline-specific students and faculty (Dale & Kellam, 2012, p. 30). The term “embedded librarian” was borrowed from the “embedded journalist” idea that came into use during the invasion of Iraq (Dewey, 2004, p. 6). Embedded journalists are deployed with troops; their goal is to report on what they witness, not to take part in the events they observe. Embedded librarians, on the other hand, actively engage with their user communities. They teach information literacy skills, frequently geared to specific assignments (Dale & Kellam, 2012, p. 31) at the “need-to-know” time. Often, librarians are able to work with faculty in developing assignments or even create assignments themselves. Librarians who are embedded in course management systems (CMSs) actively participate in online classes. This can take a number of different forms, such as participating in discussion boards, providing LibGuides, instructional videos, assignments, and other digital learning objects for use in class. These materials can be linked to or embedded in the CMS.

Embedded librarianship also has roots in the healthcare field of the 1960s when librarians accompanied doctors and nurses on their hospital rounds (Shumaker, 2012, p. xiii). Medical librarians lead the way and have done outstanding work in this area. David Shumaker, author of The Embedded Librarian, Innovative Strategies for Taking Knowledge Where It’s Needed, spent more than three years studying embedded librarianship programs on behalf of the Special Libraries Association, from which he received a grant to carry out his research. As Janice Lachance, CEO of the Special Libraries Association, states in the Foreword to Shumaker’s book (2012), Shumaker makes a case for “a model of librarianship based on community, flexibility, accountability, relevance, and responsibility” (p. xiv). He visited a number of organizations with embedded librarianship programs, conducted interviews and focus groups with librarians and their user communities, and made his own observations.

Liaison librarians were frequently associated with specialized branch libraries. Margaret Feetham (2006) dated the origins of subject specialist librarians to the University College London in the early 1900s (p. 3-17). Within a few decades, these librarians were well-established in Great Britain and the United States. Rudasill (2010) noted that reference, instruction, and cataloging, in addition to collection development, were sometimes included in the duties of subject librarians (p. 83).
The literature indicates that the primary focus of embedded librarianship at colleges and universities is the instruction mission. In his book, Shumaker (2012) provides, in table format, an extensive inventory of the embedded information literacy instruction programs described in the English-language professional literature from 2000 to 2011 (p. 49-50). Full citations to those publications can be found in the Recommended Reading list on his blog (http://www.embeddedlibrarian.com).

Shank and Dewald (2003) talk about micro and macro embedded information literacy instruction (p. 38-43). As discussed by Shumaker (2012), micro involves collaboration between librarians and faculty that results in customized instruction for each course (p. 51). Macro involves the creation of a more or less standardized library web presence that can be linked to or embedded in any course.

Hemmig and Montet (2010) highlight that interactivity is critical for a successful embedded librarian presence in online teaching (p. 668). This includes interaction between librarians and online learning staff, between librarians and faculty, and, in particular, between librarians and online students.

For two-year community colleges, the teaching mission of the institutions is their focus. The primary contributions of librarians are in information literacy instruction. However, in institutions that grant bachelor’s degrees as well as graduate and professional degrees, research and service are also expected. The literature indicates, though, that teaching is the primary focus for embedded librarians at these institutions, also. There is a huge diversity of embedded information literacy instruction in higher education (Shumaker, 2012, p. 48-49).

In some cases, librarians are full partners with subject faculty in that they create syllabi together, design research assignments that include the use of information literacy skills, share teaching responsibilities, and even collaborate in grading papers. In other cases, the librarian is more of an “addition” to the course, rather than a full partner. This might include teaching one or more sessions, attending classes, and setting up consultations with students to help in their research. In other instances, instruction is delivered through standardized, self-paced modules (Shumaker, 2012, p. 51).

Strategically, librarians can participate in university-level curriculum development teams and work with faculty to identify the most appropriate places in the curriculum in which to embed information literacy instruction.

