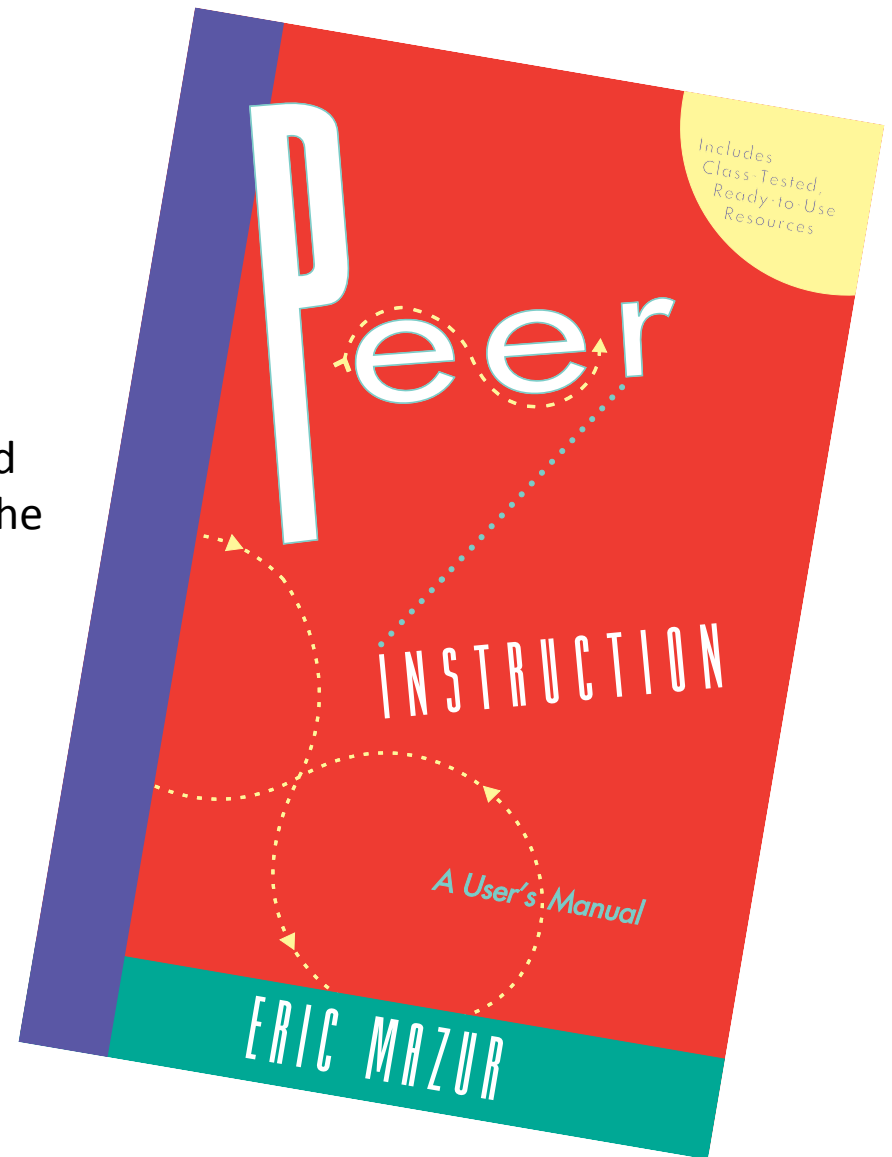


Leveraging Technology to Enhance Evidence-Based Pedagogy: A Case Study of Peer Instruction in Norway

Julie Schell and
Christine Lindstrøm

Peer Instruction

An evidence-based pedagogy developed by Eric Mazur at Harvard University in the 1990s.



Peer Instruction



Peer Instruction

A Flipped Classroom Approach



BEFORE CLASS: Nothing

IN CLASS: First Exposure to content through lecture

AFTER CLASS: Application of content at home, with homework

Image ©Knewton.com

Peer Instruction

A Flipped Classroom Approach

BEFORE CLASS: First Exposure to content through video lecture, reading, etc.

