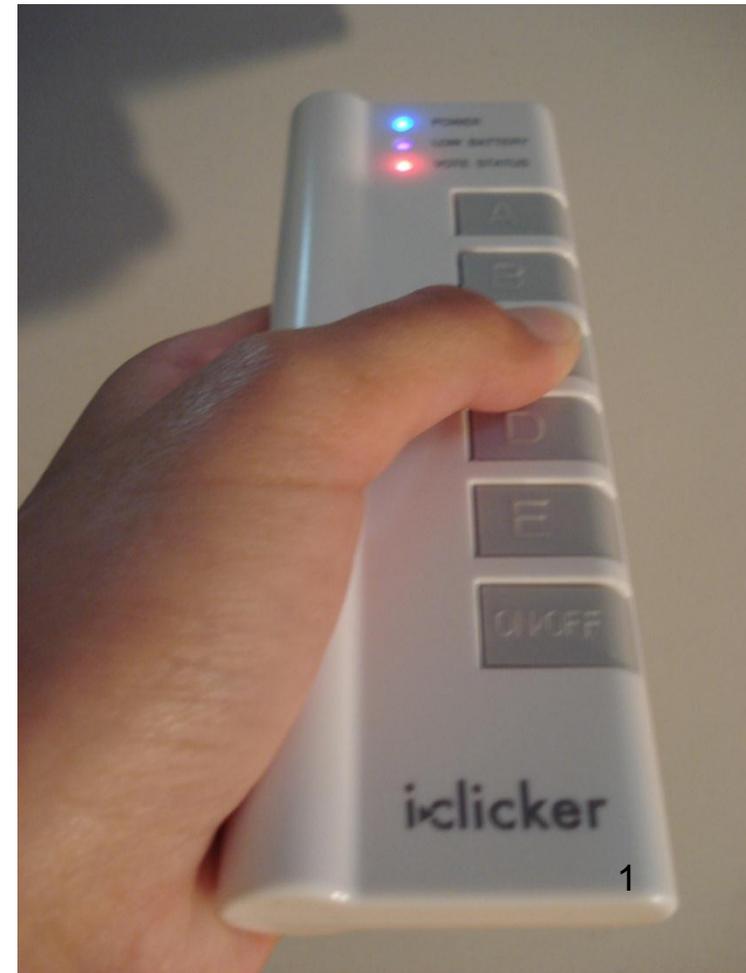


C5.01 *What's All the Clicking About?* A Study of Personal Response System Use at the University of Toronto

Vote results from June 20, 2008, presentation
at the STLHE Meeting in Windsor, ON.

Faculty Learning Community
University of Toronto

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Background

- University of Toronto adopted a single clicker vendor in Summer 2006
- Since Fall 2006, regular Training Sessions have been offered to faculty on
 - Pedagogy of using clickers
 - How to use the U of T “clicker of choice”
- Over 60 instructors at U of T currently use clickers
- Over 10,000 clickers are sold by the U of T bookstores each year

