Two models of paired teaching in first year physics lectures

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Funding acknowledgment: **John and Deb Harris**

Motivation

- What happens in co-taught classrooms?
  - Collect evidence through observations
- What do students think about different models of co-instruction?
  - End-of-term student survey
- (How) Do faculty develop as effective instructors and how does this depend on the co-teaching model?
  - Interviews (ongoing, not included here)

(See Tara Holland's poster for more motivation and definitions)

Data tool: Co-teaching observation protocol

- Based on the COPUS (*Smith et al., CBE-Life Sciences Education, 12(4) 2013)*
- Observe how instructors collaborate to deliver classes
  - Record who is publicly facilitating different classroom modes
  - Observations taken on a minute-by-minute basis
  - Codes:
    - Lec: Lecture
    - CQ: Clicker question (including any lead-in and follow-up)
    - WS: Worksheet
    - Dem: Demos (including computer simulations)
    - Adm: Administration
    - Circ: Circulating (moving through class, guiding students)
    - Wait: Present but inactive.

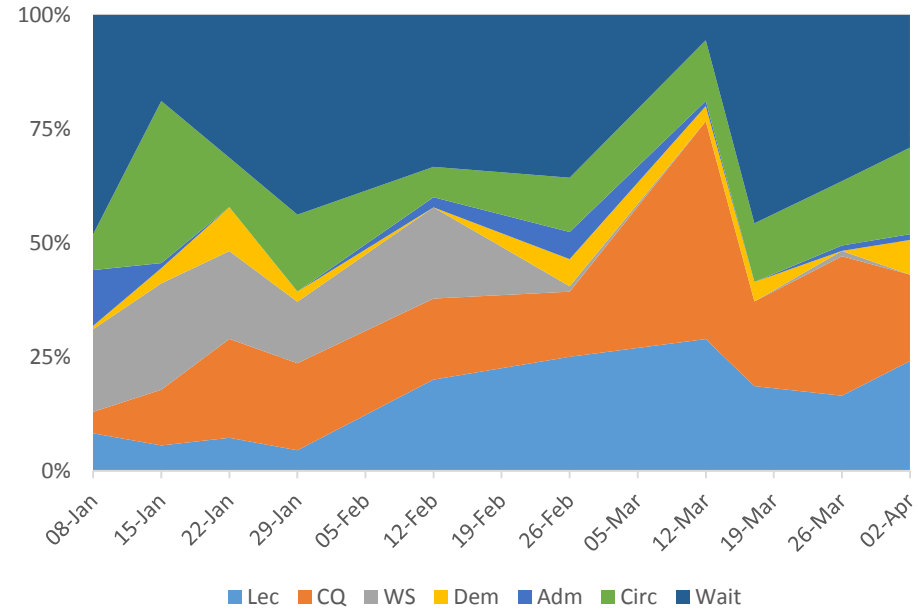
Data tool:
Co-teaching student survey

- Based on results of open-ended surveys
  (Jones and Harris, College Teaching 60(4) 2012)
- Validation:
  - Expert feedback
  - Student interviews for understanding
- Questions addressed
  - Specific advantages to students
  - Specific disadvantages to students
  - Specific perceived effects on students
  - Suggestions for improvements

