

Building Peer Relationships in a Gateway Electrical Engineering Course

Pre-assigned groups tested across two courses

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INQUIRY QUESTION

How do pre-assigned groups create opportunities for relationship-building and collaboration in a gateway Electrical Engineering course?



1 Context & Challenge

- EE1111A is the gateway to Electrical Engineering (EE)
- Students' first encounter with the discipline; they may switch out of major
- Team-based industry practice shapes project work across the curriculum
- A group design project accounts for 30% of the course grade

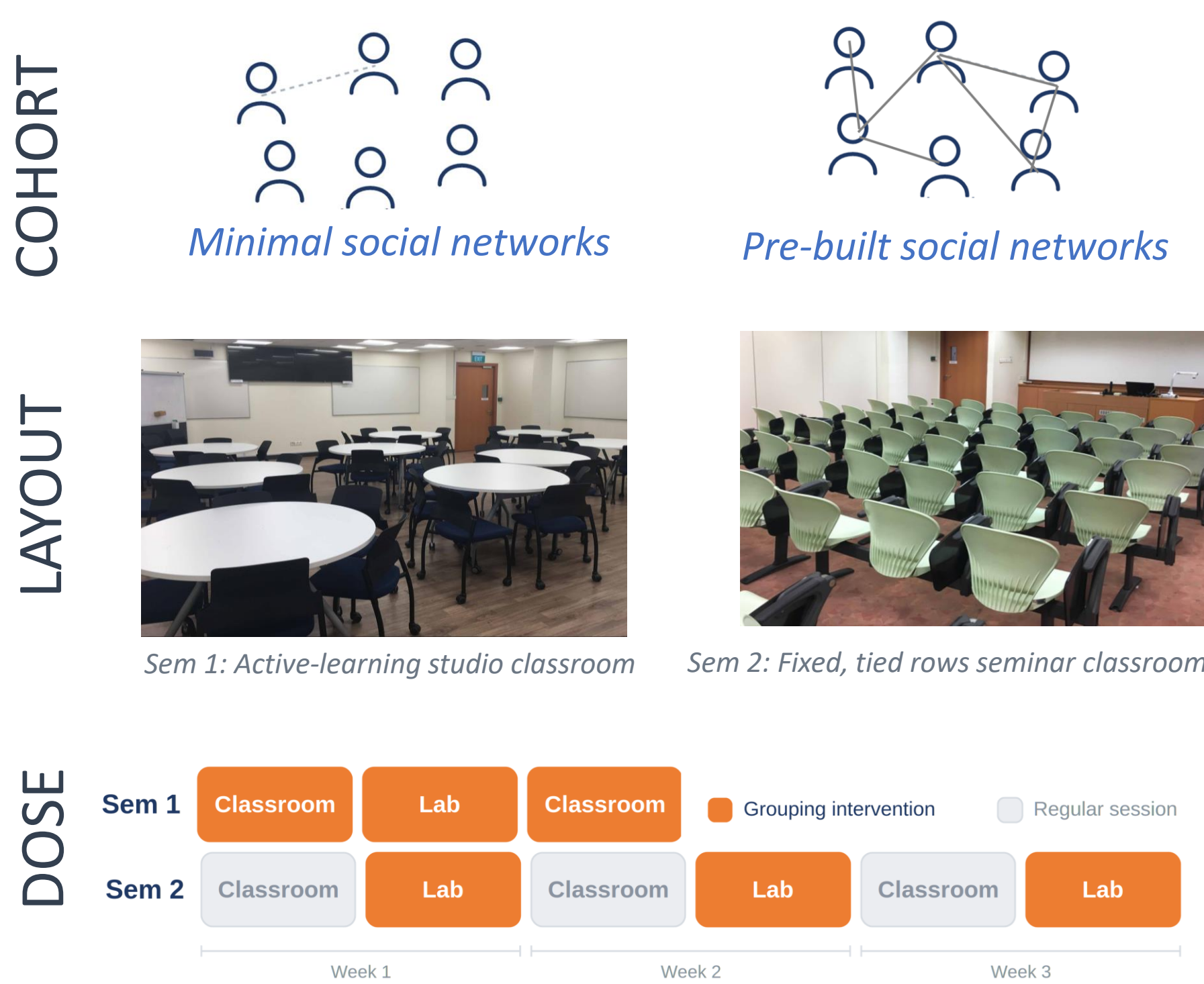
2 The Small Change

- Groups of 6, randomized & reshuffled each session
- Rationale made explicit
- Teacher as Social Catalyst