FLC - Timeline

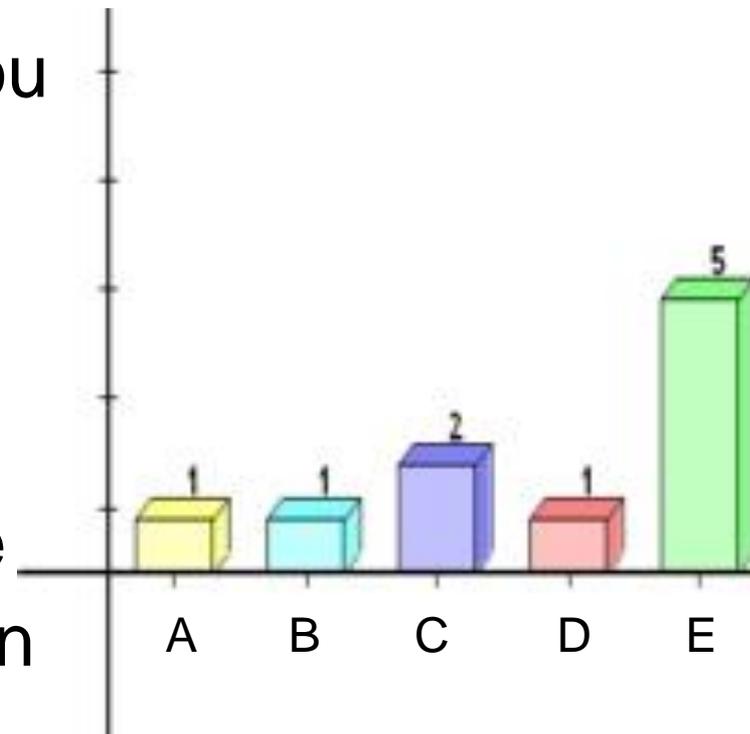
- Fall 2007
 - who uses clickers at U of T?
 - trials of student questions
 - assembling interview questions
- Spring 2008:
 - 32 (of 62) peer interviews
 - student clicker questions
 - analysis of data

Who here has actually used clickers in teaching?

For what class or classes do you use clickers?

- A. Smaller classes
- B. Medium sized classes
- C. Larger classes
- D. More than one of the above
- E. I have never used clickers in teaching

(10 responses)

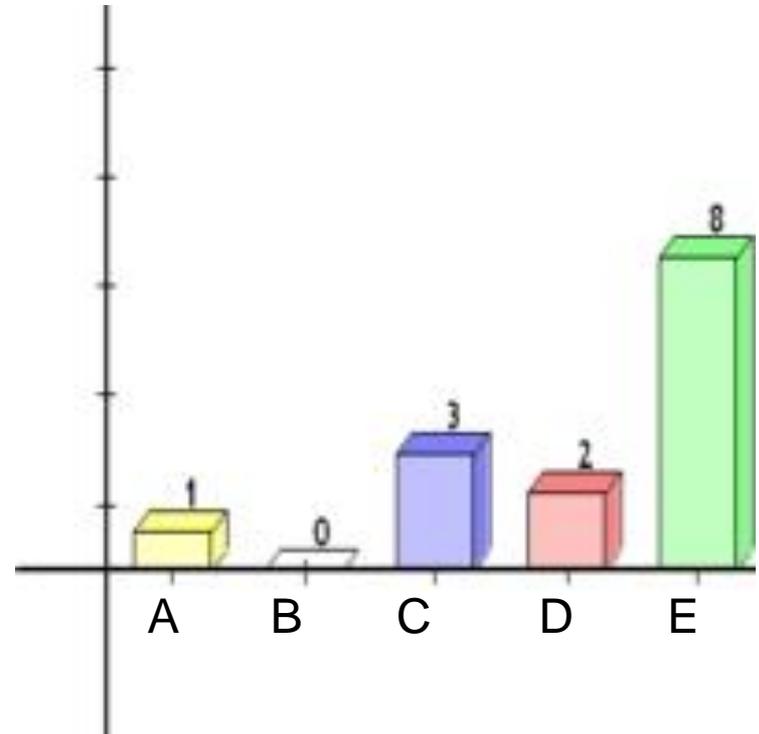


Best Practices 1: Should Talking be Allowed in Class?

Do you (or should you) allow / encourage students to discuss a clicker question amongst themselves during class?

- A. No.
- B. Before the vote, but not after.
- C. After the vote, but not before.
- D. Both before and after the vote.
- E. Both before and after the vote, with a second vote after the second discussion.

