



Interactive Options in Online Learning

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Overview and Definition

Online learning experiences, both synchronous and asynchronous, often rely heavily on passive engagement by the learner. However, web-based tools and techniques can transform a synchronous online session from a passive, webinar-style experience into an engaging, interactive online classroom with robust learning activities. Asynchronous learning experiences such as tutorials, learning modules, and online learning objects are even more effective when created with tools that promote interactivity. To be effective in both synchronous and asynchronous settings, online instruction must incorporate different types of interactivity for students (Dixson 2010). *Interactive options* are tools or technology that allow students to actively participate in the online learning experience and contribute to the social construction of knowledge, either synchronously or asynchronously. While there are many ways to incorporate interactive options into online learning experiences, this article focuses on conferencing, collaboration and communication, and guided learning tools for developing learner-centered online educational experiences.

Basis for Current Interest

Common online learning activities such as listening to a recorded lecture, watching a presentation, or reading written material, are often passive, lacking engagement. A study conducted by Mestre (2010) found that only 6% of libraries surveyed about their instructional tools incorporated some form of interactivity in every tutorial they created, and 52% did not provide interactivity at all, and used only passive learning techniques. These passive activities, which do not call for active physical or

mental engagement by the learner, are not ideal for retaining new information (Mestre 2010). However, technology-mediated methods can counteract the passive tendency of the online learning experience (Koh and Lim 2012) and interactive options can help vary the online learning environment, providing multiple modalities to meet students' learning needs. Engagement is integral to student success (Walker and Pearce 2014); librarians can and should use interactive strategies to engage students in new ways.

Current Applications in Academic Libraries and Higher Education

Web conferencing applications, communication and collaboration tools, and guided learning tutorials are not new to academic libraries and higher education, and can be used for various synchronous and asynchronous online applications. Asynchronous online learning experiences use email and course management discussion boards to stimulate communication and collaboration. In synchronous learning environments, instructors often use the chat box and polling features within the web conferencing software to foster communication. Although these tactics are often limited in their ability to facilitate group work, they can help facilitate question and answer sessions and foster communication between students and instructors.

Web conferencing tools provide synchronous sessions and recorded lectures for students in higher education for entire classes, small groups, or one-on-one (Skylar 2009; Smith et al. 2013; Wang et al. 2013). When used for synchronous instruction they allow users to communicate with one another, share information, and simulate a face-to-face classroom experience. These tools are often used for instructor lectures and presentations, but can also be used as a space for group projects, which can be more difficult to facilitate in online environments. Additionally, instructors can use [Google Docs](#) and online interactive whiteboards to help students coordinate and collaborate in writing assignments (Brodahl,

Hadjerrouit, and Hansen 2011; Rowe, Bozalek, and Frantz 2013; Wong, Russo, McDowall 2012; Wood 2011; Zhou et al. 2012). In an attempt to promote interactivity and engagement in face-to-face classrooms, instructors have used clickers and other types of personal response. Anecdotal evidence suggests that the use of polling systems stimulates chatter and “buzz” in the room (Walker and Pearce 2014), and can lead to critical thinking discussions. Such tools can be used in the online classroom to provide more interactive opportunities.

Teaching new skills asynchronously in interactive ways has proved challenging for educators. Videos are abundant and readily used to disseminate information or teach new skills. They are convenient for both the learner and the instructor; instructors have reusable content and learners can watch the video at their own convenience. But videos are often used as passive learning objects: the learner watches and listens to a video without further engagement or interaction with the tool. The next section further explores these tools and how to use them to incorporate more student-centered learning and interactivity in online sessions.

Applications in Academic Library Instruction

Teaching faculty with semester-long courses are not the only educators who can use web conferencing tools; librarians can also use them to hold instructional sessions or research consultations with entire classes, small groups, or individuals. Synchronous online sessions allow students to become more engaged in their learning experience, and web conferencing tools allow for real-time discussion and feedback in class settings. [Skype](#), [Google Hangouts](#), and [Adobe Connect](#) are just three platforms that promote this type of online learning environment.

Skype and Google Hangouts provide free access to anyone with a Skype or Google account. Both tools allow users to share their screens, and in Google Hangouts, participants can take control of the screen of another participant (with permission). This functionality allows a librarian to take over the screen of a student and walk them through a new process or help troubleshoot a problem. Both Skype and Google Hangouts allow up to ten participants

on a call, making these two tools best for small group or one-on-one interactions.

