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SALTISE
Supporting Active Learning & Technological Innovation in Studies of Education

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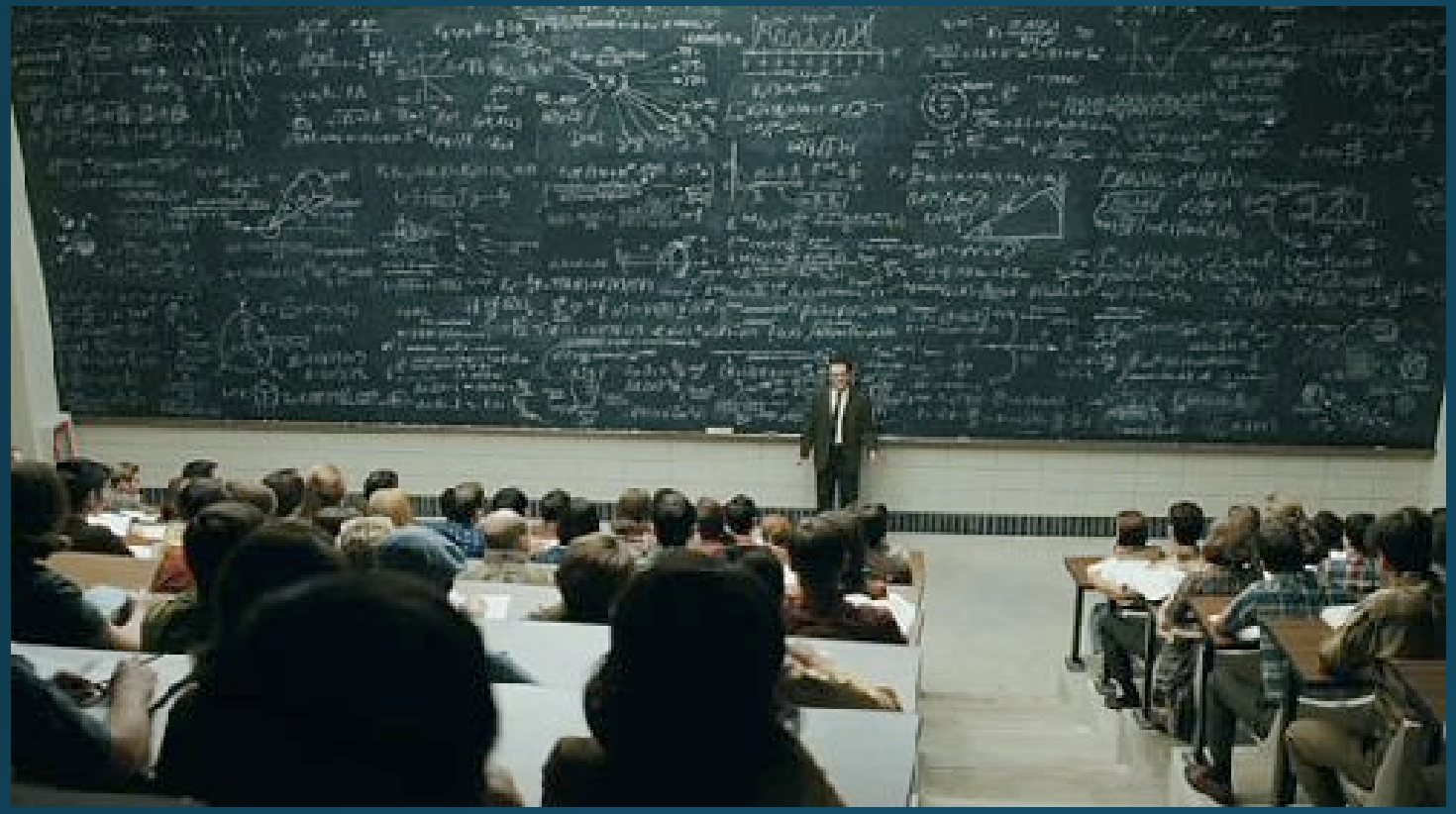
Go GRASP



IN TEACHER CENTERED CLASSROOMS…

TEACHERS KNOW WHAT WILL HAPPEN IN 5, 10 OR 30 MINUTES…

IN STUDENT-CENTERED CLASSROOMS:

YOU NEVER KNOW WHAT WILL HAPPEN NEXT!

Teacher's cognitive load

- Direct instruction (talking to class)
  - 1-to-1 (teacher monitoring class as a single unit)
- Active learning
  - groups working collaboratively
  - monitoring much more difficult
  - 1-to-N (teacher simultaneously monitoring N groups)
- Eye-tracking studies support these observations (Prieto, *et. al* 2015).

Difficulties for students too

Notice student in top left corner

- Study of participation patterns of students in group work and labs.
- >60% of time spent trying to flag teacher (so as not to lose place in the "queue").

Dillenbourg, *et. al* (2011)

Think of a typical problem session

- Group 1: Very strong
- Group 2, 3, 4: Average
- Group 5: Weak

Question: What happens if…

Dillenbourg's Latern

- Students tap Lantern to call for help.
- Lantern pulses, indicating length of time they've been waiting.

Time *wasted* trying to get attention of TA:

> *"The main result is that the estimated time wasted in chasing the TA was reduced from* ***62% … to 6%*** *in the Lantern condition.* ***Students simply continue to work while waiting****."*

Dillenbourg, *et. al.*, (2011)

Dillenbourg's Lantern

Reduces cognitive load of monitoring student progress

- One lantern / team of students.
- The color of the Lantern specifies the exercise that the team is working on. The students can turn the Lantern to choose an exercise.
- The intensity of light increases with time, showing how much time already spent on that exercise.

Alternatives

- From the same group: Shelf (clicker-based cueing)
  - Times wasted drops from 62% to 16% (compared with 6% for lantern)
  - Feedback not ***ambient***

The importance of *ambient* feedback

- The class becomes more self-regulating: teams more apt to help each other out.

"Lantern generated a social/spatial [organization] of the classroom into spatial clusters of two to three teams."

Photo: http://www.lantern.ch/product.php (accessed 19-Feb-2016)

Do we really need a lantern?

Introducing GRASP

- **G**roup **R**esponse and **A**mbient **S**tudent **P**articipation system
- Web application, native iOS and Android apps.

- Provides simple interface for
  - **monitoring** of group work (like lantern colours)
  - **requesting help** and queuing of help requests (like flashing lantern)
  - **ambient feedback**
  - **logging** teacher interventions (for professional development and / or research)

What's coming…

- A free classroom management tool
  - Innovation for AL pedagogy
  - *Significantly* cheaper than Lanterns.
  - Ubiquitous, portable, designed for use beyond the ALC. For example:
    - labs,
    - field work,
    - ???

Thank you very much

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References

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