(14 responses)

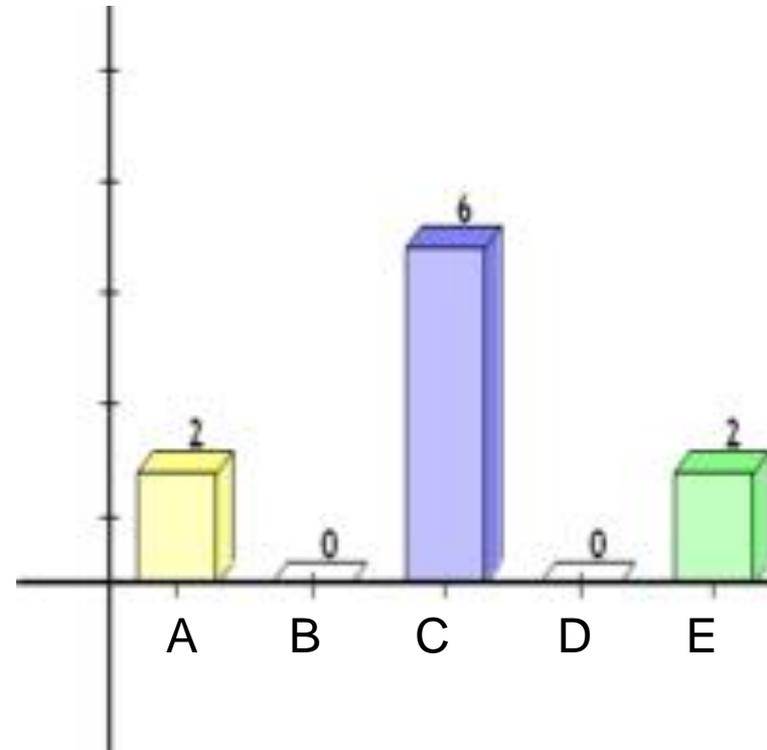


Best Practices: Should Clickers be Mandatory?

Do you (or should you) offer students marks for using clickers in class?

- A. No, clicker use should be entirely voluntary.
- B. Only for buying and registering a clicker.
- C. Participation mark for voting in each class, no matter what the vote.
- D. Mark for correct answer only.
- E. Combination of participation mark and extra mark if the answer is correct.

(10 responses)



A U of T Faculty Survey result (N = 32)

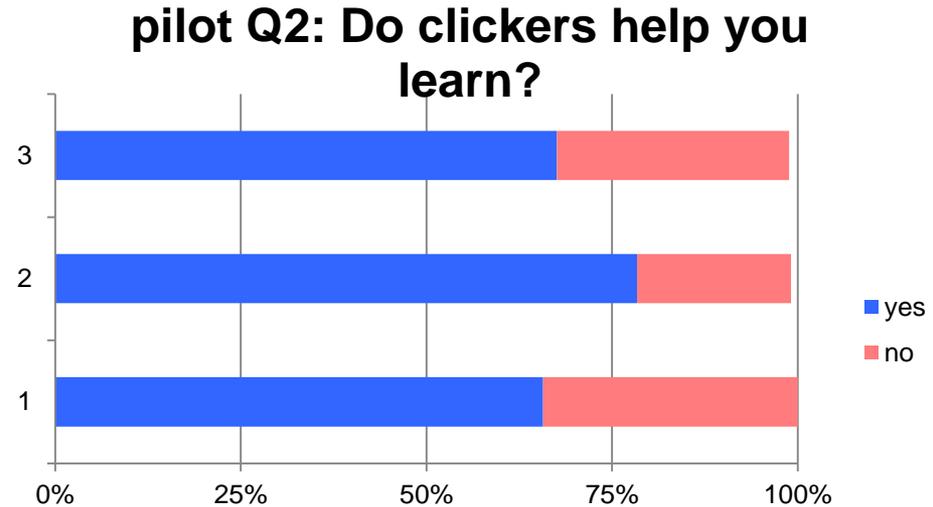
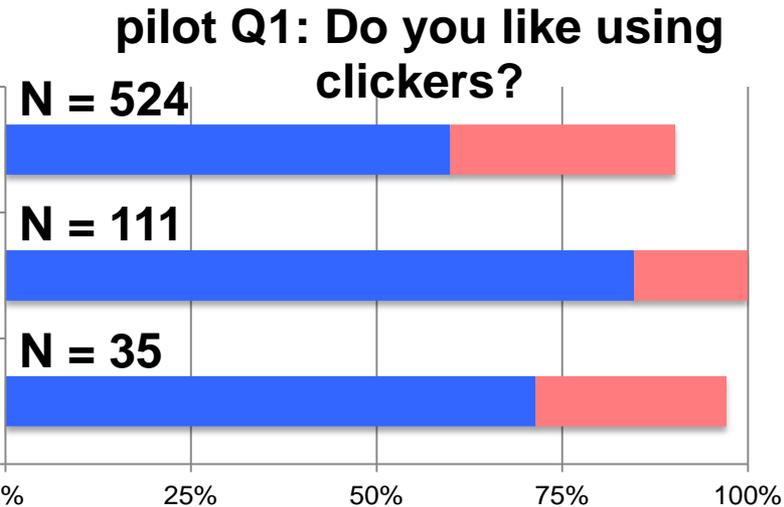
Do you give marks for the use of clickers?