Adobe Connect is a subscription-based web conferencing software that is best utilized for medium to large group instruction in synchronous sessions. While it can be used for small group and one-on-one meetings as well, Adobe Connect's features are best leveraged in larger group settings. Adobe Connect can serve as a full capacity classroom by allowing users to share documents, share the host's screen, and even create a whiteboard on which participants can all contribute. Links are easily pushed out to participants, so they can seamlessly navigate to new content. The ability to record activity in the room allows students to refer back to the session at a later time, allowing Adobe Connect sessions to be turned into asynchronous (albeit passive) learning objects.

Collaboration and group work is an important part of the learning experience (Koh and Lim 2012) and librarians should seek to include interactive group activities in their instruction when possible. Both synchronous and asynchronous online learning experiences are often limited by the difficulty in encouraging active participation and completion of in-class activities. Free online collaboration tools such as [Google Drive](#), [Poll Everywhere](#), and [Padlet](#) can help mitigate this problem by offering ways for students to contribute to the class individually or in small groups, potentially fostering more meaningful conversations (Majid 2014). Students are already using collaboration tools outside of class to work with peers, and libraries can take advantage of this trend by using applications such as Google Docs, a tool with which many students are already familiar (Koh and Lim 2012). In synchronous online sessions, links to these tools can be easily pushed out to participants through the web conferencing software. Use of these three particular tools does not require an account or log-on process for the user (only the host); a link is sent to participants, and they can immediately engage with the tool.

Google Drive applications can also be used to promote group work in synchronous or asynchronous environments. [In one example](#), librarians at Johns Hopkins University used Google Docs to divide students into groups to analyze an example annotated bibliography and answer questions about the strength of the writing sample. Students typed directly into the document, used

the commenting feature, or switched between editing and suggesting modes to communicate with their group members and progress through the activity. [Google Sheets](#) can be used in a similar fashion, but may work best when asking students to participate individually. For example, after learning about methods to evaluate information using the CRAAP test, students could evaluate an article and provide answers in a Google Sheet with prompts about the evaluative criteria. The Google Sheet would walk students through the process of evaluating their information, and they could see and share ideas with each other directly in the sheet. [Google Forms](#) could also be used, with the responses can be shared with the entire group in a Google Sheet after they have been submitted. The semi-public mode of sharing information increases student motivation and participation and encourages students to be more intentional about their contribution (Koh and Lim 2012).

In addition to group work, effective classrooms need an avenue for individual responses, questions, and communication. In face-to-face classrooms, instructors often use clickers to conduct surveys, distribute quizzes, take a pulse check, or stimulate reactions to spur discussion. While clickers do spark action, they put the responsibility on the student to provide the clicker, or at least to remember to bring it to class. Clickers also only work in face-to-face sessions, whereas web applications can be used in both online and face-to-face settings. [Poll Everywhere](#) is a web application that allows students to answer questions via text message, Twitter, or a web link. It can serve as a free option that does not require students to bring clickers, and it can be used in a face-to-face classroom as well as an online synchronous session. Additionally, polls can be left open for a period of time, and in [an example from the Lansing Community College Library](#), embedded in webpages to be answered by students on their own time. Polls can be useful as icebreakers, by asking easy questions, such as [“What is your favorite type of chart or graph”](#) as a warm up in a class on data visualization. Polls can be used to conduct comprehension checks of an entire class, or to help ensure the class is ready to move on. Polls are a great way to start off an online session: instructors can ask [where participants are located](#) to get an idea of the geographic (and sometimes time zone) distribution of participants. The use of polls also helps start off a synchronous session on the right foot by setting

up the expectation of participation in an online environment.

Other class activities may need to involve group discussion. In face-to-face classes, this can be achieved through physically arranging students into groups, and/or using whiteboards to take notes. Whiteboard spaces in online classrooms can be more challenging to create, but there are applications that can simulate this type of tool. [Padlet](#) is a free web application that offers an online wall, similar to a bulletin board or whiteboard, which can be used in a number of ways. The instructor can drop documents and images into the wall, and participants can view the materials without logging in. Participants can post comments and ask questions by adding a note to the wall, simply by clicking and typing on the wall. All participants can see everyone’s notes, and notes can be moved, sorted, and built upon for real-time group collaboration and feedback. Padlet is an interesting interactive tool for mind mapping, developing strategies, outlining, or simply posing questions in online environments. Padlet also can serve as a personal research tool for students, as a way to share resources with peers, or as a group discussion board.

Tutorials are often needed to guide students through using the library website or academic databases. Most often, tutorials are created as videos or as handouts with screenshots and text directions, both of which are passive learning objects. [Guide on the Side](#), developed by the University of Arizona, provides a popup guide on the side of a user’s screen while the user follows the directions at his or her own pace. Instead of watching a screencast video on how to conduct a search in a database, students can use Guide on the Side to walk them through the process step by step. Red Rocks Community College Library created a [Guide on the Side for the U.S. Geological Survey website](#) that not only helps users explore the site, but includes questions for students to check their understanding and an option at the end to submit their answers to their instructor. Interactive tutorials that allow users to go at their own pace and learn by doing are more effective than passive videos or handouts (Mestre 2010). A 2014 study at Santa Rosa Junior College found that there was an almost 55% increase in student performance on skills taught through Guide on the Side tutorials

compared to using passive learning activities (Virtue, Dean, and Matheson).

