



Can Videos of Active Teaching Strategies Support Faculty Adoption of Research Based Instructional Strategies?

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Earth, Ocean & Atmospheric sciences



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In answer to ...

- I can't IMAGINE teaching that way!
- There's no time to watch OTHER teachers work.
- I wouldn't DARE ask to observe a classroom.
- Every class is different – how can I catch the BEST one?
- Students will wonder why I'm there.
- That would never work in MY discipline.

Videos of “exemplary” practice in action

- Formal permission from instructors AND students.
- Variety of disciplines, settings & strategies.
- Whole class filmed often with two cameras.
- Careful production to emphasize keys to success.
- Accompanying resources and references.
 - What to observe in videos
 - Context and instructor’s notes
 - Resources shown
 - References

Design criteria

1. ~6 minutes each
2. Instructors' voice – but minimal talking heads.
3. Student voice – but no simple endorsements.
4. Minimal 3rd party “voice-over”.
5. Visible evidence of best R.B.I.S. practices in action:
 - active students; peers interacting; “deliberate practice”;
 - expert / novice interactions including feedback; others ...
6. Help viewers to ...
 - set realistic expectations for specific teaching strategies;
 - imagine themselves in these roles (students & instructors).
7. Details in accompanying written content.
8. *Variety* of settings: math, geoscience, physics, etc...)
9. Enable communication (comments & questions)

Collection “packaging” – the website

<http://blogs.ubc.ca/wpvc/>

Evidence-based science education in action:
Video demonstrations of classroom, lab and other instructional strategies

HOME CWSEI **EOS-SEI** TEACHING AT FACULTY OF SCIENCE DIRECT TO VIDEO CLIPS

Home

- CU-SEI: Clickers in science classes
- CU-SEI: Groups in college classes
- V01: Lab plus active class, 3rd yr science.
- Video 1a: Laboratory experience
- Video 1b: Whole-class follow-up activity
- V01: Instructor's Tips
- V01: Exercise Context
- V01: Resources
- V01: References and guidelines
- V02: Two-stage midterm exam
- V03: Using worksheets twice
- V04: Tutoring practices in Large Classes
- V05: An active math class
- V06: A “framework” activity
- V07: Intro. physics active class

V01: Laboratory experience

Carl Wieman Science Education Initiative at the University of British Columbia

Video

Demonstrating evidence-based science education strategies

EOS-SEI UBC SCIENCE

00:02 06:04 HD 540p UBC

WHEN WATCHING THIS 06:04 min. VIDEO, look for...

5. Students recognize benefits of hands on work: hear... couple of minutes.

Aspects of logistics to notice:

1. **Setting up the exercise:** ... all students do the work and collect necessary materials. Production time is needed.
2. **Referencing pre-lab homework:** ... (handouts, samples, work expectations); follow up homework.
3. **How space and resources are used:** ... space to allow a range of engagement options. No further direction is needed. ... warnings when time is running out. Only 50 students at a time are scheduled into each lab session – hence 3 identical sessions for 150