Best Practices in Embedded Instruction Technology

Shumaker (2012) makes the critical recommendation that librarians should use the same technology that instructors and students are using for other course activities (p. 53). If librarians do not use these same technologies, it is less likely that students or faculty will utilize librarians’ contributions. Course management systems, for example, are being used increasingly in blended and face-to-face instruction, as well as in distance learning. Librarians must have a presence in this venue in order to be most effective in information literacy instruction.

Management

Since embedded librarianship can quickly become a 24/7 proposition, it is essential that library management be supportive of staff involvement in embedded instruction and that librarians set
parameters on when they will be available to students and faculty. It is important to recognize this from the very beginning. Staff may have to spend less time at the service point or in other activities so that more time can be allocated to a librarian’s research and consultation commitments. Students in classes who have embedded librarians usually contact their “designated” or “assigned” librarian for assistance.

Collaboration with Faculty

Hoffman and Ramin (2010), in particular, recognized the need for active collaboration with faculty. Having a very clear understanding of the embedded librarian’s role in the class is critical to its success. At Texas A&M University-Corpus Christi, the embedded librarian in select Nursing classes has a BlackBoard-based “Library Corner” discussion board to which she can post recommendations to students, as well as respond to their library and research-related questions. At the University of Memphis, librarians embedded in University College senior capstone courses have an “Ask the Librarian” discussion board. This posting area was initially placed at the bottom of the list of course discussion boards but, as of the Summer 2012-2013 session, was relocated to the top of that list so that students would not miss this valuable discussion board, which is otherwise organized chronologically for course assignments and weekly discussions.

Faculty members have substantial power to dictate the terms of librarian involvement in an online course. Thomsett-Scott and May (2009) note this fact in their article “How May We Help You? Online Education Faculty Tell Us What They Need from Libraries and Librarians.” Useful library and librarian contributions to online courses are listed in Table 3 of the article (p. 118). The top three contributions students perceived were providing library resources, offering instruction on using databases and indexes, and (tied for third) offering information literacy development assistance and providing useful databases. Table 6 (p. 121) indicates common areas of student difficulty with information and resource use, as reported by surveyed faculty members. Overall, student lack of awareness as to what tools and resources should be utilized for their assignment was a significant, recurring, and telling concern on behalf of faculty members.

Additionally, Thomsett-Scott and May’s surveying highlights several impacts upon students when they do not plan ahead or take assignments seriously (p. 121). Among these reported issues are ill-timed interlibrary loan (ILL) or distance student item delivery requests; lack of time to prepare, learn resources, and/or ask questions of their human resources. Surveying also illuminated the fact that, when faculty are unaware of or feel unable to effectively utilize critical library resources, their students are then at a disadvantage, as faculty may not be able to make appropriate or effective recommendations at the point-of-need. These critical library resources will include ILL, chat, one-on-one research consultations, library-developed online tutorials, and much more. Embedded librarians have key opportunities to view discussion boards, have their own virtual consultation space(s), and voice suggestions that take a certain amount of pressure and stress off the shoulders of instructors while not interfering with course content.

When faculty members express student skill weaknesses or their own areas of unfamiliarity with library services, ask for updates on holdings and research tools, and make inquiries as to how their online course environment might be improved for
their students, librarians are presented with an opportunity to lend support and tailored services throughout an entire course or assignment. Without faculty voices in this discussion, librarians can only hope students will visit the libraries in person or virtually and that the student can express the kind of assistance they need if and when they do reach out to a librarian.

Readiness Assessment

Shumaker (2012) notes that assessments of readiness must be done for the librarian and also for the organization (p. 128-131). The two are not the same. Elements of the librarian's readiness include:

- having the necessary skill sets;
- knowledge of the subject area of users;
- understanding the political and organizational context; and
- motivation in establishing strong, collaborative, working relationships with user groups.

