I use: Different teaching techniques and methods have been developed to stimulate the interest and engage the students in large classes. I used i>clicker technology as one way to encourage student interaction in a traditional lecture environment. The use of i>clicker technology provides one way to address a part of this problem.

The purpose is to: The purposes/motivation for using i<clickers:

1. Provide a vehicle for student participation in large-enrolment classes. My initial motivation for using i>clickers was to foster active learning and participation in my large lecture classes, both of which I felt were lacking in my previous attempts at teaching in large-lecture format.

2. Engage the students—minimize boredom, keep students involved and awake. In my experience, students need motivation to stay engaged in a large-enrolment lecture-format course, where opportunities for one-on-one involvement are limited. By integrating i>clicker questions at regular intervals throughout lecture, students would be alert, focused on the lecture material and ready to respond to questions.

3. Obtain Formative Assessments. i>clickers also provide immediate formative-assessment feedback to both students and myself. With this form of assessment, students can identify specific material on which they need to concentrate, and I can adjust lectures and presentation as needed.

4. Encourage student attendance. I normally posted all my course notes online which may tempt some students to skip lectures. By having a small graded component for lecture attendance and participation (with i>clickers), students would be encouraged to come to class and get involved.

5. Engage students in thought-provoking issues. In addition to asking questions directly relevant to course content, I would use the clickers to pose thought-provoking questions to get the students’ interest in lecture or gauge their thoughts on social issues relating to the lecture material.

My strategy: is based on research, trial and error, observing others. Large classes do not lend themselves to student participation or inquiry. Several methods of teaching have been developed to make large lecture classes more stimulating and engaging for students. In this study, I used an alternative teaching method which involved the integration of i>clickers to our Introductory Statistics classes.

Met Goals for Large Lectures: I feel as though the use of i>clickers has addressed the issues I previously encountered in teaching large lecture classes.

Created More Engaging Classes: I was extremely pleased with the i>clicker response system. I felt that it has been an effective tool for enhancing lectures and engaging students. Most importantly, students enjoy using i>clicker based on the result of anonymous survey they participated.

I did a simple research study in my two classes of STAT 1000 (Basic Statistical Analysis I) and STAT 2000 (Basic Statistical Analysis II) during the first time we used the i>clicker technology. The most common positive comments were:

- I>clickers help with understanding.
- I>clickers increase participation and interactivity.
- The i>clicker questions are a good self-check of progress.
- The i>clicker questions are good practice for the tests.

Limitations: There are some challenges such as negative responses about i>clickers that I obtained from the survey. The most common negative responses were the following:

- The i>clicker questions took so much time.
- The i>clicker questions were not similar to the online homework questions given.
- One student requested that the correct answers to the i>clicker questions be available online after the class.
**Implementation:**

1. Obtaining/Registering i>clickers: i>clickers are requirement for both STAT 1000 (Basic Statistical Analysis I) and STAT 2000 (Basic Statistical Analysis II) courses. Majority of the students obtain i>clickers from on-campus bookstore, though they are free to obtain them from any available source. The U of Manitoba bookstore stocks the devices based on estimated usage and offers them with a very modest mark-up.

2. Registration/Taking Responsibility: Students are required to have their i>clicker purchased and registered online through a website prepared by the IT of the Department of Statistics. This registration will be synchronized with my class roster using the iGrader software.

3. Classroom Technology: Overall, I found i>clickers very easy to use. In the classroom, I use PowerPoint/PDF files presentations to present my lecture and sometimes, I write on the document camera. My classroom has two projectors which enabled me to present to the students slides and written work simultaneously. In general, I integrated the i>clicker questions into the PowerPoint presentation at regular and desired intervals. I also used STATS Portal for course management and another departmental website where the students could check their i>clicker marks.

4. i>clicker Grading policy: The following is the grading scheme I used for the i>clicker in my class. An explanation of this scheme is presented on the course outline. For every i>clicker response that a student gives, he will be rewarded 1 point. For questions with correct answer an additional point will be awarded for selecting the correct response. Full mark (5/5) will be given if a student receives at least 75% of the total possible i>clicker points. Partial marks (3/5) will be given if a student receives between 50% and 75%. No marks (0/5) will be given if a student receives less than 50%. Students are responsible for bringing their i>clickers to class and ensuring that they have functional batteries. Note that students earn participation point for 5% in i>clicker.

5. Daily Use/Questions Per Class: I used i>clickers to present 3 different types of questions: First, questions designed to highlight common conceptual misunderstanding in statistics; second questions designed as review questions for topics already discussed and third questions that were part of a class activity to help students learn a concept.

6. Questions Asked: The overall coordinator of the course normally prepares a set of i>clicker questions based on the unit of the textbook which are distributed to all the instructors teaching. Sometimes, I prepare my own i>clicker questions which are normally past questions given in the midterm tests and final examinations. I typically use the i>clicker during every lecture period, asking 3-5 questions, on average. Sometimes, I try to make the questions simple enough that they can be answered in a reasonably short time (40-60 seconds) so as not to consume too much lecture time.

**Outcomes:**

**Successes**

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