

Teacher-Student Discourse in Active Learning Lectures

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Context

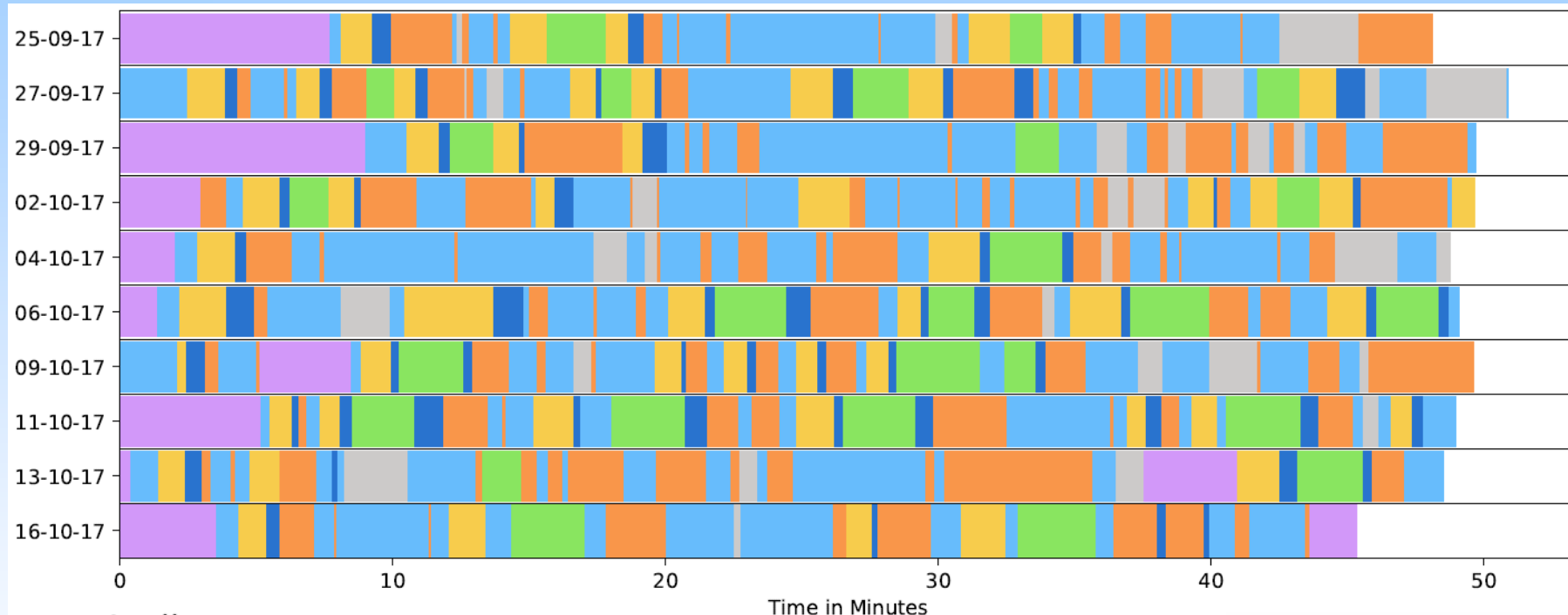
- Large, research-intensive Scottish university
- Physics 1A and 1B classes (introductory level)
- First-year, calculus-based classes
- Typical demographics:
 - ~ 250-300 students
 - ~ 75:25 male:female gender balance
 - ~ 50:50 majors:non-majors balance
- Taught in 'Flipped Classroom' format

Motivation

- Active engagement reasonably well-studied now
- But what does an active engagement lecture 'look like'?



Teacher-Student Discourse - Quantitative



See PERC poster →
and Wood *et al.* Phys. Rev. PER
12, 010140 (2016)



Teacher-Student Discourse - Qualitative

- Video recording of lectures
- Analyse lecturer-student interactions from socio-cultural perspective
- Identify purposes of dialogues
- Three main types of dialogue found

Involving students in sense-making

- Often takes place during Peer Instruction episodes
- Invite student explanations for answer
- Push students towards higher order cognitive processes

Guided expert modeling

- Often takes place during worked examples
- Sequence of (closed) questions requiring analysis or understanding rather than recall
- Lecturer-controlled interaction used to guide students' thinking while demonstrating how to solve a problem

Wonderment questions

- Student-initiated questions
- Focus on causes rather than facts, making predictions, etc.
- *“What would happen if...”*

Nature of the Dialogues

- Structurally authoritative
 - Initiation-Response-Feedback (IRF) structure
 - see Sinclair & Coulthard (1975)
 - Controlled by the teacher
- Ideologically dialogic
 - Invites student involvement
 - Promotes sense-making over rote learning
- Established dialogic idioculture

Implications for Practice

- Important role of classroom environment / classroom norms
- Allow student influences on content and direction of classroom sessions
- Enthusiastically and openly invite *and follow through on* student contributions
- Naturally facilitated by Flipped Classroom structure

For more details see

A.K. Wood *et al.* Teaching in Higher Education (2018) →

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