On the other hand, elements of organizational readiness include:

- support of executive champions,
- good mid-management relationships between the library manager and the user-group managers,
- enthusiastic library users respected among their peers and managers (these users can help light the spark for the program), and
- management culture that encourages innovation and experimentation and that supports delegation and autonomy at the middle and lower organizational levels (Shumaker, 2012, p. 128).

A statement from Shumaker (2012) rings true: “Innovation gets weighed down with reviews and approvals until it grinds to a halt” (p. 131). It is critical to have an organizational climate that encourages pilot projects and reasonable, well-thought-out risk taking in getting efforts such as this underway.

Marketing and Promotion

The importance of word-of-mouth publicity cannot be overstated. If a few members of the user group are receptive to the idea of embedded librarianship and appreciate what that service can offer, chances are those individuals will communicate successes to peers. Presenting at new employee orientations is another way to reach out to communities. Emphasize the benefits of the service to potential customers—the “What’s in it for me?” principle (Shumaker, 2012, p. 167).

Specifically in regard to virtual librarianship and embedded work, the authors suggest reading Veal and Bennett's (2009) “The Virtual Library Liaison: A Case Study at an Online University,” where several key elements of librarian involvement in the virtual classroom are addressed, including collaboration in the course development process, reference or research assistance transactions, course content review, and more. Not only are these important terms librarians can use when marketing opportunities and options to faculty, but these are also key phrases that faculty can use in word-of-mouth suggestions to other faculty members—particularly in cases where a faculty member has indicated a need for certain kinds of assistance or noted particular types of assignments. Another faculty member could easily suggest reaching out to and/or collaborating with a librarian to aid in their student outcomes and retention rates, and other course-related points of assessment. Tenure-track faculty might
be especially interested in efficient and effective collaborations, to raise retention and enhance evaluations.

E-mailing instructors before each term reminding them that embedded librarians are available and can assist students in their research, teach information literacy skills, and help students in completing assignments may spark interest. Timing of the message is crucial. When faculty are working on syllabi and planning their courses is the time to remind them of embedded librarian services—not at the beginning of the semester when things are most hectic.

**Delivery of Value-Added Services**

According to Shumaker (2012), the definition of “value-added” is constantly changing, so librarians’ work must change, as well. Management writers such as Thomas Friedman and Daniel Pink have voiced similar concepts, as quoted by Shumaker, “What can be automated, will be. What can be outsourced or ‘offshored’ will be” (p. 170).

Librarians must first understand the needs of their users, and then employ their specialized skills to meet those needs. In higher education, different models of information literacy instruction have been used from highly customized classes to online, self-paced tutorials. Librarians have served as team members on curriculum development committees and have been able to influence the incorporation of information literacy learning objectives and instruction into the most appropriate areas of the curriculum (Shumaker, 2012, p. 171). Librarians have also helped to establish data management plans in fulfillment of National Science Foundation (NSF) grant requirements. They have helped spread the word about open access publication and alternatives to traditional forms of scholarly communication.

In the medical world, Kacy Allgood, an embedded librarian with Indiana University’s School of Medicine’s Department of Emergency Medicine, provides information services to the Indianapolis Emergency Medical Services (EMS). Known as the “ambulance riding librarian” (http://www.ambulanceridinglibrarian.com/), Allgood exhibits the lengths to which librarians will go to support their communities of users, and her role highlights the resourcefulness and creativity institutions and organizations can employ for the benefit of their constituencies and stakeholders.

Another aspect of “value-added” efforts would benefit library science students. Faculty members of all disciplines should be cognizant of and perhaps sympathetic to the need for experience among students within graduate schools. Institutions using adjuncts and PhD candidates as course instructors, now legion, may find those groups of faculty members especially welcoming to library science students having (supervised or unsupervised) opportunities to instruct library sessions, especially at lower levels in the curriculum or in general education required courses. Lillard, Norwood, Wise, Brooks, and Kitts (2009) use this concept in their article “Embedded Librarians: MLS Students as Apprentice Librarians in Online Courses.” Such opportunities provide the Master of Library Science (MLS) candidate with a number of marketable skills, including: critical “relationship management techniques” (p. 12-13), experience with apprentice, mentor/mentee, and/or team-based instruction, and real-world understanding of the real and user-created barriers to student-librarian contact in embedded settings. Additionally, MLS candidates gain valuable wisdom about what users feel would be useful to have and whether users use the requested service(s)
enough to substantiate adequate return on investment.

