

Presenting and Lecturing in Engineering



1

EPFL Schedule Day 2 2025

MORNING

9:00 Defining learning, evidence of learning

10:30 *break*

10:45 Your Day 2 lessons

12:00 Reflective activity

12:15 *lunch break*

AFTERNOON

13.15 Teaching with questions
Active learning

14.30 *break*

14.45 Classroom management

15.45 Video analysis

16.45 Conclusion, prep for Day 3
Reflective activity

****hand in your Daily Reflection*

2

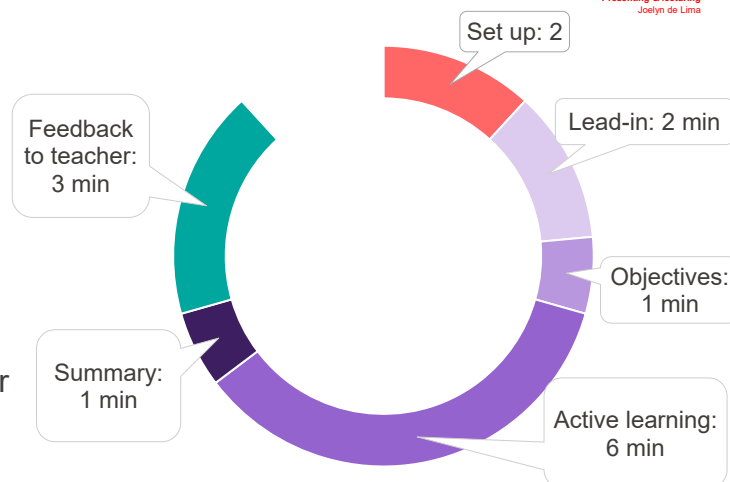
Notes on active learning



3

Day 2 lessons

1. Collect the equipment
 - Group folder
 - Video equipment
2. Break until 10.30
3. Teach your Day 2 lessons, per lesson cycle (video, feedback sheets) 5 x 15' cycles
4. Morning Reflection at 12.00



Wagner ->stays here | Bach -> CO 120

Afternoon starts 13.15 in room ME D0 1618

4

Notes on teaching with questions



5

What questions do your students ask?

When a student asks you a question, it shows some cognitive effort
But can also result in you doing the next cognitive steps --> never work harder than your students

6

6

Notes on active learning



7

Notes on asking questions and encouraging responses



8

Notes on active learning strategies and student participation



9

Notes on classroom management



10

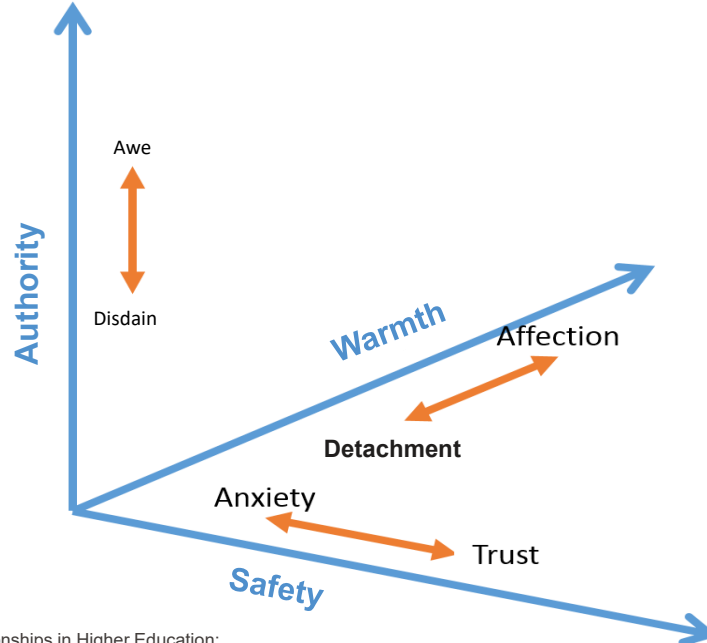
Table X.2 How do interactive teaching strategies influence the three-dimensions of the student-teacher emotional relationship?

| Dimension | Reinforcing aspects | Detrimental aspects |
|--|--|---|
| Authority <i>awe, admiration</i> vs. <i>disrespect, disdain</i> | Teacher demonstrates disciplinary expertise by guiding students' thinking (through assigned tasks and questions), rather than by expository presentation Teacher demonstrates skill in facilitation, rather than presenting | Class is noisier, more improvisational than traditional class Teacher has fewer opportunities to awe students with their erudite expertise Teacher doesn't conform to typical "professorial" behavior Lesson content may come from a reading or peer discussion rather than directly from the teacher Teacher shares control of information flow and class time with students |
| Warmth <i>warmth, liking, care, sense of belonging</i> vs. <i>detachment</i> | Teacher have increased opportunities to use verbal and non-verbal cues to solicit, welcome, and value students' contributions Teacher is attentive and facilitates the participation of all students Teacher is willing to adapt and revise their teaching plan | Teacher asks students to do things outside of STEM classroom norms |
| Safety <i>safety, trust</i> vs. <i>fear</i> | Teacher is reliable, consistent, and adheres to the announced expectations Teacher trusts students to come prepared and participate Teacher demonstrates for students that interactivity results in robust and effective learning Teacher minimizes potential risk and embarrassment for students | Students are asked to expose themselves to potential embarrassment Teacher breaks implicit STEM classroom code |

Table X.1 How do common classroom management strategies influence the 3-dimensions of the student-teacher emotional relationship?

| Dimension | + Authority - | | + Warmth - | | + Safety - | |
|---|--------------------------------|------------------------|---|-------------------------|------------------|-------------------|
| Teacher behaviors | awe, admiration, respect | disrespect, disdain | warmth, care, sense of belonging | detachment, coldness | safety, trust | fear, distrust |
| Causing a student embarrassment | | | | | | |
| Last-minute cancellations or changes | | | | | | |
| Punishing students with a surprise test | | | | | | |
| Requiring students to keep on their webcams | | | | | | |
| Joking about a disruption in front of the entire class | | | | | | |
| Telling students to leave the classroom | | | | | | |
| Speaking rapidly without pauses and not answering students' questions | | | | | | |
| Allowing students to determine when to have their webcams on or off | | | | | | |
| Adapting assessment to unexpected events | | | | | | |
| Learning students' names | | | | | | |
| Using subtle non-verbal cues, such as a direct gaze or physical proximity, to remind students of teacher expectations | | | | | | |
| Speaking with disruptive student(s) after class, in a less public way | | | | | | |
| Providing students with a document that clearly communicates behavioral expectations | | | | | | |

Safety
Warmth
Authority



Tormey, R. (2021). Rethinking Student-Teacher Relationships in Higher Education: A Multidimensional Approach. *Higher Education*. <https://doi.org/10.1007/s10734-021-0711-w>

11

Meta-moment: classroom relationships

- What pro-active activities were used in this class to establish a constructive relationship?

12

Notes on reactive classroom management



13

Homework

1. Daily reflection -> submit it before you go
2. Preparation assignment on Moodle
3. Prepare your lesson for Day 3
 - Choose a cutting edge procedure or experimental technique that will pose a cognitive challenge for your audience. Focus on modeling disciplinary thinking
 - Use the Day 3 lesson planning matrix
 - 15 minutes
 - Include active learning

See you next Tuesday!

14