Getting Started with Clickers for Learning, Engagement, and Feedback

Excerpts from selected resources, collected /abridged by WSU's Office of Assessment of Teaching and Learning (ATL)

By their nature, clickers increase participation by allowing all students to respond to all questions asked by the instructor. The idea behind clickers is not new—teachers have used interactive, instructive questioning to teach students since at least the time of Socrates. This style of interaction, however, becomes very difficult as class size increases. Students in large classes are often hesitant or unwilling to speak up because of fear of public mistakes or embarrassment, fear of peer disapproval, pre-existing expectations of passive behavior in a lecture course— both on the part of lecturer and students, or even uncertainty of acceptable behavior in a class that may be larger than one's own hometown. *[Clickers in the Large Classroom*: *Current Research and Best-Practice Tips]*

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Clickers can serve a wide range of instructional goals. We recommend that you start with modest goals—as would be the case with the adoption of any new instructional technique or technology. However, the use of clickers has great potential for creating a very learning-centered classroom.

a. Clickers can provide frequent feedback to both students and professors on a daily basis
b. Clickers can be used to explore and expose hidden misconceptions that both students and instructors may bring with them to class
c. Clickers can be used in conjunction with active learning techniques that are particularly suitable for large class settings
d. Clickers can be used to survey student attitudes, opinions, and behaviors.
e. Clickers can be used to help inform instructors on the effectiveness of various teaching methods or learning activities

   [Classroom Performance System Some Initial Decisions: Course Planning and Design]*

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What's the educational activity? There are several families of activities for which SRSs (student response systems, or clickers) are commonly used, include:

A. **Stimulating deeper exploration of difficult ideas**. This pattern of using a SRS combines a) conceptually challenging questions that can't be answered by simple memorization or calculation, b) Peer instruction (students are asked the question, see the course response, confer with a partner, and then respond again). It's this pattern of using 'clickers' that has produced impressive, lasting learning gains. (One of many attributes of clickers that makes them a good tool for this: the safety of anonymity or semi-anonymity. That's especially useful when the questions are politically or socially controversial.) Note: many faculty use SRSs to poll students on questions that have no single right answer, including questions of opinion and judgment, e.g., how credible was the evidence cited in the student presentation you just heard? [also: predict, rank, interpret, give rationale, , etc.]
B. **Gauging progress and agreement/disagreement:** Allowing students to see how their understanding and opinions relate to those of the other students in the course.
C. **Asking questions** to see who remembers what they read in the homework or remembers what they just heard in the lecture, (e.g., "which of the following is the equation of simple harmonic motion? Which of the following motions can be described with the equation of simple harmonic motion?"
D. [Other purposes: warm-up, apply, review, identify misconceptions, get direct feedback]

Most of the foregoing activities can have two simultaneous goals:

1. **Encourage the student to do the activity** that is being measured (e.g., do the reading, think about what has been read or heard, pay attention the lecture) and

2. Provide **guidance to help the instructor figure out what to do next** (e.g., if a point seems well understood, build on it; if students have differing interpretations of a reading, stage a debate or some other test of those interpretations).

   [From *TLT Group*]
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Some practical tips as you get started, compiled from WSU faculty and selected sources.

a. Keep total clicker points relatively low.
   - Just give bonus points for clickers, especially the first semester(s) you use them. Create a scoring system that will allow you to justify rounding final grades up at the end of the semester .
   - Create a class participation grade that will be integrated into the final grade (0 points for no response, 1 point for any response, 2 points for the correct response)
   - Example: Students get 2% credit for clicking in 70% of class days. Very useful --there's no worry or time expended if someone's clicker doesn't work one day, or if the instructor messes up (the system doesn't count everyone one day), etc.

b. Build student buy-in. First and foremost, include some text in your syllabus that explaining why you are using CPS in your course. Link it to your teaching philosophy and/or course goals, learning. Emphasize the value that they will get out of using CPS regularly (i.e. instant feedback, self-assessing for comprehension, becoming familiar with how professor ask / word questions—reducing test anxiety, etc.)

c. The first day or two, ask where students are buying clickers cheaply – are there used clickers available, or online? Shows you care about cost to them. Also, let them know what other classes in your dept use clickers.

d. Use the clickers on a regular basis. Use conceptual questions rather than factual recall.

e. Include peer discussion / instruction approach

f. Try using an icon in your PPT slides to indicate when a clicker question is coming next. Students will be ready for it – helps in a large class.

g. Invite students to suggest clicker questions if they have one they'd like to get the whole class input on, and/or as part of a group presentation.

h. Try constructing test questions that are consistent with your clicker questions.

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Compiled from:
- *Classroom Performance System* Some Initial Decisions: Course Planning and Design, Virginia Commonwealth University, Center for Teaching Excellence, retrieved 8/20/08 from http://www.vcu.edu/cte/resources/cps/initial_decisions.htm

- Diane O'Dowd, University of California, Irvine, presentation at University of Idaho, March 2007

- TLT Group retrieved 8/20/08 from retrieved from http://www.tltgroup.org/Flashlight/Handbook/PRS.htm

- *Clickers in the Large Classroom: Current Research and Best-Practice Tips*, by Jane E. Caldwell, Jane , Department of Biology, West Virginia University, Morgantown, WV 26506 retrieved 8/20/08 from http://www.lifescied.org/cgi/content/full/6/1/9
- Psychology faculty workshop, WSU, 8/21/2008