LEAVE A REPLY **Comment space**

Supplementary content for each

x 7

1. Short lab + follow-up active class

- EOSC; 3rd year science majors
- 150 students
- professional production



2. Worksheets + video, twice in one class

- EOSC; 1st year all students
- 300 students
- professional production



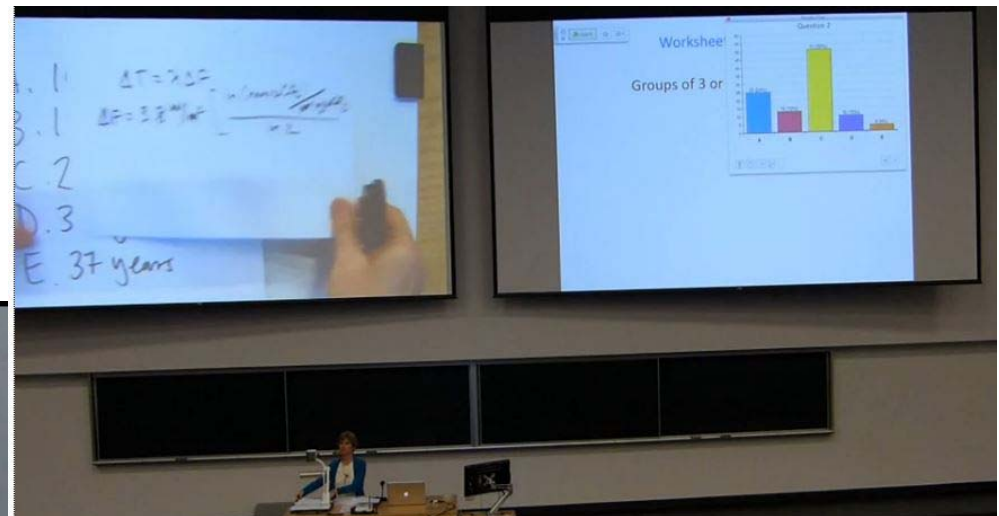
3. Clickers, group work; a math “proofs” course