Across 3 Sessions, ~1/3 of class met

3 Two Settings



4 The Evidence

Data Sources :

- Design Project Topic: Students choose a default topic or propose their own. Proposing = taking a risk

8/8 vs 6/9

groups took a design risk (S1 vs S2)

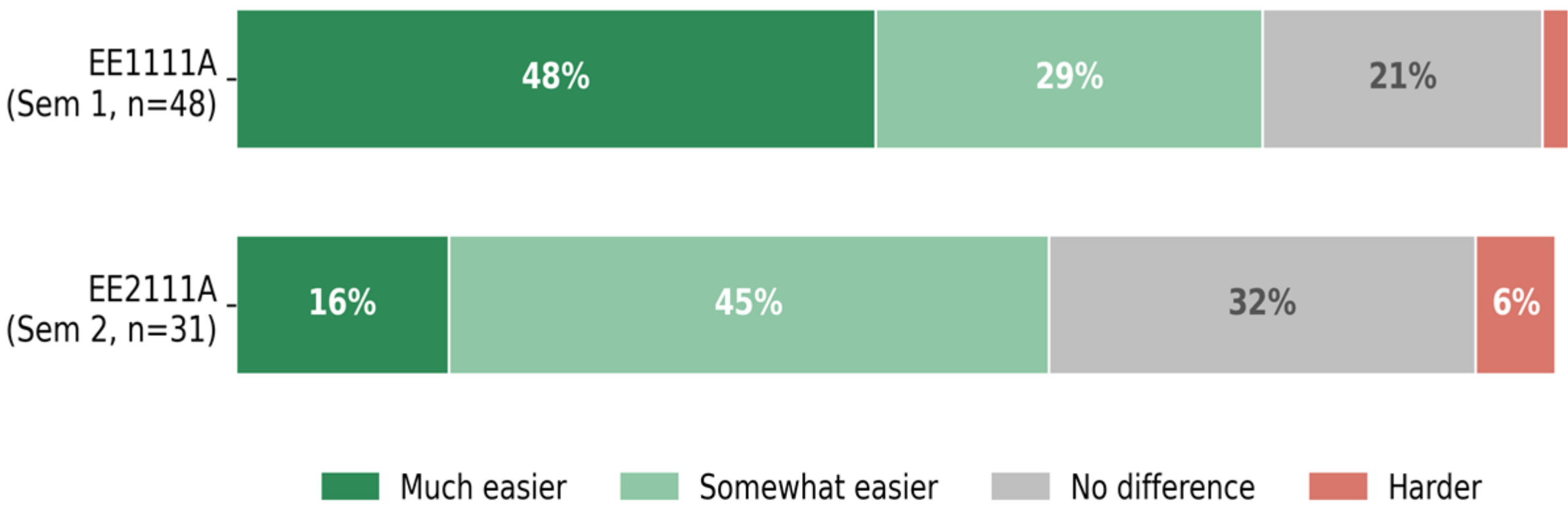
- Instructor Teaching Effectiveness Score

