

Physics 4810 / 7810 Week 3 - Rollin!

Day 6: Fa2008
 2-D Motion: v,a,graphs and all that!
 Review Content
 more DATA!
 ConcepTest
 Tutorials



Admin

- Returning work -- comment about feedback & expectations
- Fieldwork / Sites
- Preliminary project this week
- Signup for Topic to lead!

Practicing OoM: your life

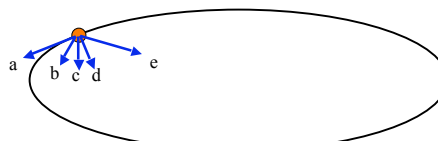
How much are you paying (is being paid for you) for this class period?

\$0.50, \$5, \$50, \$500?

How much am I getting paid for this?

2-D Acceleration

- Which vector represents the acceleration necessary to have the ball travel in this elliptic trajectory at constant speed?



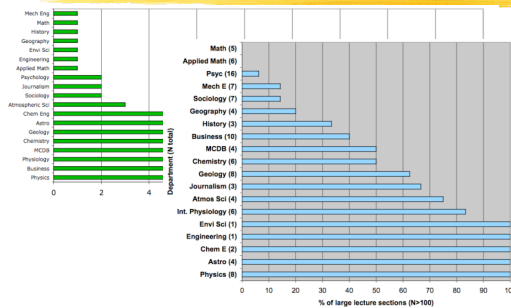
What about when the ball is speeding up CCW?

Revisiting the Use of Clickers

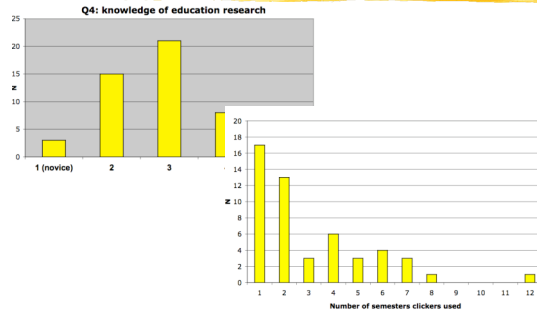
C. Keller
 C. Turpen

Studies Sp2007

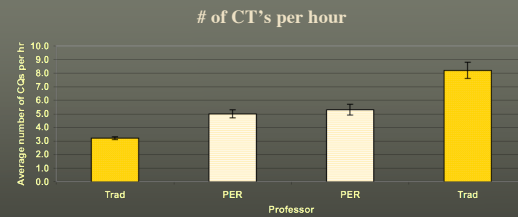
Survey: 19 Departments, 80 Courses, 10,000 students
 Case Studies: Individual Faculty in the Physics Dept



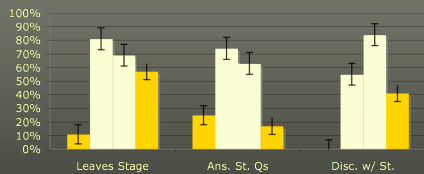
Faculty Background



Choice in Frequency of Use

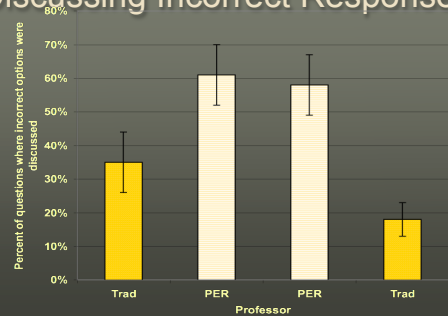


Faculty Vary in Practice During Collection Phase



Traditional vs. PER-Instructor Practice

Discussing Incorrect Responses



Students in classes that promote discussion rate clickers as more useful

Extent of Discussion	% Favorable
Does not allow discussion	
Allows discussion, but does not encourage it, and a small fraction of students discuss	
Allows discussion, but does not encourage it, and a large fraction of students discuss	
Encourages discussion, and a small fraction of students discuss	
Encourages discussion, and a large fraction of students discuss	

Faculty variation

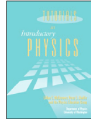
PER faculty tend to:

- Ask many (not too many) CTs in class
- Engage with students by:
 - Leaving stage
 - Listening to student reasoning
 - Have long discuss times
- Examining alternative reasons
- Broader variation in duration, and types of questions (quickies vs. longer sense making)

Tutorials in Introductory Physics

Reconceptualize Recitation Sections

- Materials
- Classroom format / interaction
- Instructional Role



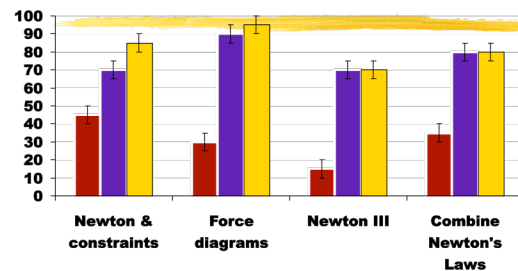
Tutorial construction

- How did these relate to the papers we read?
- Is this an effective model / theory of curriculum development?
- What's missing?