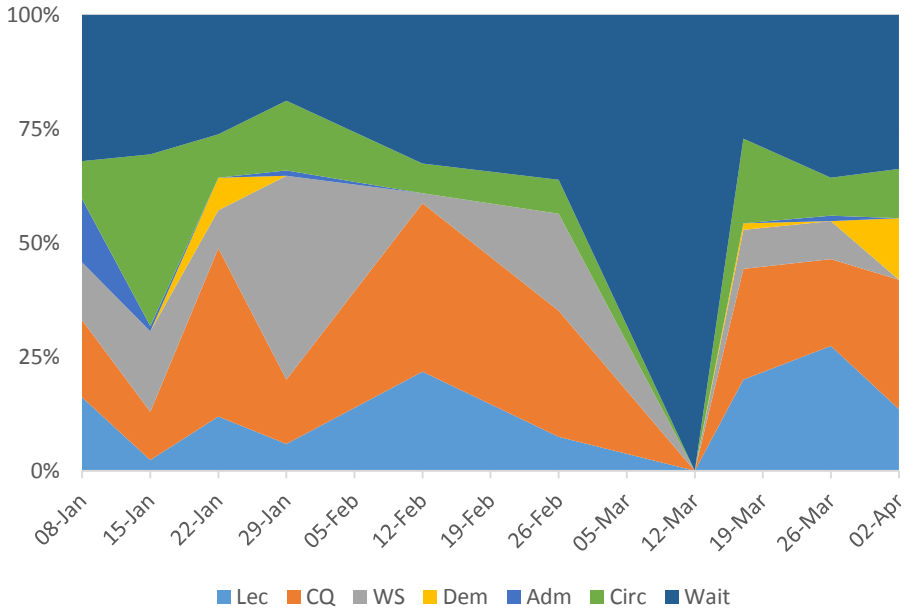
Model 1: Continuous speckle

Course 1: 110 students

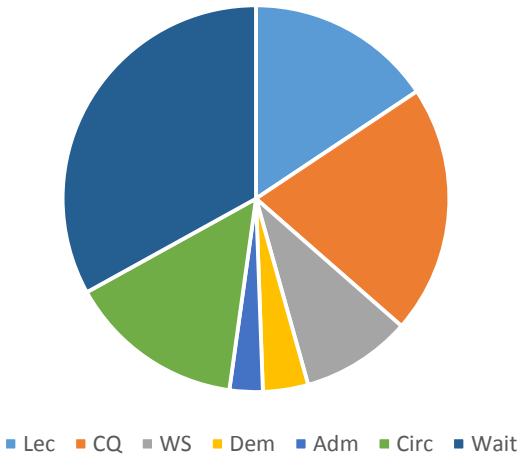
Instructor 1.1 over time



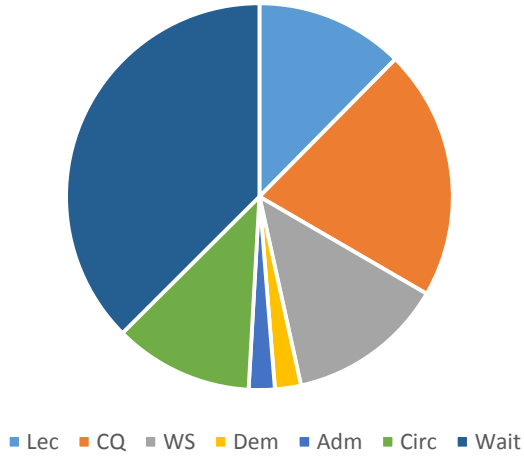
Instructor 1.2 over time



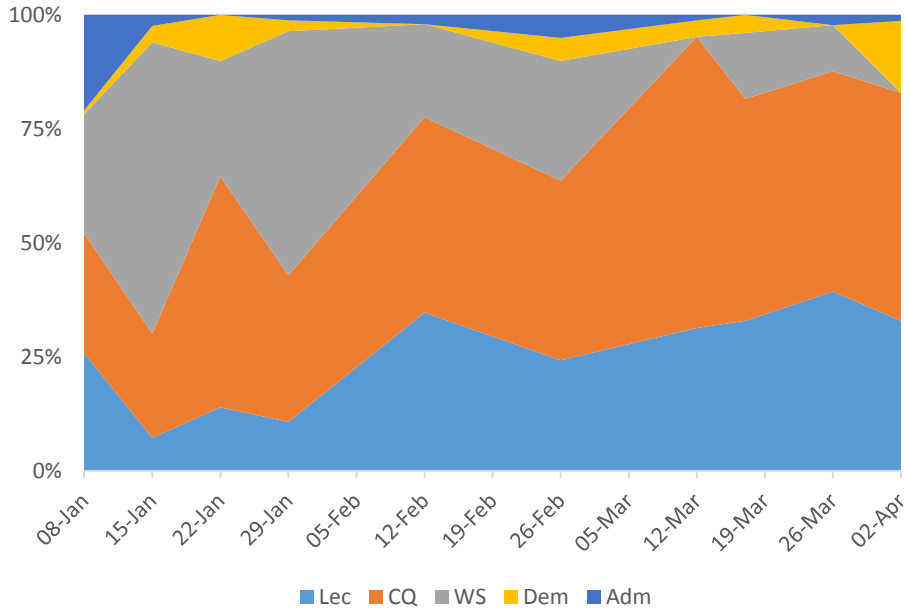
Instructor 1.1 overall