- No (10)
- Only for buying and registering a clicker. (2)
- Participation mark for voting each class, no matter what the vote. (15)
- Mark component for correct answer. (5)

Pilot Student Survey

end of Fall 2007 semester

- 3 courses:



Pilot Student Survey

end of Fall 2007 semester

- question on engagement in 2 courses

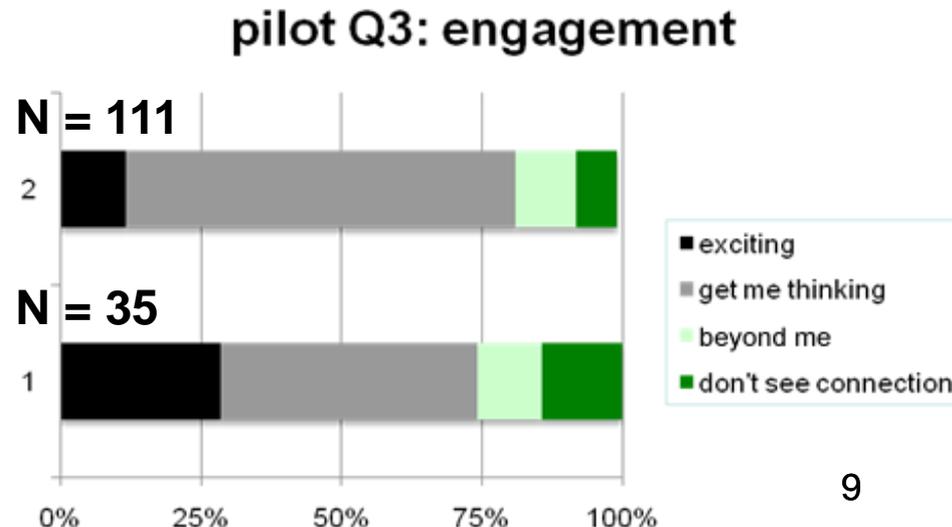
To what extent do clicker questions improve your engagement in the lecture?

(A) they promote exciting discussions

(B) they really get me thinking

(C) they are beyond me

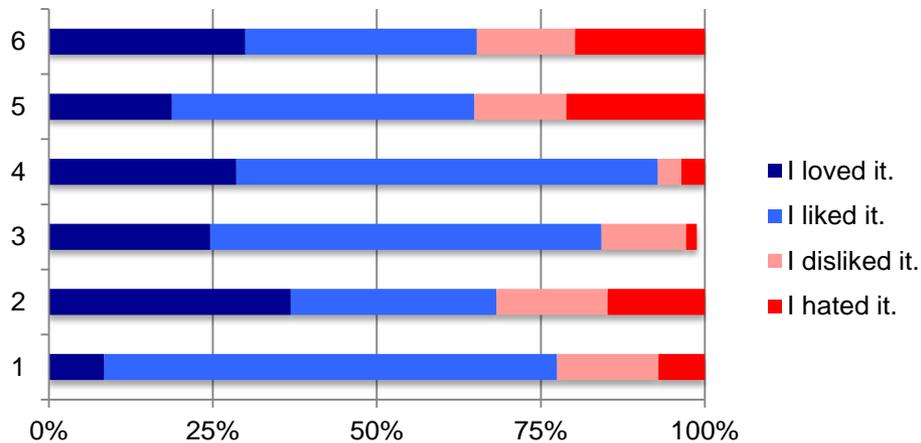
(D) I don't see the connection between them and the lecture