IN CLASS: Application of content learned at home

AFTER CLASS: Review, prep for next class

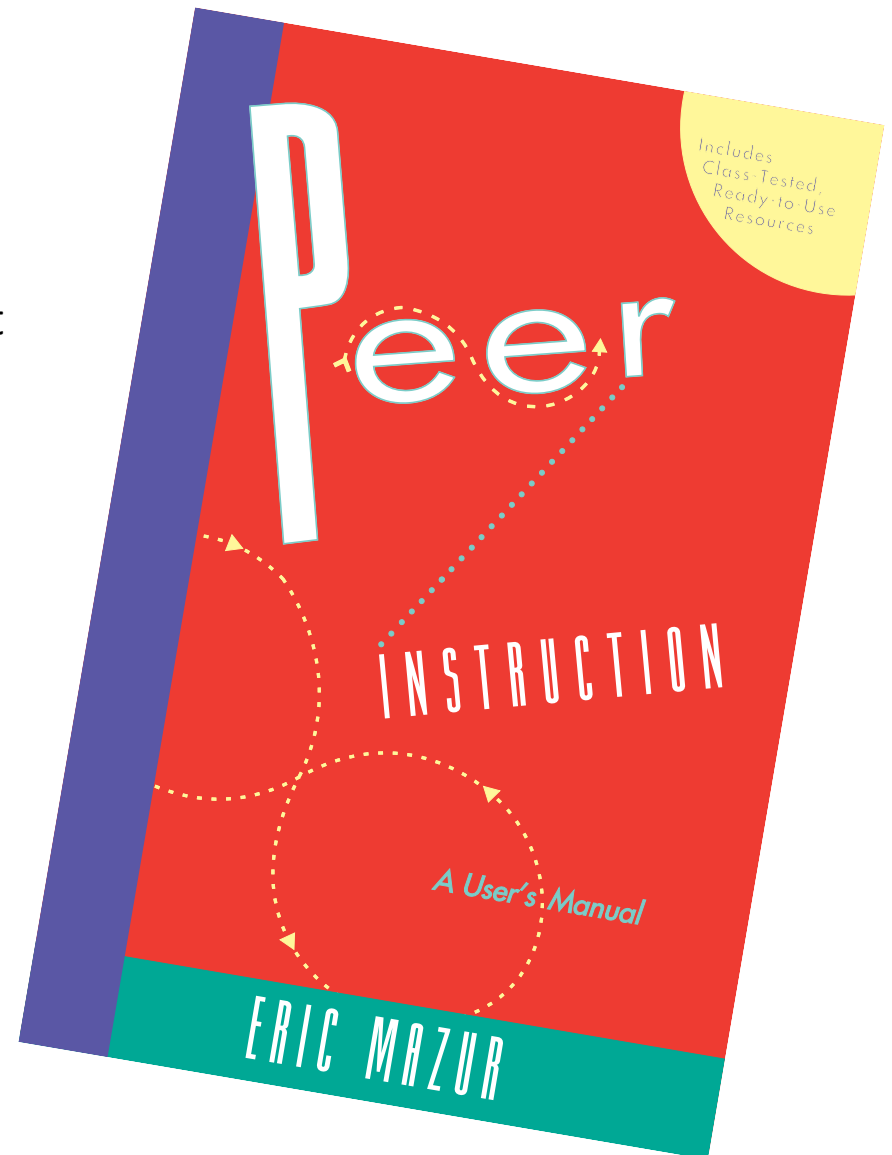


Image ©Knewton.com

Peer Instruction

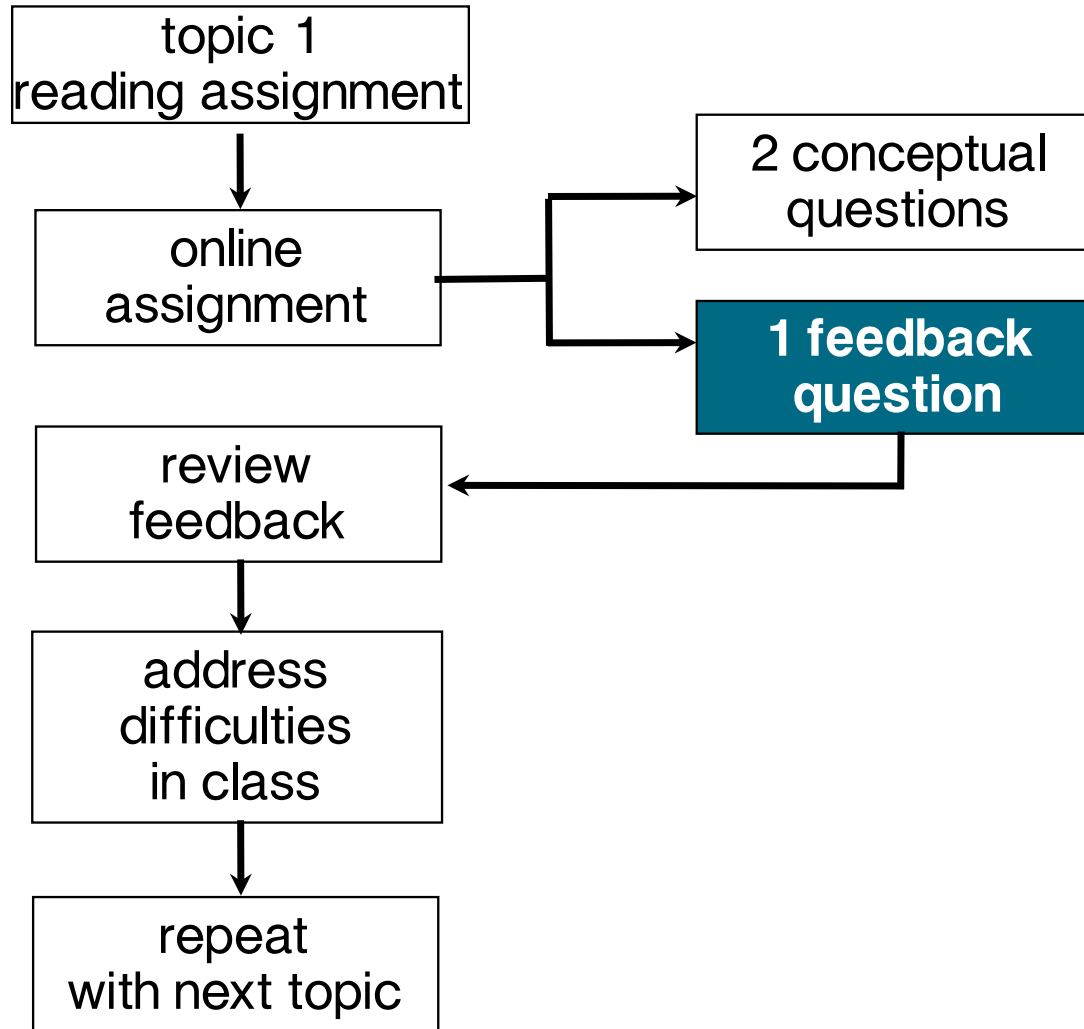
BEFORE CLASS: First exposure to content and completion of warm up activities, send feedback to instructor