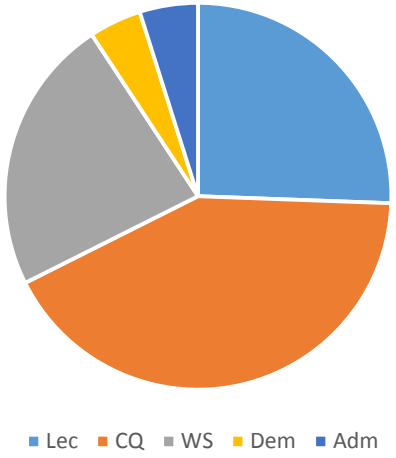
Instructor 1.2 overall

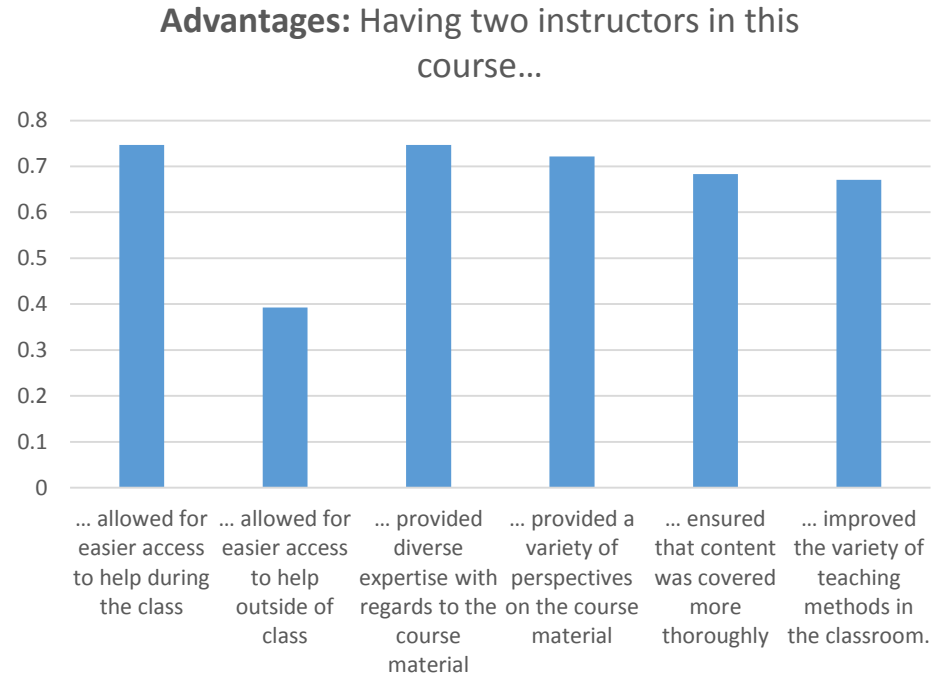


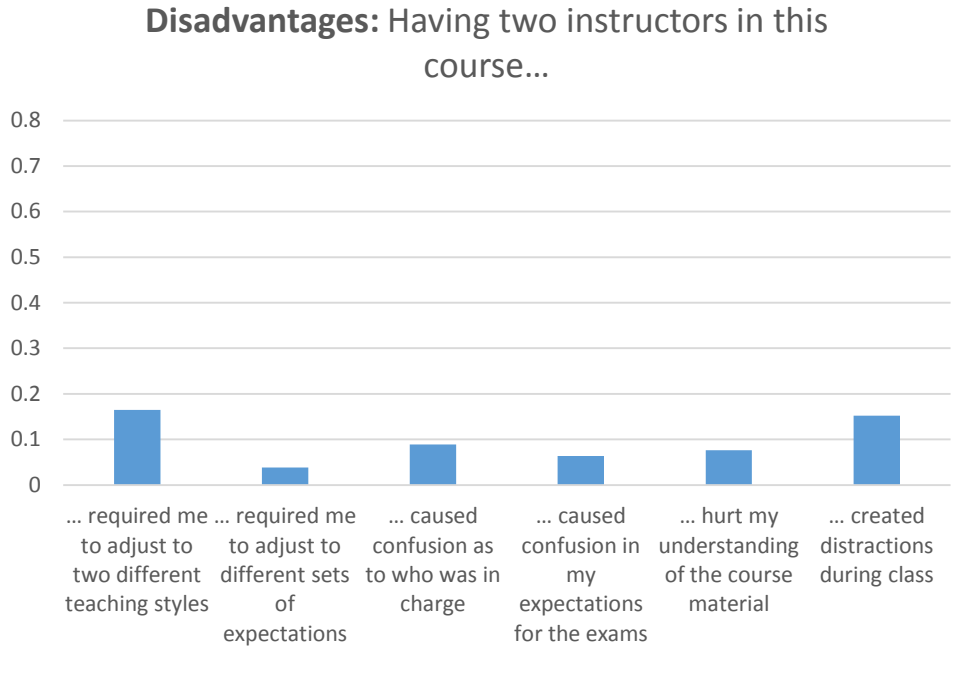
Whole class over time



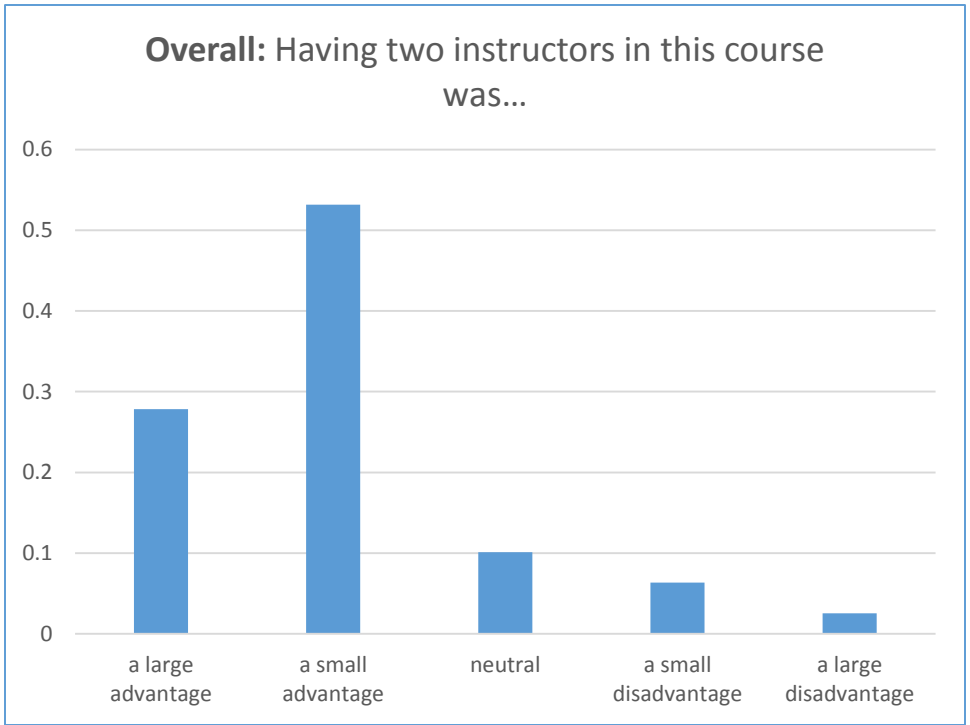
Whole class overall







Fraction of students



Student comments:
How do you think this co-taught course could be improved?

"Perhaps alternate classes. It becomes distracting when one prof adds comments to the other prof while they are teaching."

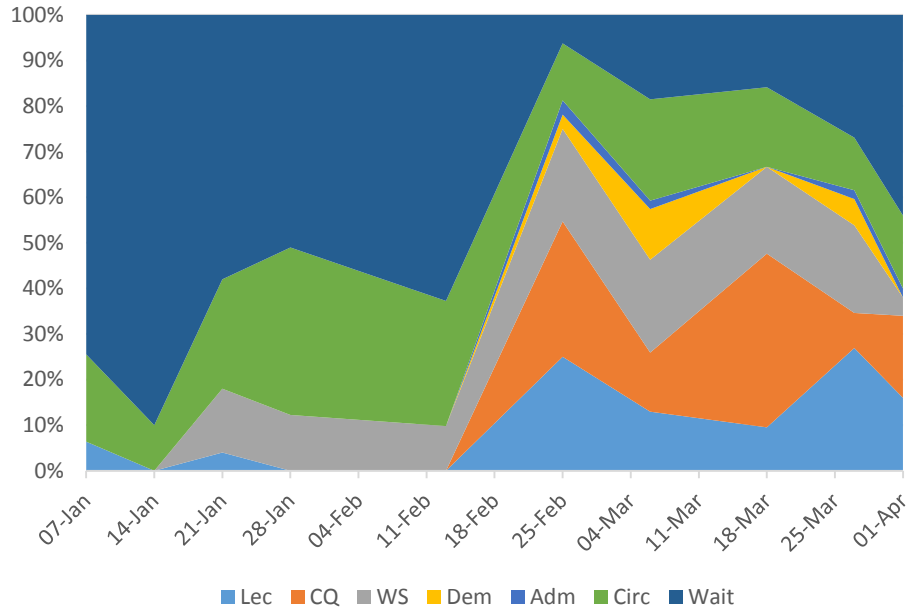
"... I like the different perspectives and different styles of teaching. ..."