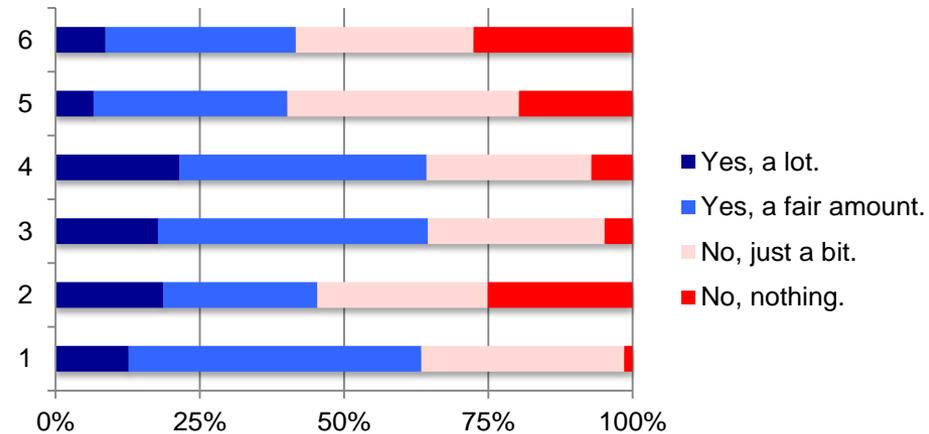
Student Survey

- 6 courses, N = 28 to 236 (total 715)

Q1: Do you like using clickers?



Q2: Do clickers help you learn?



Open Question to Audience

- What advantages do *you* feel there are in using clickers in class?
- What disadvantages do *you* feel there are in using clickers in class?

An advantage of Using Clickers – reported by instructors of all class sizes

- Students are engaged



Advantages of Using Clickers

(# of instructor survey responses, 32 interviewees)

- Student engagement (22)
- Instructor gets feedback on student understanding (14)
- Students get feedback about their understanding (10)
- Helps stimulate in-class discussion and peer instruction (7)
- Anonymity of clickers (6)
- Engages even the quieter students (4)
- Students think clicker votes are fun (4)
- Encourages lecture attendance (4)

...more Advantages of Using Clickers

(# of instructor survey responses, 32 interviewees)

- Forms electronic record of student responses (2)
- In-class reading quizzes (2)
- Students compete to get correct answer fastest (2)
- Tells the students that the instructor actually cares (1)
- Surveys about students' opinions, background (1)
- The iclicker can be used to advance slides (1)
- Cost-effective way to assign marks (1)
- Easier for an ESL student to participate than a spoken discussion (1)

Disadvantages of Using Clickers

(# of instructor survey responses, 32 interviewees)

- Administrative logistics: technology, registration, clickers lost / forgotten, etc (12)
- Cost; about \$40 per student (9)
- Preparation time and energy to use effectively (6)
- Takes too much class time (6)
- Cheating; not a good assessment tool (6)
- Disruptive to class flow (3)
- Multiple choice format is limiting (3)

Are clickers worth it?

