

## **CVM TA Members and Friends,**

As many of us have experimented with teaching with clickers (student responses systems), most of us have found that they are NOT the magic bullet we thought they might be. It turns out that clickers are just another tool that can be used effectively or ineffectively. The good news is that there are lots of resources available to help us do the former. The bad news is that it takes some careful thought and practice. Like most things, I suppose.

I've been asked several times for more information on the effective use of clickers. So, at the bottom of this message I have linked some references that were sent me by Bill Davis and Phil Mixter (Thanks!). I've also paste just below this, some of the EXECUTIVE SUMMARY from the Clicker Resource Guide that Bill sent. I thought it a nice overview.

For what it's worth, I strongly recommend that if you're using or looking to use clickers that you look at Jenny Knight's materials from the WWAMI meeting. She has some fascinating data and great tips on how to use clickers to engage students in substantive discussion.

Best wishes, S

### **EXECUTIVE SUMMARY:** The Clicker Resource Guide

- Clickers are not a magic bullet – they are not necessarily useful as an end in themselves.
- Clickers become useful when you have a clear idea as to what you want to achieve with them, and the questions are designed to improve student engagement, student-student interaction, and instructor-student interaction.
- What clickers do provide is a way to rapidly collect an answer to a question from every student; an answer for which they are individually accountable. This allows rapid reliable feedback to both you and the students.
- Used well, clickers can tell you when students are disengaged and/or confused, why this has happened, and can help you to fix the situation.
- The best questions focus on concepts you feel are particularly important and involve challenging ideas with multiple plausible answers that reveal student confusion and generate spirited student discussion.
- **A common mistake is to use clicker questions that are too easy.** Students value challenging questions more and learn more from them. Students often learn the most from a question that they get wrong.
- For challenging questions, students should be given some time to think about the clicker question on their own, and then discuss with their peers.

- Good clicker questions and discussion result in deeper, more numerous questions from a much wider range of students than in traditional lecture.
- Listening to the student discussions will allow you to much better understand and address student thinking.
- Even though you will sacrifice some coverage of content in class, students will be more engaged and learn much more of what you do cover.
- When clickers are used well, students overwhelmingly support their use and say they help their learning.

## **RESOURCES:**

**From Bill Davis (SMB):** The following materials were developed by the Carl Wieman Science Education Initiative (CWSEI) at the University of British Columbia:

- The Clicker Resource Guide, ([http://www.cwsei.ubc.ca/resources/files/Clicker\\_guide\\_CWSEI\\_CU-SEI.pdf](http://www.cwsei.ubc.ca/resources/files/Clicker_guide_CWSEI_CU-SEI.pdf))
- Ready, Set, React: Getting the most out of peer instruction using clickers ([http://www.cwsei.ubc.ca/Files/ReadySetReact\\_3fold.pdf](http://www.cwsei.ubc.ca/Files/ReadySetReact_3fold.pdf))
- The CWSEI has some great resources on its Clicker page (<http://www.cwsei.ubc.ca/resources/clickers.htm>), including some videos you may be interested in.

## **From Phil Mixer: WAAMI Training**

- **Using Clickers to Maximize & Measure Student Learning** *Jennifer Knight, PhD*
  - [Session Presentation Slides](#) \*\*\*\*
- **Clicker Questions That Are Worthwhile: Designing & Using Questions to Maximize Their Value** *Jennifer Knight, PhD*
  - [Peer Discussion](#) \*\*\*\*
  - [Questions Handout](#) \*\*\*\*
  - [Sample Question Evaluations](#)

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“Everyone leads: It takes each of us to make a difference for all of us.”