Another strong point of the Lillard, Norwood, Wise, Brooks, and Kitts (2009) article is the fact that this program has been implemented several times, in several environments, at several institutions, with a variety of results. This holds importance for faculty and librarians because groups of students differ, and thus users differ, instructors (and their goals) differ, and pedagogy and technology change over time. Continuous experimentation and evaluation are key elements in developing, understanding, and tweaking an embedded program or relationship, and in predicting what will best set up an effort for success in the future.

Continuing Evaluation and Communication of Evaluation Results

Different measures may be used in evaluating programs: counts of activities, such as numbers of reference questions answered and numbers of documents delivered; anecdotes about the impact of services, and outcome and impact metrics. If information literacy can be shown to improve student academic performance by, for example, raising the caliber of references in research papers, that measure shows impact of the program. More and more emphasis is being placed on accountability in education generally, and in higher education particularly, so learning outcomes and impact metrics should be used. Course management systems keep track of the number of logins and the number of postings made by each student in a course. A university tracking system could be used to compare the academic performance of students enrolled in courses with embedded librarians with that of students who are not enrolled in such courses, as long as privacy concerns are taken into account (Shumaker, 2012, p. 189). Then, develop an action plan with expected outcomes and completion dates.

Evaluation results must also be communicated to stakeholders. All parties need to understand whether or not embedded librarian programs are effective. If not, steps should be taken to see how the program might be improved. Consistent communication must take place in order for this to happen.

Summary of Best Practices

Shumaker (2012) quotes R. A. Cooper, "Every example of embedded librarianship relies on two key elements: relationships and relevance" (p. 323). Additionally, Shumaker (2012) provides a strong overview of best practices from several authors, including:

Heider (2010):
- Get buy-in from stakeholders.
- Attend user-group meetings.
- Teach and serve as guest lecturers.
- Publish and present with faculty.

Cooper (2010):
- Read pertinent e-mail lists.
- Go where the action is—student union, offices, labs, studios, dorms, and so on.
- Be pro-active in response to the need for current information—provide news alerts, for example.

Dene (2011):
- Start small and work up. Try a pilot program.
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- Talk about library resources and services at orientation sessions.
- Collaborate with other units, such as IT, the Writing Center, the Distance Education Office, and faculty development centers.
- Assess.

Miller (2011):

- Seek out conversations with user groups.
- Participate in department events (p. 60-61).

Web-Based Tools

A plethora of web-based tools exist which can be used to enhance the educational experience. There are so many tools available that selecting the right one to use in any given circumstance can be overwhelming. Many of these tools can be divided into categories: digital learning object repositories and tools, content management tools, tools for remote storage and collaboration, and synchronous and asynchronous/recordable learning environment tools.

Digital Learning Object Repositories and Tools

Educators do not have to reinvent the wheel. There are an increasing number of sites that provide videos, animated tutorials, podcasts, presentations, and many other digital learning objects which can be used freely for educational purposes as long as credit is given. The Multimedia Educational Resource for Learning and Online Teaching, also known as MERLOT (http://www.merlot.org/merlot/index.htm), developed by California State University, is an excellent site and one of the first of its kind. Rice University’s Connexions (http://cnx.org/) is an open repository of educational materials. YouTube (http://www.youtube.com/) is, of course, a favorite source for videos and it even has an education channel (http://www.youtube.com/education) that includes course lectures from top teachers around the world, speeches, and inspirational videos. The newly-launched Digital Public Library of America, or DPLA (http://dp.la/), is a partner with HathiTrust Digital Library (http://www.hathitrust.org), itself “a partnership of major research universities and libraries working to ensure that the cultural record is preserved and accessible long into the future” (HathiTrust, 2013). It contains millions of books and thousands of periodicals, including public domain and copyrighted content from a variety of sources.