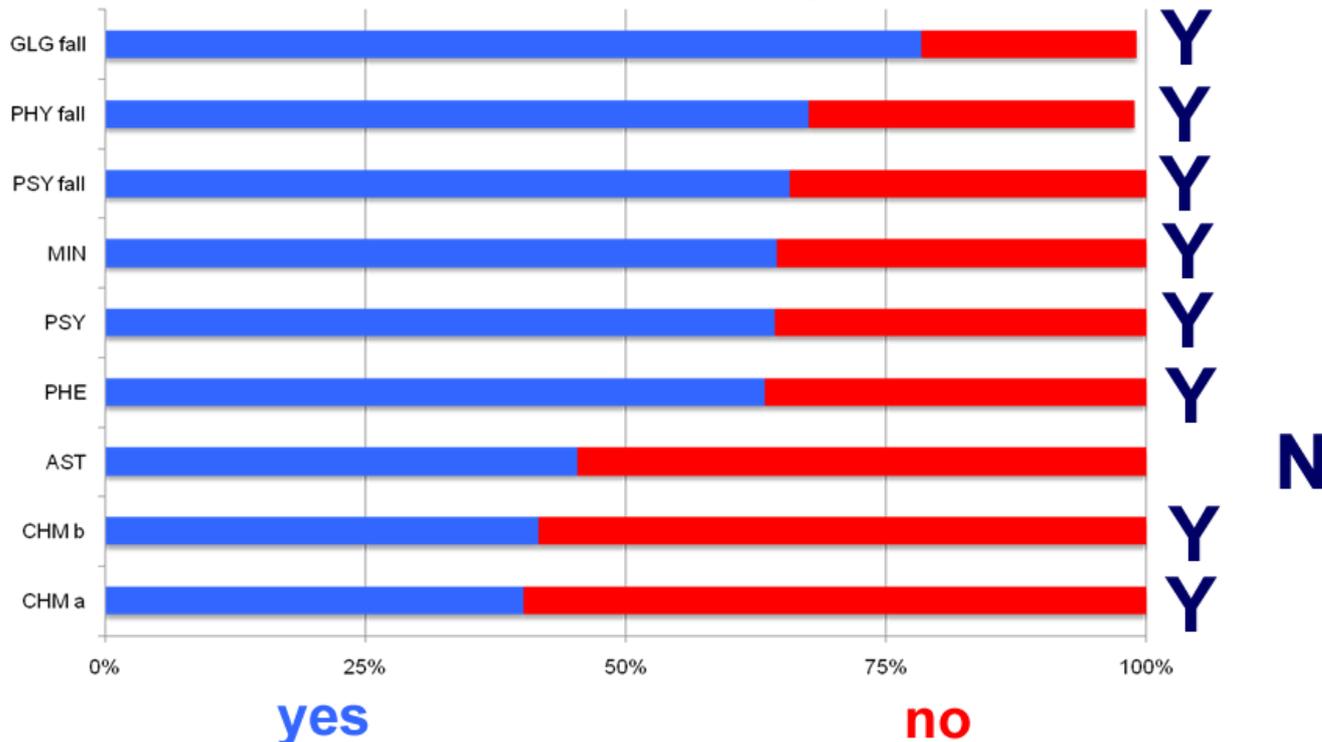


Class Size →

Student - Instructor survey correlations

Instructors for 9 classes responded to the question: “Do you expect / encourage / allow students to discuss a clicker question amongst themselves **before** they vote?”