"More organization in terms of who answered / explained what"

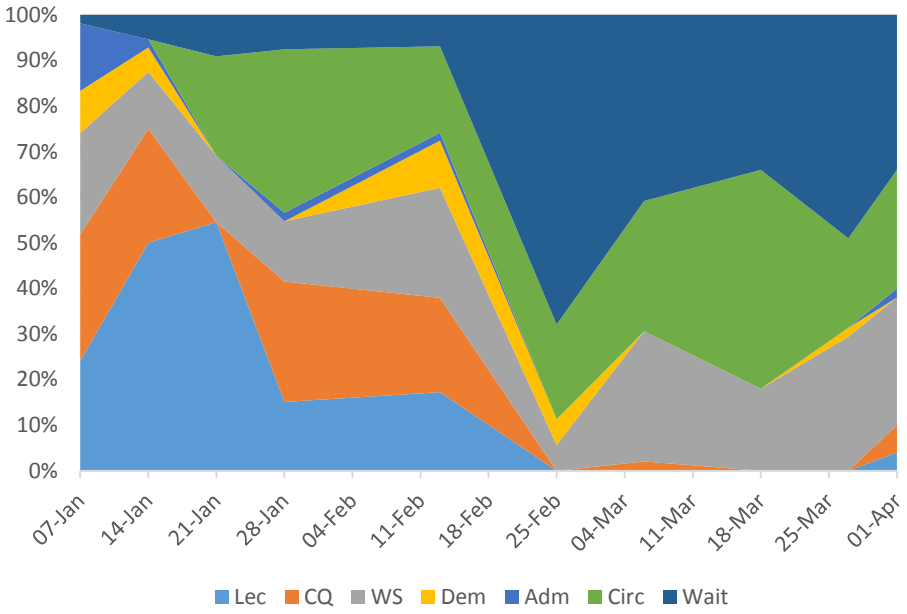
Model 2:
Half block plus speckle

Course 2: 290 students

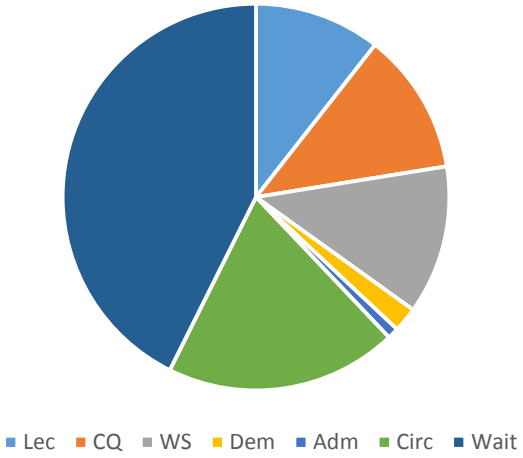
Instructor 2.1 over time



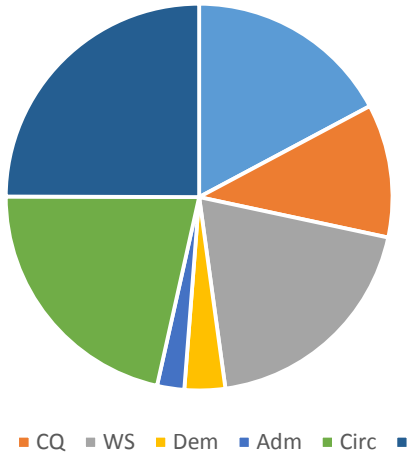
Instructor 2.2 over time



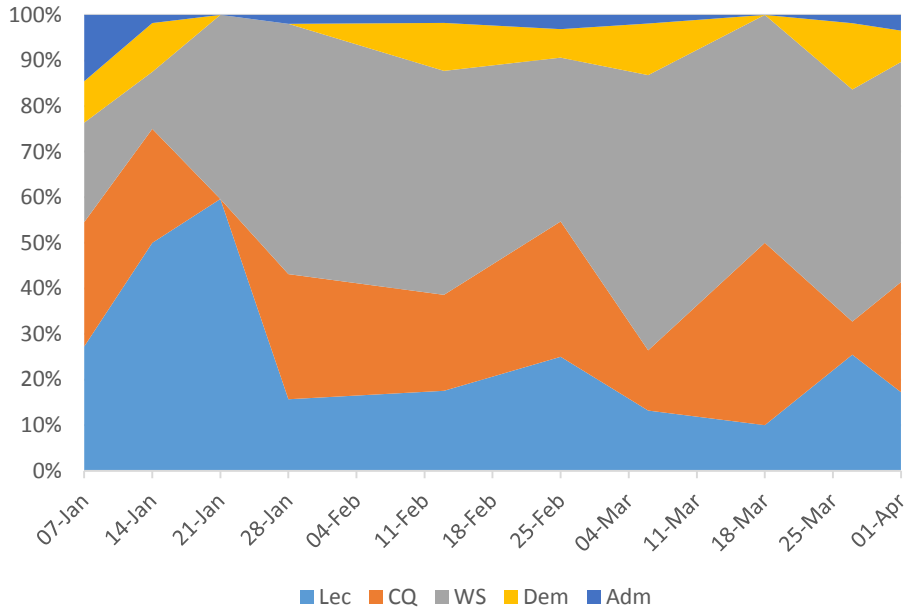
Instructor 1.1 overall



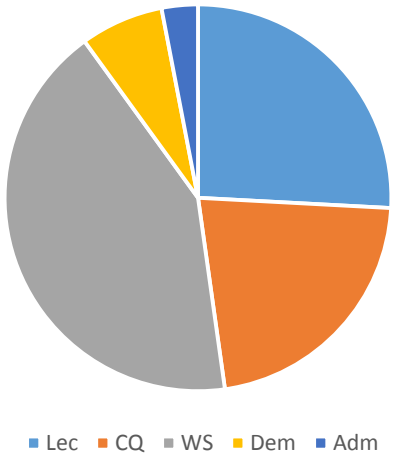
Instructor 2.2 overall