- MATH; 2nd year math majors
- 60 students
- professional production



4. Real-time clicker qn's and worksheets

- EOSC; 3rd year science majors
- 150 students
- amateur production



5. Two stage exams in large classes

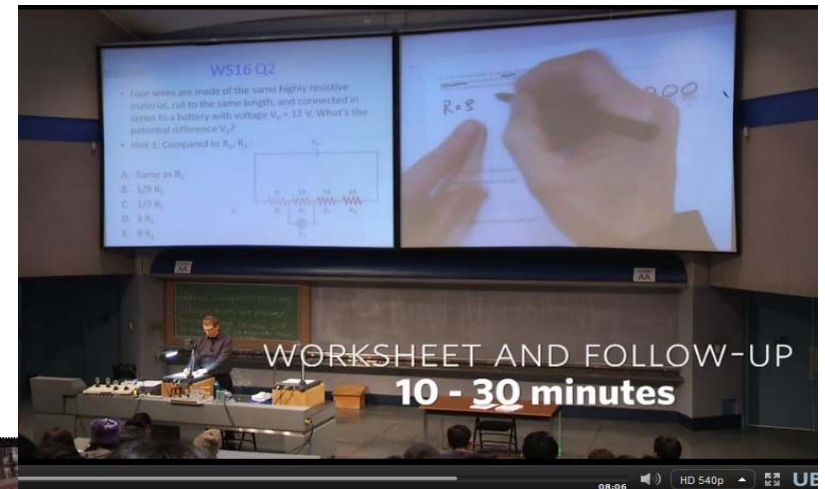


- 1st year all students
- 350 students; lecture
- amateur production



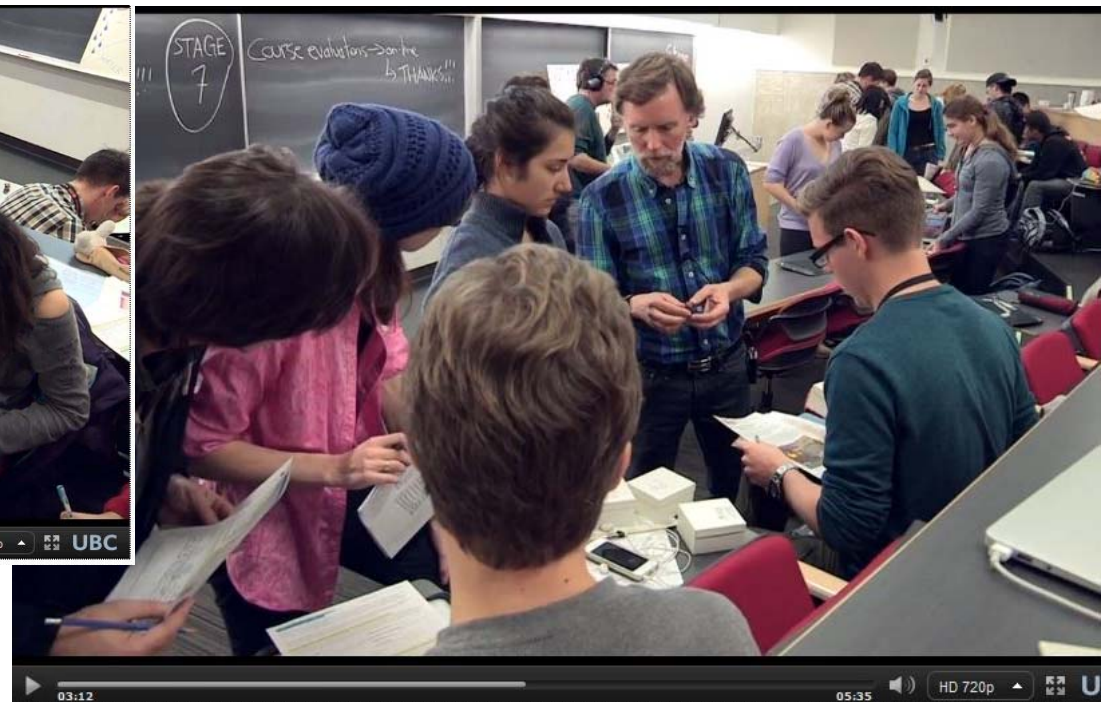
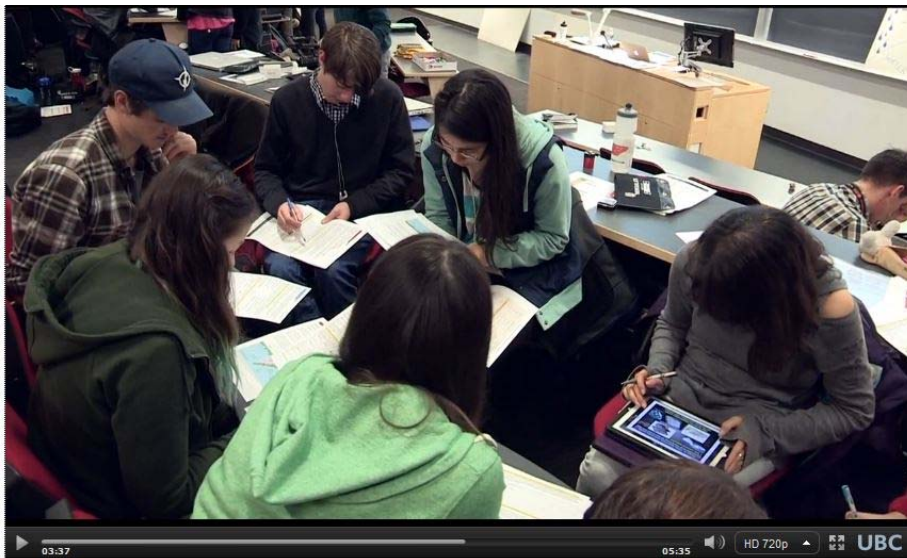
6. Clickers + group work, etc; physics 100

- PHYS; 1st year science majors
- 250 students
- professional production



7. Framework/capstone/jigsaw activity

- EOSC; 2nd year geoscience majors
- Pairs + large groups in 50 minutes
- 90 students
- Professional production



Your preferences for “useful” videos:

- Development directions depend on user’s needs.
- Your opinions can help prioritize further work.

Current video clip examples

1. Lab setting and active-class follow up strategies
 - Paleontology for 3rd year science majors
2. Basic group work strategies
 - Natural Disasters for all 1st year students
3. Math class group work and follow up
 - Mathematical proofs for 2nd year math majors
4. Tutoring with worksheets real time clicker questions
 - Climate change for 3rd year science students
5. Two stage exams in large classes
 - Natural Disasters for all 1st year students
6. Physics 100
 - Worksheets in an active class
7. A framework-concept capstone activity
 - 50-minute activity including pairs and large groups

References and resources

- <http://eos.ubc.ca/about/faculty/F.Jones.html>
- <http://eos.ubc.ca/research/cwsei/>
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- “*Wisdom can’t be told*” ... Gragg, 1940, quoted in **Bransford, John D., Franks, Jeffery J., Vye, Nancy J., & Sherwood, Robert D. (1989).** *New approaches to instruction: Because wisdom can’t be told.* In Vosniadou, Stella & Ortony, Andrew (Eds.), *Similarity and Analogical Reasoning* (pp. 470–497). Cambridge: Cambridge University Press.
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