

## Polling Tools

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### Overview and Definition

A wide variety of free or low-cost learner response systems allow instructors to easily poll their class using classroom computers or the students' own portable devices, such as cell phones, tablets, and laptops. Instructors can get instant feedback while projecting responses in front of the class. These tools allow for more than just multiple-choice questions, but also open-ended questions, clickable image polls, and polls where the audience can submit ideas and then vote on the best idea. Instructors can move forward if they see most students have understood or re-teach ideas when necessary. Students either get positive reinforcement that they have understood or the chance to rethink their response. This learning occurs in a low-stress environment as the polling is anonymous.

### Basis for Current Interest

The use, variety, and availability of portable devices has increased exponentially in the past few years, and many educational technologies leverage the presence of these mobile devices in the classroom to facilitate active learning and engagement (Burkhardt and Cohen 2012). While research is ongoing on students' acceptance of these technologies in the classroom, institutions of higher learning are investing in pedagogical practices that fortify the technological skills of students through mobile learning (Lacefield 2015).

One such technology, already popular outside of the classroom, is real-time polling, the latest iteration of an audience response system. In 2012, this committee published a "Tips and Trends" about [Classroom Response Systems](#), but are updating it now with a focus on web-based applications for polling. Mobile and online polling has been on the

rise in both social media, including the recent addition of polls in Twitter, and the development of free embedded polling widgets for websites. In the last few years, audience response systems in the classroom have shifted from utilizing hardware components, or "clickers," to web-based applications for real-time polling during instruction. Instructors recognize that the only hardware their students are interested in using are their own personal devices (Olivier 2014).

Educators across institutions recognize the ability of mobile devices to support the pedagogical practices of creating collaborative learning spaces and to reinforce active learning approaches. Where in the past, collaborative learning relied on the physical dimensions of the classroom to increase engagement, mobile and online polling allow students to actively engage with each other and the instructor in the digital sphere.

### Current Applications in Academic Libraries and Higher Education

Student response systems without clickers can be used pedagogically in the same way as those with clickers. Derek Bruff, the director of the Vanderbilt Center for Teaching, maintains a comprehensive webpage about the use of [Classroom Response Systems](#). Suggested types of clicker questions include recall, conceptual understanding, application, critical thinking, student perspective and confidence level questions. Also, classroom response systems can be used for a variety of activities, including summative and formative assessment, discussion warm-up, peer instruction, repeated questions, and choose your own adventure. For an illustration of clicker use, watch the short video [Using Clickers in the Classroom](#) by Russell James from University of Georgia.

A wide variety of clicker-free polling tools are popular in higher education. Differences among these tools include whether student responses are anonymous, the ability of the instructor to moderate comments, support for images and video, open-ended response options, the number of

students who can respond, if responses can be recorded or downloaded, and if registration is required (see Byrne 2016 for a [chart](#) comparing some of these tools). [Google Forms](#) can also be used to create polls and the summary of responses can be displayed for real time results (Cavender 2016; LaGier 2016). Finally, polling does not need to be limited to text; a few multimedia options include Poll Everywhere's [clickable image polls](#) and ClipChoose's [video polls](#).

Instructors can also combine the use of polling technology with low-tech classroom work. For example, Bruff (2015b) described a think-pair-share activity where students think independently on paper, pair up with a partner or small group to discuss the idea, and then share what they discussed using polling software. Hovious (2013) reported on a similar process using "thought questions" developed by Foley and Tsai (2010).

## Applications in Academic Library Instruction

The use of web-based polling software in library instruction is gaining traction, as shown in the literature, especially in concert with mobile learning. Whether in support of collaborative learning, for formal assessment, or as another tool to promote librarian expertise among faculty colleagues, here are some current applications:

### **Collaborative, Contextualized Learning**

In one-shot instruction, student engagement can be significantly enhanced through active learning practices that encourage collaborative learning, where students create meaning and construct their own understandings of session material along with their peers. Students can respond to instructor-led discussions in real-time by asking questions and debating responses via the software. Polling can also help focus students' attention, aid in the design of collaborative peer to peer activities, and direct them in an active learning environment (Lander and Stoeckel 2012).

### **Summative & Formative Assessment**

Assessment is a key component of library instruction and helps the instructor guide a class session based on the prior knowledge and information practices of student learners. In place of written assessment, such as a pre- or post-test, instructors can use polling before and/or after a

class session to gain critical feedback on whether students have achieved the learning outcomes. Most polling programs also have a download function that allows the instructor to later identify patterns and trends in responses (Snyder and Hallam-Miller 2014).

In addition, embedding polls in PowerPoint or other presentation software allows instructors to obtain real-time formative assessment data. This approach can be especially useful for standard instruction, where a template presentation is used for multiple sections of the same course. For example, at Champlain College, librarians used this method to ensure consistency in language and format of both instruction and assessment questions across 31 sections of a first-year information literacy course. This format also enabled deeper discussions of students' information preferences and habits (Burkhardt and Cohen 2012).