4.8/5

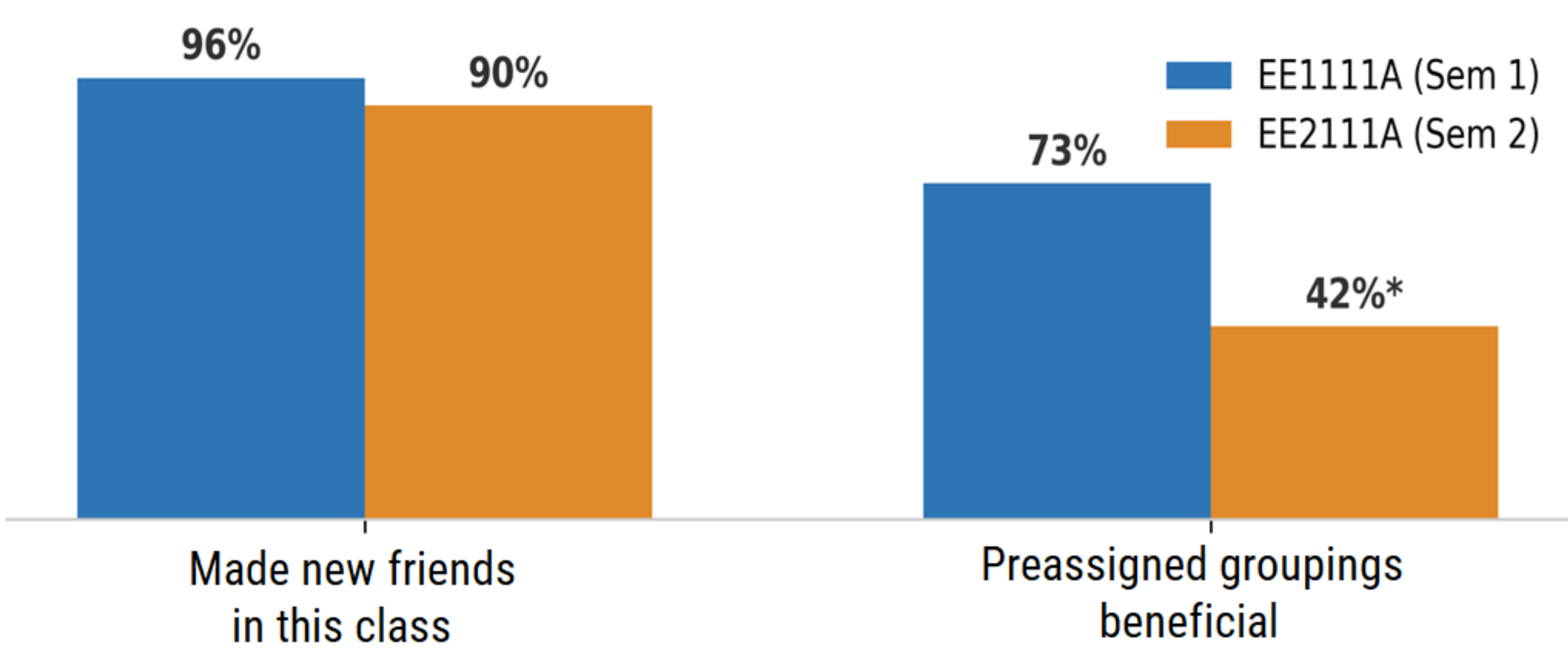
Normalized teaching score — highest in 3 yrs (S1)

- Survey on Connecting with Classmates

Connecting with classmates made easier



Made friends vs. found the groupings beneficial



STUDENT VOICES

"Yes, we were forced to meet people from diverse backgrounds" [Sem1]

"Yea it was a good introductory session through which I was introduced to people without it getting awkward as we had a purpose to work with each other." [Sem1]

"No, some of us already know each other and we may not sit with other people that we do not know" [Sem2]

5 Learning Points

Relationships -> Risk-taking

Deliberate groupings build relationships that provided psychological safety (Edmondson, 1999), enabling risk-taking efforts towards more innovative projects.

Teacher as Social Catalyst

The instructor's role as a social catalyst - actively forming groups, brokering introductions and making the rationale explicit.

6 Limitations

Quasi-experimental, mixed-methods design. Cohorts, courses, rooms and class sizes differ, plus a less consistent Sem 2 dose. Evidence is self-reported; high friendship rates may reflect many activities, not the intervention alone.