The Library of Congress American Memory Project (http://memory.loc.gov/ammem/index.html) provides access to a wealth of historical material, including images and maps. There is a section for teachers and an “Ask a Librarian” service to get help from an expert. PBS LearningMedia (http://www.pbslearningmedia.org/) is a clearinghouse for accessing video, audio, documents, images, and interactive teaching/learning games for educational use. OER Commons (http://www.oercommons.org/), an open educational resource, is a non-profit organization providing openly-licensed educational resources. And the list goes on.

Content Management Tools

Wikis, blogs, journaling, discussion boards, and Google+ all offer ways to share content. Buffy Hamilton’s curated “Embedded Librarianship” on Scoop.it! (http://
is a great site for sharing ways in which librarians are embedding among their user groups. She also has a useful presentation on SlideShare “Taking Embedded Librarianship to the Next Level: Action Steps and Practices” (http://www.slideshare.net/ALATechSource/taking-embedded-librarianship-to-the-next-level). Hamilton made the presentation for the American Library Association’s TechSource Workshop. Both are fine examples of content delivered via the Web. Wikis, such as Wikispaces Classroom (http://www.wikispaces.com/), are particularly useful when collaboration is needed. All parties can contribute to these wiki sites. Wikispaces also has room for discussions. Google Drive (https://drive.google.com/), formerly Google Docs, also allows users to collaborate in creating documents. An example using WordPress (http://wordpress.org/), a blog tool, publishing platform, and CMS, is the Research Coordination Network for Climate, Energy, Environment, and Engagement in Semi-arid Regions (or RCN CE3SAR, see http://sites.tdl.org/southtexasustainability/), an NSF-funded South Texas sustainability project. It collects, presents, and distributes digital material related to or produced by RCN CE3SAR. This WordPress site is part of the Texas Digital Library (www.tdl.org), a state-wide repository. As part of the research team, a project librarian adds information to the project site.

Tools for Remote Storage and Collaboration

atives and non-natives of the digital information age will view and understand remote storage differently. These two groups often intersect in classroom settings. Librarians can serve as dynamic collaborators in this environment with regard to problem solving, emerging technology awareness, and assisting students and instructors in accomplishing classroom goals while developing valuable technological literacies. As institutions of higher education, as well as schools at the primary and secondary levels, choose to turn away from popular content management systems such as Blackboard and Desire2Learn, the ways in which they host and provide course content to users will also need to shift.

One common intersection of problem solving and librarianship often emerges in course assignments, particularly where research and research resources come into play. Midler (2012) discusses a collaborative effort using Google Docs, where an instructor shared editing privileges for class assignment documents with Midler, a school librarian. The documents were posted on the class website, where students could then not only access their assignments but their assignments now included tailored instructions from a librarian. This is an innovative use of Google Docs in the sense that assignment collaborations between instructors and librarians are far less common than other collaborative uses of Google Docs. Beyond documents, Google Drive has a wealth of other tools useful for librarians, instructors, and students including a calendar function, a presentation creation tool, Google Sites (for free, easy web design), Google Vault (for archiving purposes), and Google Moderator (for crowdsourcing and idea submissions). The calendar function could be employed for office hours, librarian appointments, and appointment reminders, while Google Moderator could permit lecture customization, project/assignment brainstorming, and more. For more information on Google Docs and other Google Drive “apps” for education, interested read-
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Dropbox (http://www.dropbox.com), similarly, is a remote storage tool allowing users to share folders and/or particular items with collaborators. Innovative uses of Dropbox, courtesy of a Lifehacker post from The How-to Geek (2010), include:

- the ability to encrypt files using TrueCrypt, (e.g., for course grade documents or other files needing security);
- using shared folders for team-based projects such as student group work, publication collaborators, and so on;
- making useful information—shortcuts, fact sheets, and even PDF e-books—mobile for the researcher(s) on the go; and
- employing Dropbox as the equivalent of your “My Documents” folder.