IN CLASS: Time spent eliciting, confronting, and resolving student difficulties (from feedback) in-depth



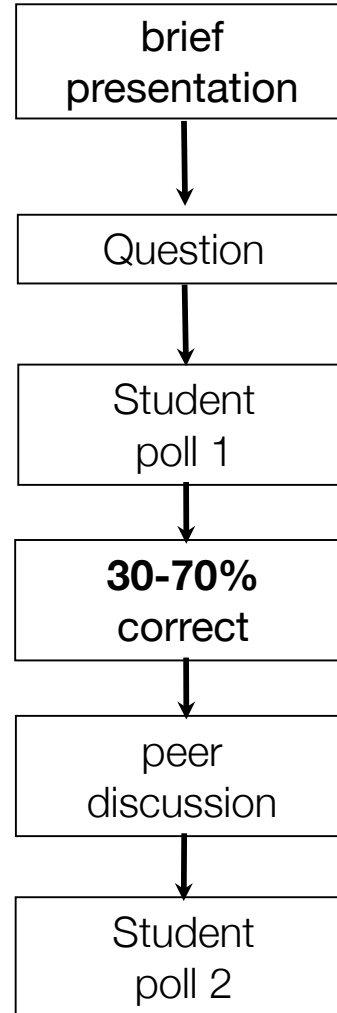
Just-in-Time Teaching

Before Class



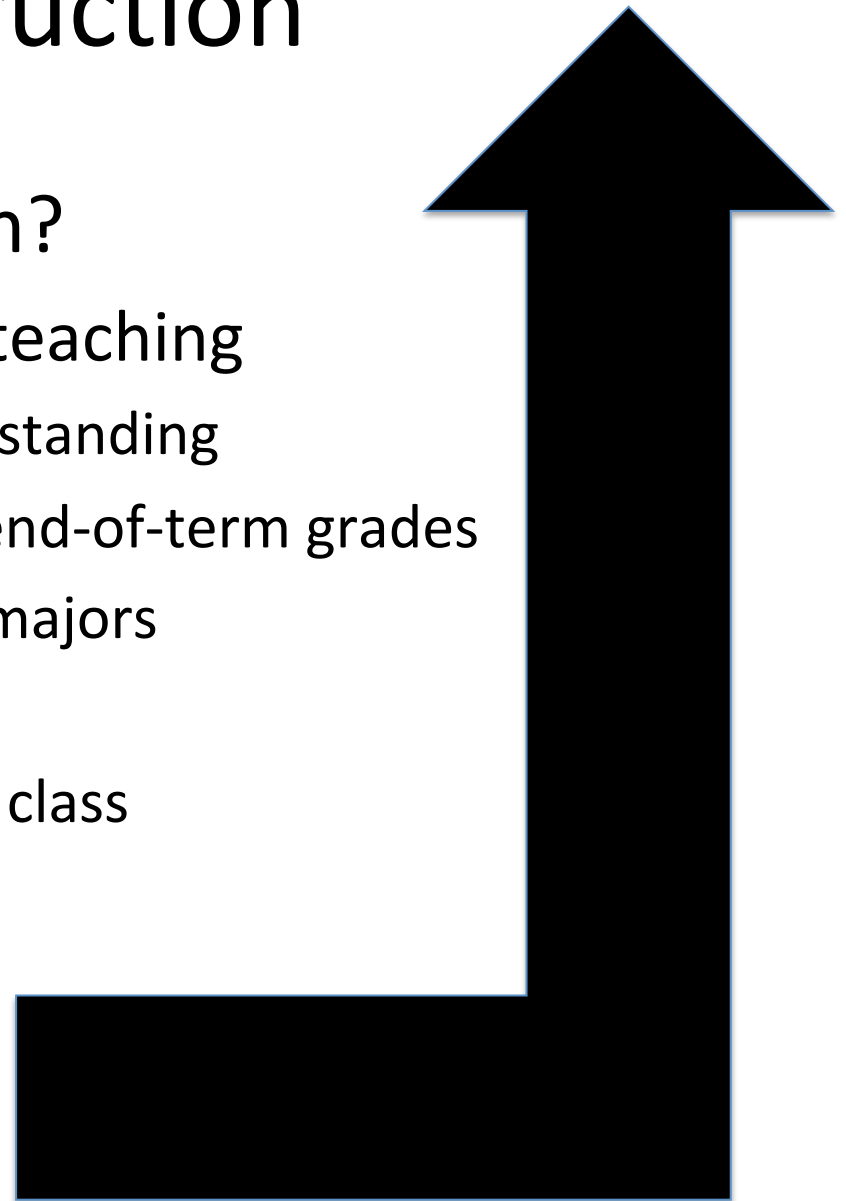
Peer Instruction

In Class



Peer Instruction

- Why use Peer Instruction?
 - Compared to traditional teaching
 - Student conceptual understanding
 - Student achievement on end-of-term grades
 - Retention in courses and majors
 - Attendance