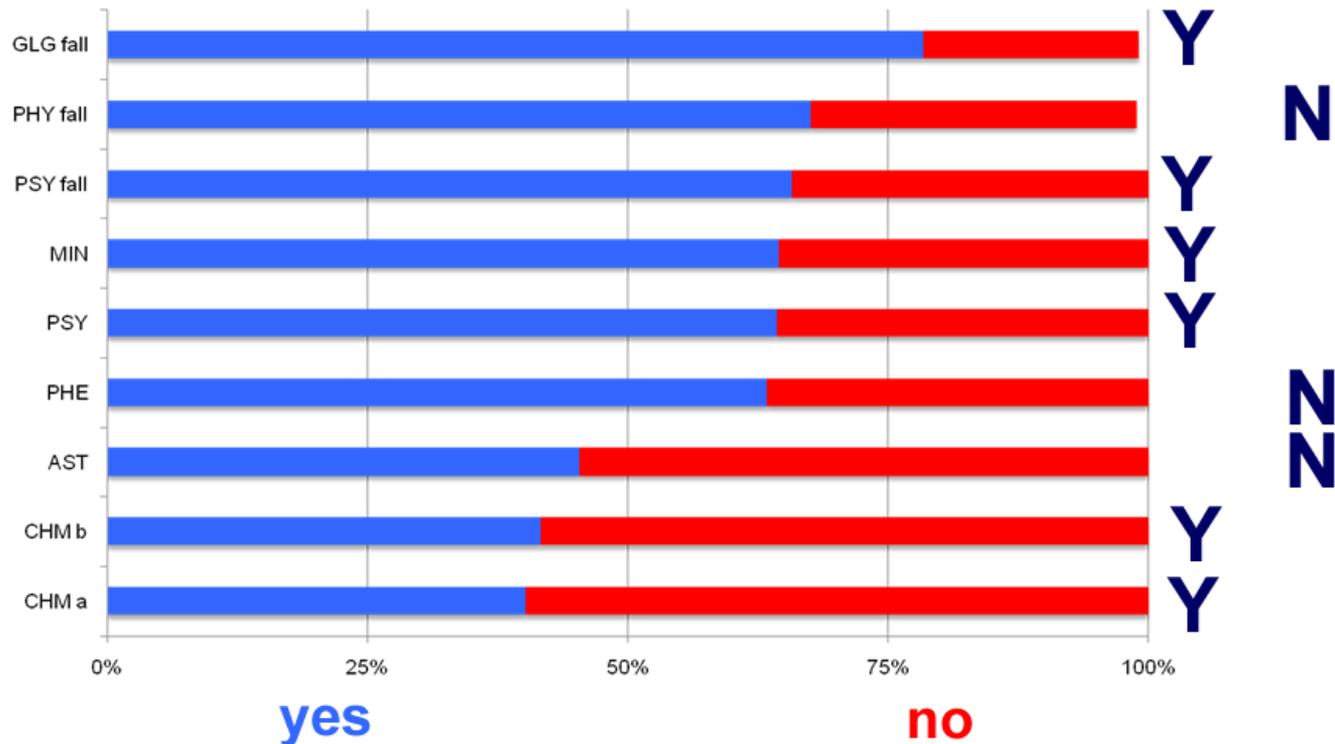
Students in these 9 classes were asked: “Do you believe using clickers in this class has helped your learning?”



Student - Instructor survey correlations

Instructors for 9 classes responded to the question: “Do you ever have students discuss a clicker question *after* they have voted?”

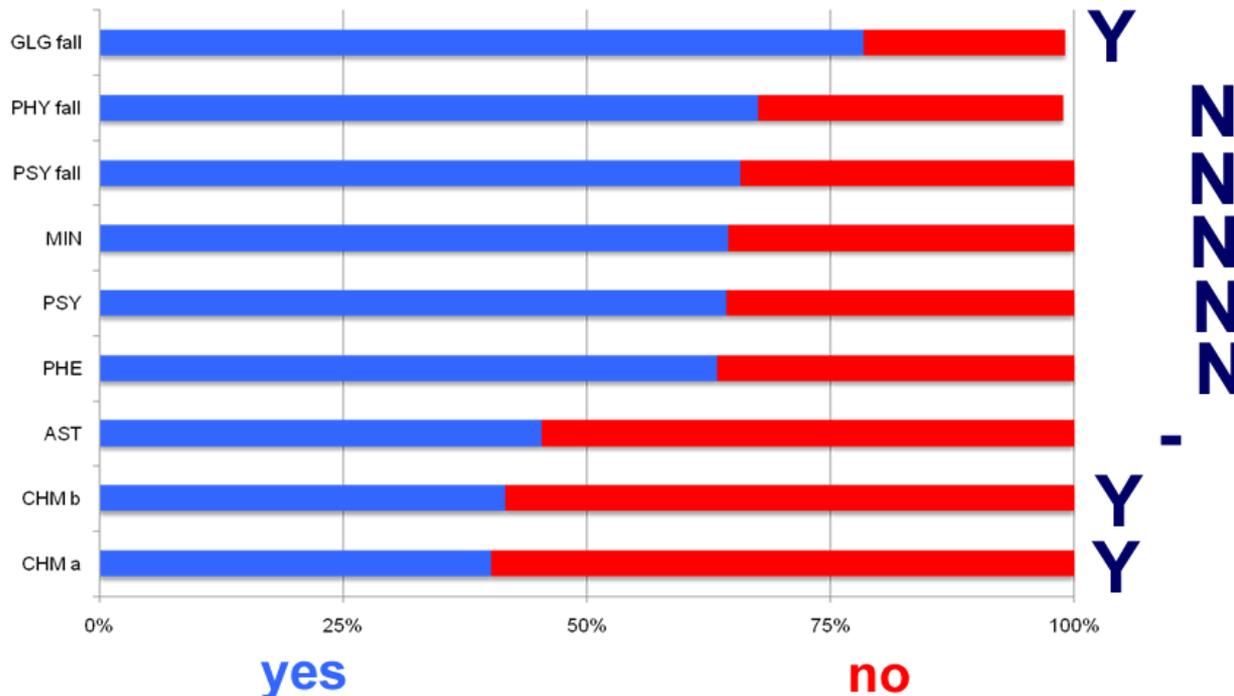
Students in these classes were asked: “Do you believe using clickers in this class has helped your learning?”