### **Faculty support**

More and more, academic libraries are taking on the role of educational technology experts in the academic sphere. As librarians utilize new tools, such as polling software, they are called upon by faculty to provide support by pointing out reviews of these tools or by conducting workshops. At Lansing Community College, where one of the authors of this "Tips and Trends" issue works, librarians presented a [polling tools workshop](#) at the college faculty development center, and introduced polling tools to faculty and staff in the Library during a bi-weekly "Tech Snippet," a short, informal session about new technology.

### **Potential Value**

Polling tools have potential to increase student engagement. Snyder and Hallam-Miller (2014) reminded instructors that anonymity is one often-cited advantage of polling tools. In a one-shot session where instructors do not have much time to build rapport, getting as much student participation as possible from the beginning is essential, and anonymous participation can lower the affective barrier to engagement. Student response systems encourage active learning and increase engagement due to the anonymity they provide students. Munday (2012) used [GoSoapBox](#) in first-year Spanish classes and found that even with small classes of less than twenty students, students commented that the anonymity that came with this

classroom response system relieved the pressure of being wrong and feeling on the spot.

The use of polling technology can also increase student learning as it enables instructors to adjust their teaching based on feedback from students about their prior knowledge or current understanding. Sun, Martinez, and Seli (2013) defined "Plenty-of-Time Teaching" as polling students before class and making adjustments to the lesson based on students' misunderstandings, while "Just-in-Time Teaching" uses polling during class in order to quickly determine what concepts need to be re-taught. Gewirtz (2012) described how asking students about prior knowledge at the beginning of a library instruction session allowed her to tailor sessions at the appropriate level for the group.

Orlando (2013) recommended adding polls to presentations to help keep the audience engaged. Some polling tools, such as [Poll Everywhere](#), can be added to PowerPoint slides. [Swipe](#) can be used to create responsive web-based slide presentations with built-in polling that anyone can view from a mobile device (see Graham 2015 for an overview of how to use it). [Nearpod](#) allows the integration of polls, quizzes, open-ended questions, images and videos into web-based slide presentations (see Bali 2016 for a comparison of Nearpod with Google Forms).

## Potential Hurdles

Unlike the clickers of response systems past, there is less monetary investment in polling software on the part of the student for use in the classroom. However, most software offer subscriptions on a tiered level, and the most basic 'free' accounts can be limiting. For example, [Poll Everywhere](#)'s free higher education subscription only includes a single user login and allows for a maximum of 40 responses per poll. It may be difficult for some larger library instruction programs to work around the free subscription, in which case financial barriers may come to light. However, there are ways to work around this limit. Instructors with large classes could have students work in pairs or small groups to respond to questions.

Considerations need to be made for those students without access to mobile technology, and not all library instruction spaces are equipped with

desktops or library-owned laptops. Librarians can be on the lookout for grants and other sources of funding relevant to their size and type of library, or collect responses verbally while projecting them for the group via their own device.

For those students who do have cell phones or other devices, many times instructors request that they not be used in class, for fear of distracting focus away from course instruction. In this case, highlighting the use of mobile devices may contradict the classroom management practices that the instructor already has in place unless it is planned in a purposeful way (McIntire 2015). Additionally, students may be comfortable with their devices as a means of content consumption and casual communication, but there may be barriers to them understanding their use as a learning device in the classroom. Bruff (2015a) suggests that students are only distracted by mobile devices if they solely use the devices to take notes because their minds are not fully engaged when taking notes. Engaging students through activities like polling leverages existing technology in the classroom. Through planned activities, students learn to be purposeful about the use of technology (McIntire 2015).

## Conclusion

Polling tools can be used by librarians as a strategy for increasing engagement during instruction sessions. These tools have potential to keep student attention and provide valuable feedback about their understanding. Librarians can start using polling in their teaching immediately as there are many free or low-cost tools available.

Best practices for incorporating polling into instruction include:

- Ask only a few questions and don't make the questions too complex.
- Give students time to think when answering questions.
- Practice with the technology in advance.
- Don't overuse polling. If you use it too much, the potential for engagement is lost.
- Ensure that polling questions are tied to learning outcomes.
- Start small by incorporating one or two questions into an instruction session or presentation.

## Tools Mentioned

- ClipChoose: [clipchoose.com](http://clipchoose.com)
- GoSoapBox: [www.gosoapbox.com](http://www.gosoapbox.com)
- Google Forms: [docs.google.com/forms](https://docs.google.com/forms)
- Nearpod: [nearpod.com](http://nearpod.com)
- Poll Everywhere: [www.polleverywhere.com](http://www.polleverywhere.com)
- Swipe: [www.swipe.to](http://www.swipe.to)
- Twitter: [twitter.com](http://twitter.com)

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## Further Readings

Carl Wieman Science Education Initiative, University of British Columbia. Clicker Resources. <http://www.cwsei.ubc.ca/resources/clickers.htm>. This site has a clicker resource guide for faculty, videos and podcasts, a clicker question collection, useful articles and links, and workshop materials.