Question-Asking Pedagogies

Following are seven effective ways of using clickers in a classroom setting. A common thread that runs through many of these strategies is the incorporation of student-to-student interaction. These “peer-engagement” moments have several benefits; among other things, they can:

- Promote deep learning by helping students become active classroom learners rather than passive observers
- Facilitate the creation of important peer study groups by encouraging students to converse about course subject material
- Increase the effectiveness of long lectures by resetting student attention span, which dramatically drops off after 15 or 20 minutes of lecture
- Help establish a good relationship between teachers and students

The following strategies were initially documented by Peter White, Jonathan Guillemette, Kaitlin Soye, and Torsten Bernhardt.\(^1\)

1. The Paired-Engagement Question
   (a) Ask the class a clicker question
   (b) Before allowing students to click in, instruct them to discuss the question with the person sitting next to them for 2 minutes.
   (c) Ask students to click in their answer.
   (d) Display the response histogram and talk about the results.

   **Benefits:** This is one of the most basic forms of clicker questions. It moves students from passive to active learning.

2. The Persuasion-Engagement Element
   (a) To use this element, you must first have asked the class a clicker question. This element is appropriate to use if the resultant answer histogram is flat or otherwise does not converge to a single popular answer.
   (b) Tell the students that if their answer differs from the answer of the student sitting next to them, they should discuss their answers together in the hope of reaching a consensus.
   (c) Give the students 2–3 minutes for this discussion, then re-ask the question and have students click in answers again. Do not reveal the correct answer until the end of this strategy.
   (d) Display the new response histogram and talk about the results.

   **Benefits:** Using this strategy can help students identify holes in the logic they used to choose an answer.

3. The First-Minute Question: Type 1
   (a) This type of question is asked in the first minute of class and is used to link the upcoming lecture material to the lecture material from a preceding lecture.
   (b) Open your lecture by asking a question directly relating to the material you covered in a previous class.
After allowing students to click in answers, display the response histogram and discuss the results before starting the new lecture material.

**Benefits:** This strategy helps provide continuity in your subject material from lecture to lecture.

### 4. The First-Minute Question: Type 2
(a) This type of question is asked in the first minute of class and is used as a hook (or lead) into the upcoming lecture material for the day.
(b) Open your lecture by asking a question directly related to the subject material you are about to teach. Allow students to click in answers, but *do not reveal what the correct answer is.*
(c) After approximately 20 minutes of teaching, revisit the question and give students 1–2 minutes to discuss the question before inviting them to click in responses again.
(d) Compare the response histogram from the first minute to the new response histogram.

**Benefits:** This strategy generates interest in the material you are about to teach and it gives you immediate feedback on whether your teaching was effective.

### 5. The Open-Ended Question
(a) Prepare a clicker question to ask your class but don’t create a set of multiple-choice answers.
(b) When you arrive at the question during your lecture, ask students to volunteer four or five plausible answers.
(c) As plausible answers are volunteered, type them into the slide.
(d) Once the desired number of answers is received, allow students to click in their choice.

**Benefits:** This strategy can alert you to student misconceptions about the subject material.

### 6. The Comprehension-Check Element
(a) Use this element to ascertain if students understand *why* a given answer is correct. This element works best with conceptual questions or questions in which multiple steps are needed to obtain the correct answer.
(b) After asking a question and displaying the results, ask the students (verbally) if they understand why the correct answer is right.
(c) Reset the poll and ask students to click “1” if they understand the underlying reasoning to the correct answer, but to click “5” if they want you to explain the answer in more detail.
(d) Provide further explanation and repeat step (c) as needed.

**Benefits:** This strategy helps determine if students know *why* the correct answer is correct.

### 7. The Formative-Evaluation Question
This type of question is used to ask students course-related or teaching-related questions. Examples may include:

(b) On a scale of 1 to 10, how well did you understand today’s lecture?
(c) For the upcoming review, which of the following topics would you like me to focus on? [Option 1] [Option 2] [Option 3] [etc.]

(d) How useful are you finding the discussion groups/tutorials? [1. Very useful] [2. Reasonably useful] [3. Not very useful] [4. Useless]

Benefits: Using this strategy helps keep the lines of communication open between teacher and student.

Endnote