How I Learned to Love Clickers

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At first, "clickers," or Classroom Response Systems, seemed irrelevant for my history teaching. Clickers are small handheld devices that looked suspiciously like simple TV remotes to me. Students use the devices to respond to multiple choice questions posed by a professor—the devices typically have five buttons, labeled A to E. After students click on their choices, a small bar chart of the distribution of answers can be projected onto a screen, often right on top of a PowerPoint or Keynote slide displaying the multiple-choice question. At my university a student buys a clicker for about $15, registers it online, and then uses it for multiple courses throughout their undergraduate career. Clicker use is documented in detail for the professor and TAs. Clickers were adopted early in STEM courses, where multiple choice testing was more common and quantitative problem-solving with right and wrong answers the norm.

The undergraduate course I teach most often is a one semester history of medicine survey that goes from classical antiquity to about 1700—roughly speaking, the Hippocratics to George Cheyne.[1] The assignments include response papers, exams, and short papers, but nothing with any multiple choice questions. My students can struggle with course materials because they may lack any chronological scaffolding for the premodern world. "When was the Middle Ages again?" my TAs and I get asked, even when we provide timelines or suggest that students make them as study aids. Without such scaffolding, it can be hard to make sense of the course's details. Even more difficult for undergraduates is the concept of significance, or how a particular fact, story, or detail relates to the larger themes of the course; or, more generally, how historians use evidence.

I initially adopted clickers primarily as an aid to attendance; it was only with their actual use that I discovered some of their other virtues. The basis of the course is my lectures and the discussion sections; I don't have a mandatory textbook, which puts a premium on attendance and note-taking. I decided to tape my lectures so that students with different learning styles would have the opportunity to review material and brush up their notes. However, I have taught undergraduates for a long time,

1. The class syllabus can be found in the *Bulletin*'s online syllabus archive: https://www.hopkinshistoryofmedicine.org/sites/default/files/sylFissell3.pdf.

and I knew that the opportunity to watch a 10 a.m. lecture on tape at a later date would prove irresistible to a good number of students, who would tell themselves that they'd catch up on the lectures, really they would, cut class, and then be faced with a mountain of material to learn right before the midterm. So I used clickers to ensure that students came to the lectures and used the tapes for review only.

Coincidentally I had been reading *Make It Stick*, a book that translates recent research on learning for a wide audience, more for the sake of my school-aged child than for my own work.[2] The book upends a number of study truisms I was taught. For example, it is now considered better to study in multiple venues, rather than the one sacred spot we were always instructed to repair to, although as a historian I also know that fashions in such advice come and go. The emphasis on self-testing as a key technique for learning new material struck me as I considered clickers and pushed me to try them. I spent the first three to five minutes of every lecture posing four or five multiple-choice review questions.

Clickers proved to have a range of benefits. First, they did the task of supporting attendance. Ten percent of the grade for the course was "lecture participation," and it was all or nothing. If a student answered 80 percent of the questions posed, they earned the full 10 percent whether or not they got the right answer. A 75 or 80 percent figure was recommended to me to cover the various exigencies of student life: "My battery ran out" (most clickers use AA batteries) or "My roommate took my clicker."

Second, clickers provided real-time feedback: Were students understanding the lectures?

For example, I asked this question as a test of straight recall:

"Parabalani" means:
a) the men who ran xenodochia
b) young men who functioned as human ambulances
c) demons who plagued travelers
d) charitable collections taken up in Jewish communities
e) the disease that Jesus healed at Gennesaret

It's "b," by the way. Even the wrong answers helped students recall lecture points ("oh, xenodochia, right"). When I saw a bar chart that showed 50 percent of students choosing the same wrong answer, it was, as they say, a teachable moment. Sometimes they'd fallen into a trap I had laid, but other times I was offered a "do-over" to explain something.

2. Peter C. Brown, Henry L. Roediger III, and Mark A. McDaniel, *Make It Stick: The Science of Successful Learning* (Cambridge, Mass.: Belknap Press, 2014).

Third, I was also able to model historical thinking, or the relationship of details to the whole, which helped prepare students for the midterm identification questions, in which students have to provide basic information about a person or topic and explain its significance. Was Cassiodorus significant because he built a fishpond at his monastery? No, not really, at least for this course; maybe if it were a course on monastic life, or on medieval animals, that detail would have been more important. Here it was just a colorful detail that explained the prominence of the fishpond in my illustration of Cassiodorus and stretched students to imagine the daily life of monks who were crucial to medieval medicine. His significance lay elsewhere, in his translation practices. Or I could ask questions that made students draw comparisons across multiple lectures, such as "The French Disease resembled leprosy in which of the following ways?" I didn't do a statistical analysis, but the midterms were better, and the students who weren't successful often hadn't been to class—or at least their clickers hadn't been in use.

The most unexpected benefit of clickers was participation. While I'm not ready to flip my classroom, I use an interactive lecture style, asking students to volunteer their opinions—what are some potential reasons why we can't find evidence about medieval midwives? What kinds of sources might tell us about seventeenth-century "quacks"? Now I use clickers to ask questions like "If you lived in the Middle Ages, would you rather be treated by a medieval surgeon, a physician, or a wise woman?" every few lectures, in order to spark students' thinking and make the distant past more approachable. To my surprise, the class responded to clickers by becoming much more interactive. Hands shot up, asking questions to which I didn't always know the answers (how *did* the Roman army select its medics?). Just starting each class by asking review questions, improvising new explanations when concepts hadn't stuck, and throwing in a few survey questions seems to have created a more interactive climate.

Given their range of benefits, and despite my initial skepticism, clickers have become a welcome addition to my undergraduate courses.

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