As a backup for file storage, or a convenient alternative to carrying a USB drive, students and faculty alike will find Dropbox and its mobile app useful for accessing important documents on the go. Readers who have an interest in the discussion of security, privacy, networked learning, and file encryption may want to read Menchaca’s (2012) article in the Journal of Library Administration.

A particular boon of Dropbox storage is the ability to access previous versions of a file through the web interface, in case one needs to view a specific, non-current version of a file. This would serve student groups well, but also provides a powerful editing and storage platform for publishers working with an editor(s). This often occurs at a distance as edits are now commonly made to PDFs and sent electronically to publishers, reviewers, and compositors, and backup files and versions may prove critical during the course of such projects.

Other products are also enabling Dropbox enhancements. VLC (formerly standing for VideoLAN Client) and the use of file transfer protocols (or FTPs) also offers users options for remote desktop access and networked file transfers; OneNote offers a notebook sync with Dropbox to allow remote access to class notes and lectures. Dropbox alternatives worth investigating as productivity tools include Opera Unite, Weave, Cheddar, and TagMyDoc.

For those needing to provide remote storage, remote access, and networked learning to students and collaborators using a variety of information formats (e.g., text, audio, images, and video), Evernote and Edmodo can also provide a useful space to connect and engage. The higher education edition of the EDUCAUSE Horizon Report (Johnson, Adams Becker, Cummins, Estrada, Freeman, & Ludgate, 2013) envisions apps such as Edmodo and Evernote will become more heavily used in bring your own device (BYOD) and multi-device scenarios, especially where group work, note taking, and multiple formats are concerned.

Librarians can work with instructors to create projects for students within these productivity and remote storage tools that enhance student skills development, better prepare students for research and other course projects and expectations, and provide useful and dynamic assistance to students at a distance. Popular library “scavenger hunts” could be made more interactive and technology-friendly by compiling the strengths of these tools (especially Evernote and Edmodo) to enable students to capture and post examples of primary resources for in-class or discussion board conversation. Faculty may find they have a behind-the-scenes expert who can suggest friendly amendments to assignment language within Google Docs, other Google
Drive for Education apps, and Dropbox. This could enable students to better understand the task at hand, might encapsulate general frequently asked questions (FAQs) and assignment-specific content from the library’s perspective, and should provide other useful insights into the assignment’s description and constructions, such as developing information literacy learning outcomes.

**Synchronous and Asynchronous/Recordable Learning Environment Tools**

Instructors and librarians alike must communicate and assist students within synchronous and asynchronous course environments, as well as in blended or hybrid contexts where courses are not taught exclusively online or in-person. While Google Moderator (see the Tools for Remote Storage and Collaboration section above) provides strengths for the student, instructor, or librarian working on a presentation, additional products exist to assist in engaging students in their learning environment. Here are a few:

- **Skype:** free video and voice calls with anyone else on Skype; free voicemail service; low rates for calling worldwide mobile and landline numbers; fee-based group video calls, call forwarding, and text messaging; available for desktop, mobile, tablet, TV, and home phone use; file sharing and screen sharing capabilities; integration with Facebook contacts and chat. Diane Cordell (2012) discusses the distinct benefits of Skype in the educational environment, stating that “Skype allows for a rich diversity of interaction: between teacher and librarian, librarian and librarian, librarian and student, expert and student, or student and student. It is the perfect vehicle for creating conversations for learning as an embedded librarian” (p. 8). For more details about the free and fee-based features of Skype, see http://www.skype.com/features; for additional information on Skype and distance education, see http://education.skype.com/projects/1783-distance-learning-with-skype.
- **Google+ Hangouts:** Google+ comprises an individual’s profile, circles, communities, photos, Hangouts, and mobile Google+; connects individuals across computers, devices, and operating systems; enables use of photos and “emoji” (akin to emoticons) in a Hangout to create a fun, visually engaging environment; free video calls with up to ten individuals/locations; the archived, YouTube-accessible “Hangouts On Air” recording of a Hangout, useful for webinars and collaborating (see Pamela Vaughan’s HubSpot blog post here: http://blog.hubspot.com/blog/tabid/6307/bid/32751/Google-Launches-Hangouts-on-Air-to-the-Masses-What-Marketers-Need-to-Know.aspx); publicly accessible schedule for public viewing of a Hangout to support and/or enhance course content. Students watching a scheduled Hangout On Air featuring museum curators as part of a museum studies or art history course, or viewing a gene patenting discussion for a medical ethics course, would have an opportunity to interact with experts in relevant fields, engage with a global learning community, and gain insights into educational content delivery methods. See http://www.google.com/+learnmore/hangouts for additional details.
Pearson's Open Class: Create/manage courses; add/manage content; a social learning environment with user profiles, statuses, and networks; study group creation options; Google tool integration for document creation/sharing/editing; conversation and discussion enabled with Google Chat and Skype features for organic, collaborative engagement; use of Open Educational Resources (OER) through platforms like Ted-Ed, Khan Academy, YouTube EDU, and other resources using Creative Commons licensing. See http://www.openclass.com/open/home/what for more information, and see their blog (http://www.openclass.com/blog) for news and developments, such as the Open Course Library, complete 11-week courses featuring completely OER content.

Cisco WebEx, Adobe Connect, Citrix GoToMeeting, and Blackboard Collaborate: offer synchronous and asynchronous options; WebEx, Connect, and Collaborate often involve institutional licenses, but individual licenses may be affordable; they often have fee structures and may have limited free use; Blackboard Collaborate is the platform of choice for the international Library 2.0, Global Education, and Global STEMx conferences for live and archived presentations; Adobe Connect is Flash based; these platforms may have features such as limits on number of attendees, screen sharing, document sharing, whiteboard capabilities, limits on numbers of simultaneously shared screens, recording, audio, and attendee chat features, and logo branding options. Overviews of these and other similar products to help you bring online-based learning to online learners can be found through articles at PC World (http://www.pcworld.com/article/239419/business_videoconferencing_showdown_meet_face_to_face.html), Adobe (http://www.getconnect.com/resources/competitiveproductcompare/), Knecht and Reid's 2009 article “Modularizing Information Literacy Training via the Blackboard eCommunity” (see References), and the Elearning Experts WordPress blog (http://elearningexperts.wordpress.com/2012/07/05/choosing-a-webinar-solution/ and http://elearningexperts.wordpress.com/2012/08/09/choosing-a-webinar-provider-part-2/). Those interested in bringing these tools into their online instruction should consult with their institution's IT department. Faculty may also wish to discuss content development with their librarian(s) to explore the creation of information literacy goals, learning outcomes, and remote (a)synchronous library sessions to best suit and benefit the students in an online learning environment.

Massive Open Online Courses (or MOOCs): a currently popular style of online instruction, using many of the tools and resources developed for blended, online, and distance learning over the past several decades; popular platforms include Coursera, Udemy, Khan Academy, Udacity, and EdX; platforms may be for profit, not-for-profit, or institutionally-based; certificates have gained in popularity and the for-credit MOOC is under intense development at the corporate organization and institutional levels; primarily asynchronous learning through videos with embedded quiz elements, readings, quizzes, peer review assignments, and discussion boards; synchronous options include Google+, Twitter, and
Facebook connections with classmates and instructors (thus creating potential for “live tweeting” and Google+ Hangout discussions) as well as occasional coordinated gatherings using MeetUps (http://www.meetup.com). For more information on MOOCs and working with librarians in them, refer to these two documents created by EDUCAUSE: “7 Things You Should Know About MOOCs” (http://net.educause.edu/ir/library/pdf/ELI7078.pdf) and “What Campus Leaders Need to Know About MOOCs” (http://net.educause.edu/ir/library/pdf/PUB4005.pdf), as well as Cantwell’s article “MOOL in a MOOC”—also featured in this issue of Internet Learning.