Librarians can use [Google Forms](#) and [Padlet](#) for quizzes, surveys, or online assignments. With the ability to include images, links, and different types of questions, Google Forms are flexible for many activities. One of the more robust features of Google Forms is the ability to send users to a particular page based on their response. This functionality provides the potential for Google Forms to be used as a “choose your own adventure” type of interactive activity that leads students through a learning experience. It also creates a built-in opportunity for providing immediate feedback. Additionally, responses from [Google Forms](#) are automatically [populated in a Google Sheet](#), which can in turn be used as pre-work for a flipped classroom synchronous session.

Instructional or conceptual videos often do not fully engage a learner, but can be paired with other modalities to be made more meaningful through interactivity. Mestre (2010) found that videos and tutorials that incorporate interactivity are not only preferred by students, but help them learn more effectively. Interactive videos and guided tutorials can be used as asynchronous options to teach new skills or reinforce other aspects of the learning experience. Librarians can develop interactive videos through subscription-based software such as Camtasia, Articulate Storyline and Adobe Captivate, but there are free applications available as well. [Blubbr](#) takes existing YouTube videos and allows the instructor to insert questions at strategic points in a video to help viewers pause and reflect. These types of videos can be used to create basic orientation type videos, [as done by the University of San Francisco](#), or as more in-depth database tutorials or conceptual video. Scores can be assigned and used as grades, or the questions can simply be used to inject more action into a traditionally passive experience. This is a good opportunity for students to engage more deeply in an asynchronous learning experience.

Potential Value

By using interactive technology in synchronous and asynchronous online learning environments, librarians can help transform the online learning environment and create more learner-centered experiences. Librarians can support the online

learning environment at their universities in new ways through the development of relevant and meaningful interactive learning activities. If grounded in sound instructional pedagogy, interactivity strengthens retention and meaning in the learning experience, and can help teach information literacy skills. Interactive options put the emphasis on the learner, helping librarians to focus on a student-centered approach. Interactive activities such as those described here also provide built-in assessment tools of student learning.

Potential Hurdles

Cost, learning curves, and time constraints may make it difficult for some libraries to adopt new technologies, but this is a minor concern for the tools mentioned. While most of the tools discussed have free versions available, a few do require institutional subscriptions. The technology skills needed to use these tools are relatively low - most are intuitive and provide guided instructions in getting started. Web conferencing tools such as Adobe Connect may take longer to learn than other tools, but practicing with a colleague will help make for smooth synchronous sessions with students. The multi-step process of the texting option in Poll Everywhere may confuse students, but using the web response only version to quickly and easily answer polls can mitigate this problem. Guide on the Side requires the most high-level technical skills and institutional support, but the site provides detailed instructions, and an active Google group provides a user community for tutorial builders to learn from each other.

Conclusion

Interactivity can take many forms to suit the one-shot instruction session, a learning module, or a semester long course, and there are many pedagogically sound tools that extend beyond the traditional discussion boards or polling features. Creative use of tools that foster interactive learning can enrich the experience of online learners and lead to more significant learning. Librarians should keep in mind that there are a variety of ways to achieve more interactivity. As Dixon (2010) found, there is no single method that successfully engages all learners. Therefore, instructors should use multiple approaches for interacting with students and create activities that require students to interact with each other. Librarians also have an

opportunity to become online learning leaders and trendsetters in creating interactive, meaningful online learning experiences for students. Walker and Pearce (2014) argue that while librarians do not have control over other factors such as students' previous experience, attitudes, and behaviors, they can influence students' level of engagement in the learning process. Providing interactive options in online environments can help improve engagement, and ultimately, student success.

Tools Discussed

Conferencing Tools

- Adobe Connect: <http://www.adobe.com/products/adobeconnect.html>
- Google Hangouts: <https://plus.google.com/hangouts>
- Skype: <http://www.skype.com>

Collaboration and Communication Tools

- Google Drive (docs and sheets): <https://www.google.com/drive/>
- Poll Everywhere: <https://www.polleverywhere.com>
- Padlet: <https://padlet.com>

Guided Learning Tools

- Guide on the Side: <http://code.library.arizona.edu>
- Google Forms: <https://www.google.com/forms>
- Blubbr: <https://www.blubbr.tv>

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Further Readings

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