Student - Instructor survey correlations

Instructors for 8 classes responded to the question: “Do you ever display the histogram while voting is going on so the students can see the results while they can decide on or change their answer?”

Students in these classes were asked: “Do you believe using clickers in this class has helped your learning?”

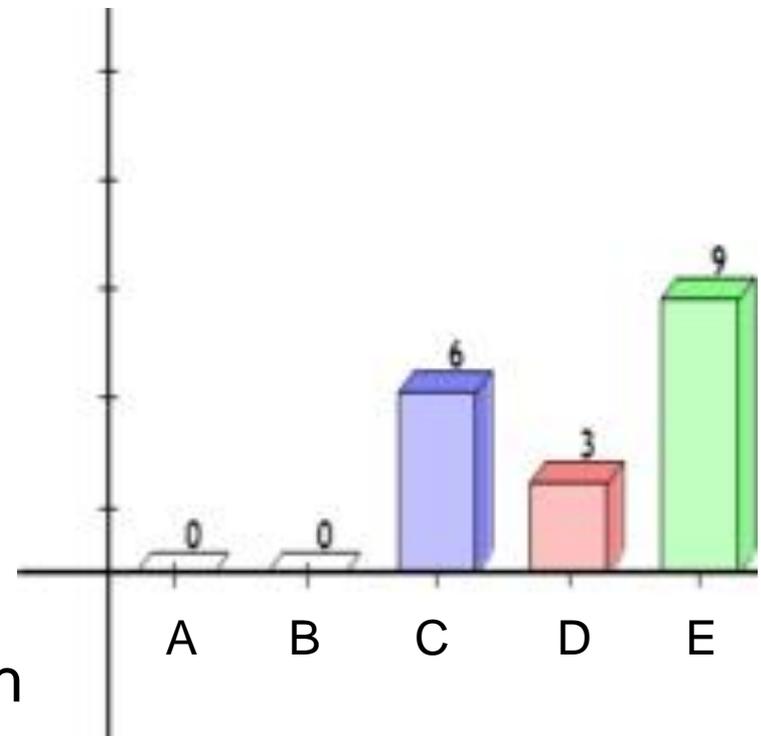


Best Practices 2: Should Talking be Allowed in Class?

Do you (or should you) allow / encourage students to discuss a clicker question amongst themselves during class?

- A. No.
- B. Before the vote, but not after.
- C. After the vote, but not before.
- D. Both before and after the vote.
- E. Both before and after the vote, with a second vote after the second discussion.

(18 responses)



Summary

- Summary: it matters **how** technology is used.
- Many faculty we surveyed had not thought of the issues raised during the interview and said they would change their future practices based on that interview.
- Future direction: does using clickers really improve how much students learn?