

# TIPPING POINTS



*Making what's good even BETTER.*

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## TIPS FOR THE EFFECTIVE USE OF CLICKERS

### What are Clickers?

Clickers are portable, hand-held devices that allow students to send their responses to questions wirelessly, via infra-red or radio frequency (RF) technology, to a receiver connected to the instructor's laptop computer. Software installed on the instructor's computer analyzes the data and displays the results graphically in real-time, giving both students and faculty a quick idea of what concepts might need further review, additional explanation, or increased preparation.

The Innovation Centre has acquired three sets of clickers from two different vendors to allow faculty to try out the technology in the classroom and to provide a mechanism for faculty to investigate the effectiveness of clickers as a teaching and learning tool. The first two sets of clickers are from eInstruction and can be used with small classes of up to 32. The third set of clickers is from TurningPoint and is intended for larger classes of up to 100 students.

### How Can I Use Clickers in My Classroom?

Faculty are able to sign-out clickers from the Innovation Centre on a first-come, first-serve basis. Before using the clickers in the classroom, faculty will have to visit the Innovation Centre to install the appropriate software, as well as participate in a brief training session. To arrange for software installation, training, and to sign-out a set of clickers, please contact Jordanne Christie by e-mail at [jordanne.christie@dc-uoit.ca](mailto:jordanne.christie@dc-uoit.ca) or by phone at extension 3675. The Innovation Centre Web site can be located at <http://innovation.dc-uoit.ca>.

### Defining a Clear Purpose

The effective educational use of clickers requires careful planning and attention to learning objectives. Before designing your questions, make sure that your use of clickers is linked to a clear educational objective. Clickers should be used for the following types of purpose:

- To expose and clarify students' misconceptions.
- To differentiate between easier and more difficult concepts.
- To promote interactivity and discussion in large group case-based learning.
- To elicit and discuss diverse points of view when there is no correct answer (e.g. ethics).
- To administer an effective review session that gives immediate feedback.
- To assess mastery of content.
- To provide immediate feedback on the value of the learning session.

### Designing Effective Questions

Clickers are just a technology, and their value depends on the effective design of questions to meet the selected purpose. For example, it is better to use questions that require application of knowledge to solve problems, if the instructor's goal is to expose and clarify misconceptions. Questions focusing on rote recall of specific facts and details are less helpful in this context. On the other hand, if running a mock-exam session, then the questions should be designed to reflect the full scope of questions on the real exam.

In all cases, the value of clickers depends on using questions that elicit a distribution of responses on an appropriate number of questions, so that the instructor can discuss, clarify and promote student interaction and discussion. Good planning for a session should include anticipating the possible answers you might get to each of your questions, and the steps you will take in response to those answers to help ensure successful audience interaction.

### Additional Tips for Best Practice

When designing questions, instructors should consider the following tips and techniques:

- Keep questions and answer options short and simple.
- Avoid questions with multiple correct answers.
- Have no more than five answer options.
- Prepare the audience with a warm up question.
- Allow adequate time for discussion of the response results. Build in one or two minutes for presenting and polling each question and at least 2-3 minutes of discussion. Never leave a polling slide without responding to the distribution of responses.