



What are clickers and how do they work?

Clickers are an interactive technology that enable instructors to pose either spontaneously or ready prepared questions to students, and immediately collect and view the responses of the entire group.

A clicker system consists of three components:

1. **Clickers:** wireless handheld transmitters (Radio, Bluetooth or WiFi are most popular);
2. **Receiver:** a remote device that receives signals from the clickers, often a USB connection;
3. **Software:** an application installed on the instructor's computer to record, display, and manage student responses and data (TurningPoint is supported here in Swansea).

This is how clickers work:

1. Instructors pose questions (verbally or with presentation software);
2. Students submit their answers using their remote transmitters;
3. The system instantly collects the results and saves the data, which can be view privately or shared with the group (anonymously).

Using Clickers in your lectures

Instructors generally use clicker systems to augment lectures. Here are some of the ways they have been used:

- To check students' comprehension of an issue or concept by posing questions at several points in a lecture, and asking students to click in their answers. The system produces a graphic representation of students' answers to the instructor, who uses it to determine whether he should slow down, repeat information, clarify a concept, provide an alternative example, pick up the pace, etc.
- To provoke discussion after an introduction pose a conceptual question using clickers. Then quickly scan the display of students' answers to see if a number of students are answering incorrectly, pause to discuss their answers within the group. Give students the chance to modify their answers based on what they have discussed. Further discussion opportunities after students have clicked in their final answers.
- Begin the class by posing a meaty philosophical question. Then put students into small groups to discuss the question before asking them as a group to click in their answer. After they do, the entire class discusses the results, and then the instructor begins the lecture.
- In a large lecture use the clicker system at the beginning of class to give a short quiz or test on the assigned readings. The test accomplishes a number of purposes: it ensures that students come to class prepared; it focuses their attention and primes them for the upcoming lecture; and it encourages punctuality since students who come late miss the test along with the points.
- Test students' prior knowledge at the start of the session, allowing the results to determine the flow and direction of the session.



What is the pedagogical value of using clickers?

No technology automatically enhances learning; rather, it must be used thoughtfully and deliberately to advance the learning objectives of a particular course. For example, an instructor in a large or medium-size class might choose to use clickers to:

- Elicit student participation and engagement to prompt deeper thinking about a particular question or problem.
- Monitor students' understanding of course content in real time, in order to identify and address areas of confusion and adjust the pace of the course appropriately.
- Provide students with instant feedback on their comprehension to help them monitor their own understanding.
- Spark discussion among students as they compare, justify, or modify their answers.
- Efficiently deliver and monitor session test, to hold student accountable for readings and lecture material and assess basic factual knowledge.

Potential disadvantages of using clickers?

There is a plenty of research that demonstrates the learning advantages of using clickers. However, there are potential issues to consider:

- It can take an initial investment of time to learn to use the system and manage the data it generates; SALT can help you with this;
- Monitoring students' understanding and responding appropriately requires flexibility and some loss of some predictability when delivering lectures;
- Using clickers takes time, so needs to be planned for;
- Creating good concept questions (in particular, questions that help you diagnose misconceptions) can be challenging.