Do a Tutorial ...

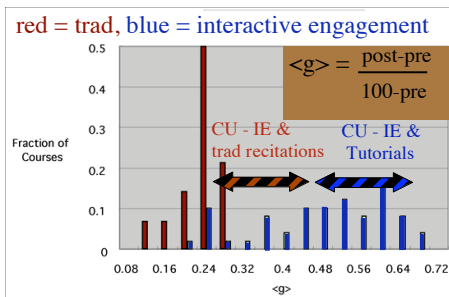
Would you prefer Now or Later? (why)
[o.w. look at more data on effectiveness]

Impact and Reproducibility



■ UW - No Tut |
Trowbridge and McDermott, *Am. J. Phys.* 49 (3), 242 (1981).
Finkelstein and Pollock, (2005). *Phys Rev ST PER*, 1,1.010101

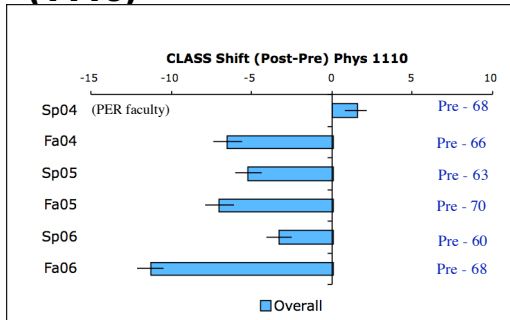
Force Concept Inventory



R. Hake, "...A six-thousand-student survey..." *AJP* 66, 64-74 (98).

Student Attitudes and Beliefs

CLASS - last 6 terms (1110)



The impact of recitation/pedagogy

Physics 1, 300+ students,

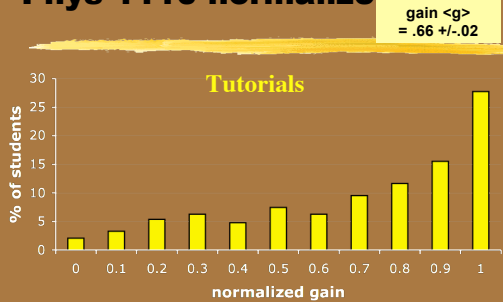
Peer Instruction in lecture, and:

1: "Tutorials" (Sp04) Tutorials

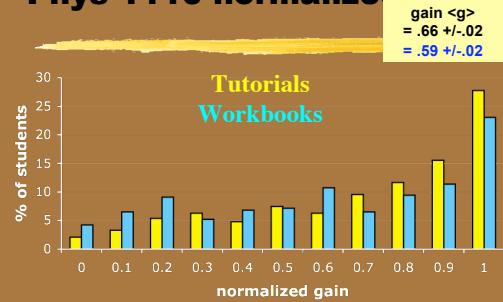
2: "Workbook" (Fa04) Knight Workbook

3: "Traditional" (Sp05) Mostly traditional

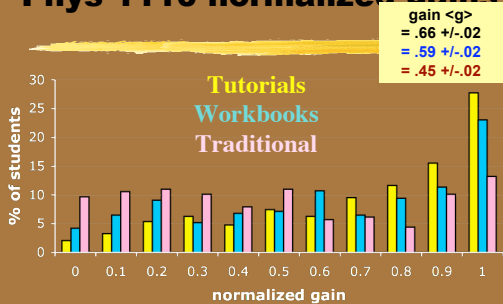
Phys 1110 normalized gains



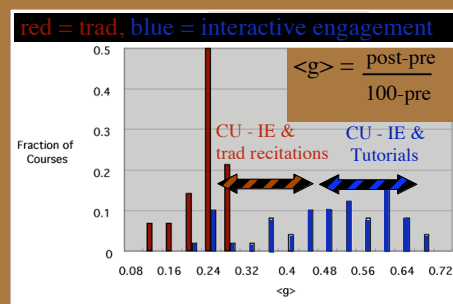
Phys 1110 normalized gains



Phys 1110 normalized gains



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