News

Writing the Book on Clickers

February 24, 2009

Clickers have become **increasingly popular** (http://www.insidehighered.com/news/2008/11/03/clicker) as a way for professors to interact with students and to measure -- during a lecture -- whether information and ideas are being conveyed. As more professors use clickers, experts are considering how these devices can be more (or less) effective. Derek Bruff, assistant director of Vanderbilt University's Center for Teaching, has written a book that reviews the uses of clickers and offers advice for institutions and professors. The book -- *Teaching With Classroom Response Systems: Creating Active Learning Environments* (http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0470288930.html) -- is just out from Jossey-Bass. Bruff responded to e-mail questions about the themes of the book.

Q: How has the use of clickers changed since they were first used?

A: Classroom response system technology is much easier to use and more reliable than it was even a few years ago. This has led to higher levels of adoption of clickers in a variety of disciplines, particularly the social sciences and in the professional schools. Several years ago, clickers were often used to generate small-group discussion around conceptual understanding questions, but as their use has grown, the ways in which they have used have increased in variety. Instructors are now using clickers to enhance team-based learning and case study approaches to teaching, for instance, and to ask critical thinking questions and questions that ask for student opinions and experiences. Writing effective clicker questions is still difficult, however, which is why it has been exciting to see the development of online question banks in several disciplines in the last few years.

Q: How widespread should clickers be? Should we see them everywhere?

A: Certainly not all instructors will find clickers as useful as some do, but clickers are now used in so many different ways and in so many different types of courses that there's potential for them to make a positive impact in just about any class. They allow instructors to ask a question of their students and expect every student to think about and answer the question. Instructors can hold students accountable for their participation by tracking their responses, and students can answer questions without fear of looking foolish in front of their peers. Both of these aspects can greatly enhance student engagement during class. Sharing the results of a clicker question with students can help generate discussion and awareness of different perspectives. The results of clicker questions also provide instructors with information on student learning they can use to make informed teaching choices during class. These are all reasons why clickers can enhance the classroom dynamic in just about any course.

Q: How would you advocate the use of clickers in small classes, or is there less value in using them in a seminar?

A: If the class has fewer than 10 students, most of the students will likely have a chance to talk during a class discussion, so there is less need for a response system. With 15 or 20 students, however, it becomes difficult to hear from every student during class. I have talked to many instructors who use clickers regularly in classes of that size. However, even with 10 or 12 students, instructors often find that clickers provide their students a safe way to respond honestly to tough questions about controversial topics. Students are sometimes hesitant to share their opinions about such questions, even in small classes, so the anonymity that clickers provide is a useful tool.

Q: Are there issues on which colleges should make institutional decisions on clickers (single brand, for example, so students don't need more than one)? Are there decisions that should be left to faculty members?

A: Most faculty and staff members with whom I talk about clickers are concerned with the cost to students of the devices. This has led many campuses to adopt particular brands of clickers so that students need not purchase two or three clickers for different courses. Not only does this save students money, but it makes it easier for staff to provide technical and pedagogical support for faculty members using clickers. The downside to adoption is that if the brand of clickers adopted does not have a particular feature a faculty member is interested in using, that can be limiting for faculty members. Thus, seeking faculty input on adoption decisions is important.

Another institutional decision I hear about is the inclusion in student handbooks of a policy on cheating with clickers. Since many instructors include results of clicker questions in students' grades (grading on accuracy or perhaps just effort), there can be a temptation for students to give their clickers to friends to use during class while they skip class. Including this as a specific example of academic dishonesty in existing honor code policies can provide instructors with a valuable tool for handling this kind of cheating.

Aside from these two issues, most other decisions on using clickers are typically left to individual instructors. Since choices about types of questions to use with clickers, types of activities facilitated by clickers, how clicker questions are included in students' grades, and the like depend so much on particular teaching

contexts, individual instructors are usually in the best position to make these decisions.

Q: Do you see any inappropriate uses of clickers in classrooms?

A: In surveys of students about the use of clickers, it is common to hear students complain about clickers if they are used in ways that do not provide clear learning benefits to the students. For instance, if an instructor uses clickers only to take attendance or give quizzes, students often object to paying for a device just to make the instructor's job a little easier. If, however, an instructor uses the results of a clicker quiz to review the quiz with the students immediately after they take it, focusing on questions most missed by students and exploring popular incorrect answers, students see this as adding value to their learning experience and are more likely to see the clickers as useful.

Similarly, I have seen an instructor pause during his lecture every 15 minutes or so to ask a very simple factual clicker question answered correctly by almost every student. This served to keep the students awake and taking notes, but the questions themselves did not serve to engage the students in any meaningful way with the course material. I suggested to the instructor that he ask clicker questions that required students to apply ideas just introduced in the lecture to particular situations. He very quickly started brainstorming such questions. I find that often after just a little bit of inspiration, instructors quickly start thinking of creative and effective uses of clickers.

Q: If you could improve on existing technology in some way, what are the next features you'd like to see for classroom use?

A: Clickers do a great job of collecting and aggregating student responses to multiple-choice questions. Existing technology does not, however, work quite as well with free-response questions. I am hoping to see the development of input devices that allow students to quickly and easily respond with words, phrases, or sentences. I have spoken with several instructors who have started to use systems that allow students to submit responses via various mobile devices -- cell phones, smart phones, and laptops -- that make it easier for students to do so. These developments are exciting, but there is a need for tools that will help instructors quickly make sense of responses to open-ended questions. Development of such tools would open up a lot of possibilities for these systems.

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Comments on **Writing the Book on Clickers**

Posted by Appalled on February 24, 2009 at 8:45am EST

One click means yes; two clicks means no. Click Click. That helps, huh?

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