What are Interactive Lectures?

A lecture where students can be actively learning and engaged in the material being taught.

“An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture-based class of any size. Interactive lectures are classes in which the instructor breaks the lecture at least once per class to have students participate in an activity that lets them work directly with the material.”

David R. Sokoloff and Ronald K. Thornton

Results in bottom left image

Method 1: Demonstrations

1. The instructor describes the demonstration
2. The students record their individual predictions on a Prediction Sheet. (Image below on left)
3. The students engage in small group discussions with their one or two nearest neighbors.
4. The students record their final predictions on the Prediction Sheet.
5. The instructor carries out the demonstration
6. A few students describe the results and discuss them in the context of the demonstration. Students fill out a Results Sheet, identical to the Prediction Sheet, which they may take with them for further study.
7. The instructor discusses the results and explains key concepts.

Method 2: Discussion

This study was carried out in the second term of the first-year physics sequence taken by all undergraduate engineering students at the University of British Columbia. This calculus-based course covers various standard topics in electricity and magnetism. The course enrollment was 850 students, who were divided among three sections. Each section had 3 hours of lecture per week.

The course included pre-class reading assignments, pre-class reading quizzes, in-class clicker questions with student discussion, small group active learning tasks and targeted in-class feedback

**Numeric Results:** The average scores were 41 ± 1% in the control section and 74 ± 1% in the experimental section. Students in the experiment did more than twice as well on those in the control section.

**Graphical Results**

Carl Wieman Science Education Initiative and Department of Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada.

**Summary**

Interactive Lectures when used properly, help students actively learn the material presented better than a tradition style lecture. Both methods showed conclusive improvements in retention of basic physics concepts.

Professors should consider integrating these methods into their current teaching styles.

**Interactive Lectures aren’t perfect**

1. If not used properly, content will take longer to get covered
2. Students MUST do the reading. Motivational tactics such as pre-reading quizzes can be used.
3. Not all students participate. Discussion is only useful if the student choice to engage.

**Learning Assistants**

LAs can be used to help facilitate learning and discussion in interactive lectures. Both methods require groups to work together to solve problems. LAs are taught to encourage this teamwork.