This list of tools is not exhaustive and there may be more exciting or better-suited options for your institution, your course, or your goals in particular. When working to engage students in the online environment, it is worth getting creative and interactive, and embracing technology; the digitally native students will appreciate the effort and those who are not digital natives may have an opportunity to experience the “new” styles, pedagogies, and means of education that have developed alongside the rest of the online world. In an early 2012 article in Library Journal, Ben Showers highlights the concept of “the academic library as a model of change management” in that it must adapt to new technologies, and serve ever-changing and -shifting communities (and the expectations of those patrons), while under ever-tightening budgets and engaging in activist conversations related to open access, open education, copyright, intellectual freedom, and freedom of speech. Libraries have often been on the forefront of developing and harnessing new methods of and for content delivery and creation, as with “crowdsourcing,” digital archives, gamification, and more. Showers (2012) quotes a senior editor from The Atlantic who stated, “the library sees its users as collaborators in improving the collections the library already has.” Showers (2012) continues, writing:

Libraries and staff suffer from their perceived lack of value within the information supply chain and the continuing devaluing of librarianship as a profession—the same disintermediation and de-professionalization as other industries such as music, media, and publishing. Yet, libraries have been able to utilize their staff as passionate advocates for innovation and user needs, as well as realizing the potential of their location within their communities and public spaces. Using these synchronous, asynchronous, storage and collaboration tools, as well as the digital learning object repository resources, and content management systems featured in this article should aid faculty in better understanding and innovating in the online learning environment. These resources should also enable faculty to feel confident in approaching their librarians and information technology professionals to pursue these technologies, options, and opportunities for creative and engaging content development and delivery. Sodt and Pederson Summey (2009) wrote on using Web 2.0 tools to enhance the interaction between libraries, librarians, and their patrons and, for those interested in approaching librarians regarding opportunities to embed in online and other course environments, their article may provide additional suggestions as to tools and strategies to embed successfully.

As Showers indicates, librarians are “passionate advocates for innovation and user needs” and, in the world of online education, there is still ample room for further
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development and deeper librarian engagement to better meet the needs of its faculty and students.

What Lies Ahead?

We are in the midst of the greatest upheaval in the way information is handled in our society since the age of Gutenberg. We have revolutionized the way we create, store, manage, distribute, and consume information. This change has come about because of the Internet and the Web. Libraries no longer have a monopoly on information. Digital information and communication is ubiquitous—in homes, offices, schools, dorms, everywhere. Librarians must be where their users are. The traditional modes of library service are insufficient. Librarians must stay abreast of rapidly changing technologies, and develop new ways of organizing and new management techniques. Most importantly, we must build new relationships with our information users. We must focus on the needs and priorities of those we serve and determine how we can best address those needs.

Several areas in which librarians can take an active role are in MOOCs, mobile learning, gaming, Google+ Hangouts, in establishing data management plans to satisfy NSF grant requirements, and in open access publication and curating institutional repositories. As Stephen Covey would say (1990), “We must begin with the end in mind.” And in the words of Alan Kay (1989), “The best way to predict the future is to invent it” (p. 1). Great changes bring about great opportunities. We are in an information and knowledge-based global economy, so the information skills of librarians are at a premium. Shumaker (2012) states, “The dominant form of community and corporate behavior is teamwork –embedded librarians must not stand apart; they must place themselves into teams as ‘integral parts to the whole’” (p. 197). The interpersonal, institutional, and technological resources and tools discussed in this article hopefully encourage faculty to assist librarians in becoming part of the course team, as a mediator and an advocate for both faculty standards and expectations and for student needs and concerns.

References


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