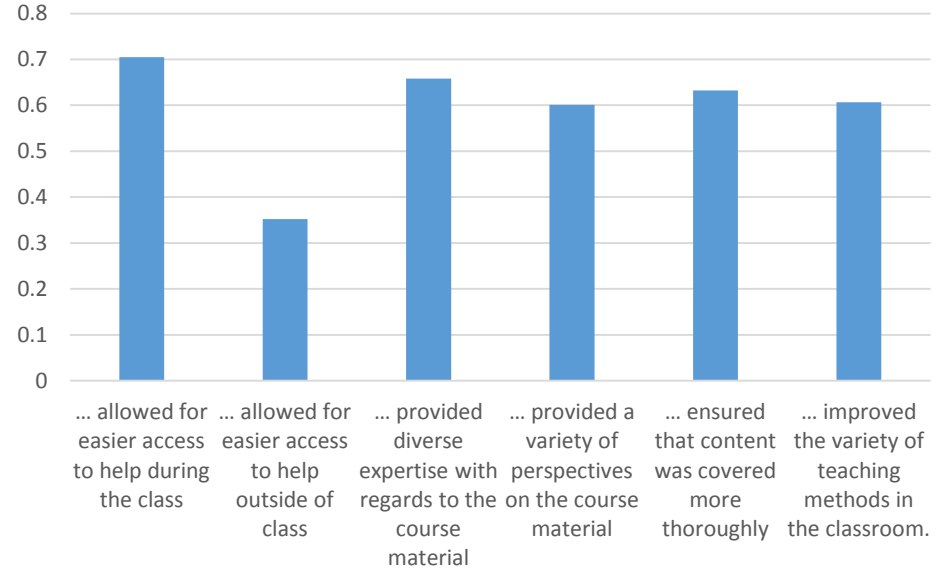
Whole class over time



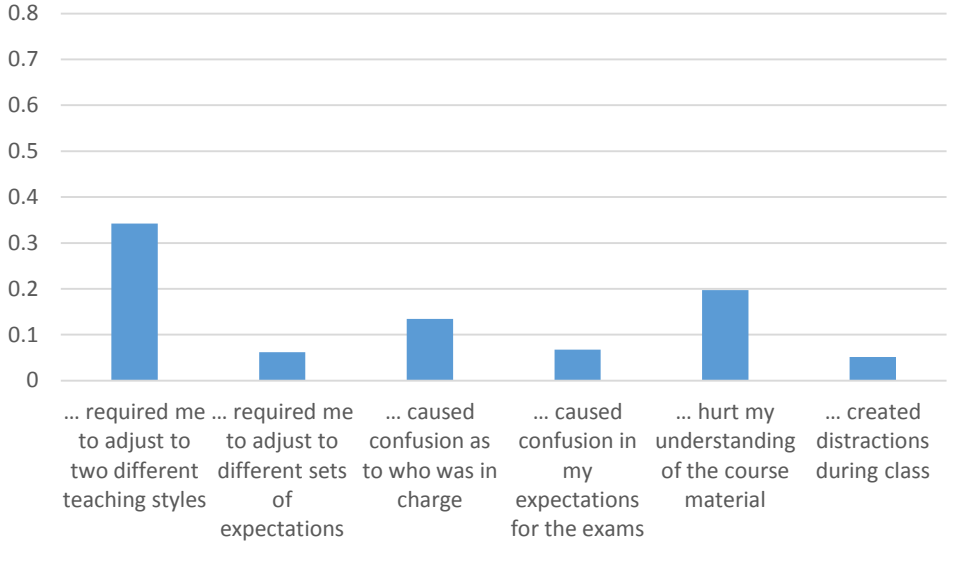
Whole class overall



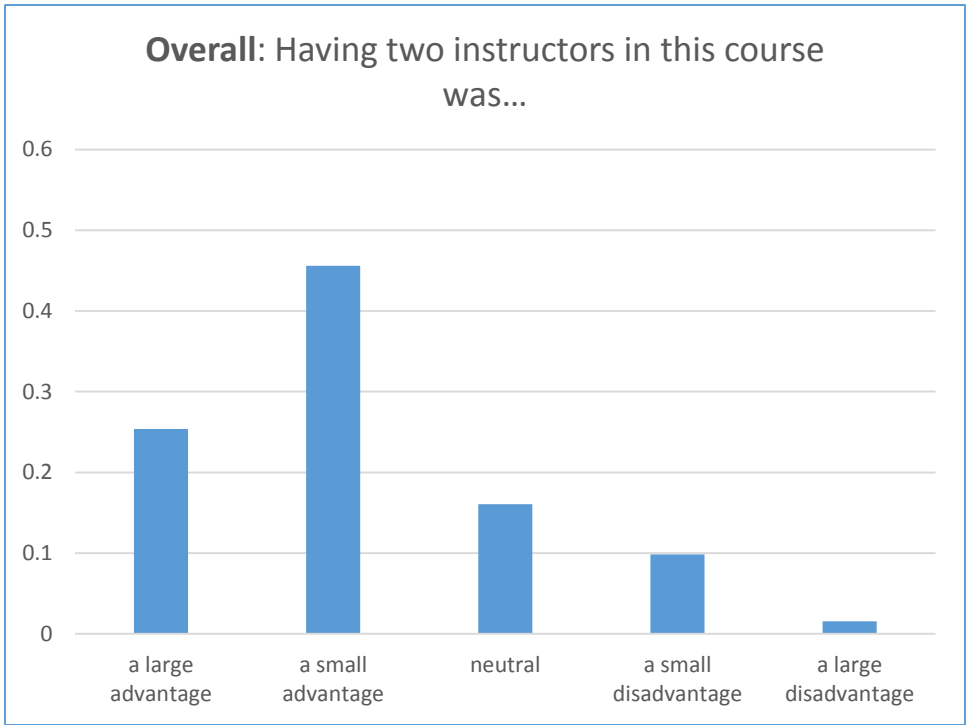
Advantages: Having two instructors in this course…



Disadvantages: Having two instructors in this course..



Overall: Having two instructors in this course was…



Student comments:
How do you think this co-taught course could be improved?

"The teaching style was very different and caused me to struggle in one part of the course."

"Co-teaching, to me, isn't an ideal method of teaching. Adjusting to different teaching methods is an unnecessary burden on top of the stressor involved with understanding the material."

"I enjoyed having two instructors, they fed off of one another and filled in gaps where the other may have thought unnecessary to cover or did not think of mentionning. [sic]"