 - Engagement in and out of class







A

A pink square with a white letter 'A' in the center. The letter has a thick black outline.

B

A green square with a white letter 'B' in the center. The letter has a thick black outline.

C

A yellow square with a white letter 'C' in the center. The letter has a thick black outline.

D

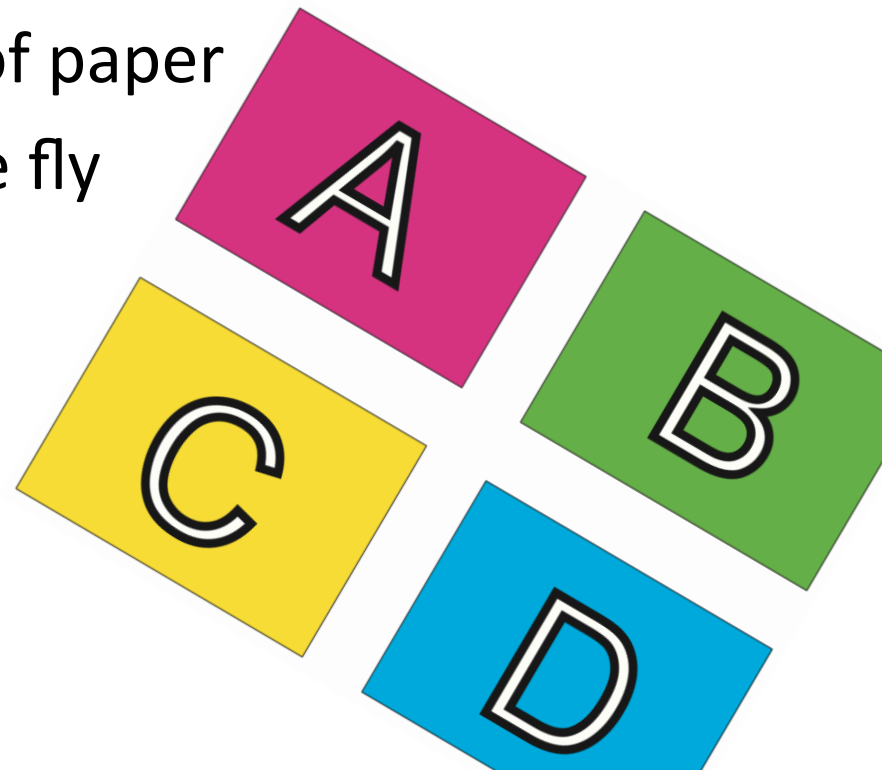
A blue square with a white letter 'D' in the center. The letter has a thick black outline.





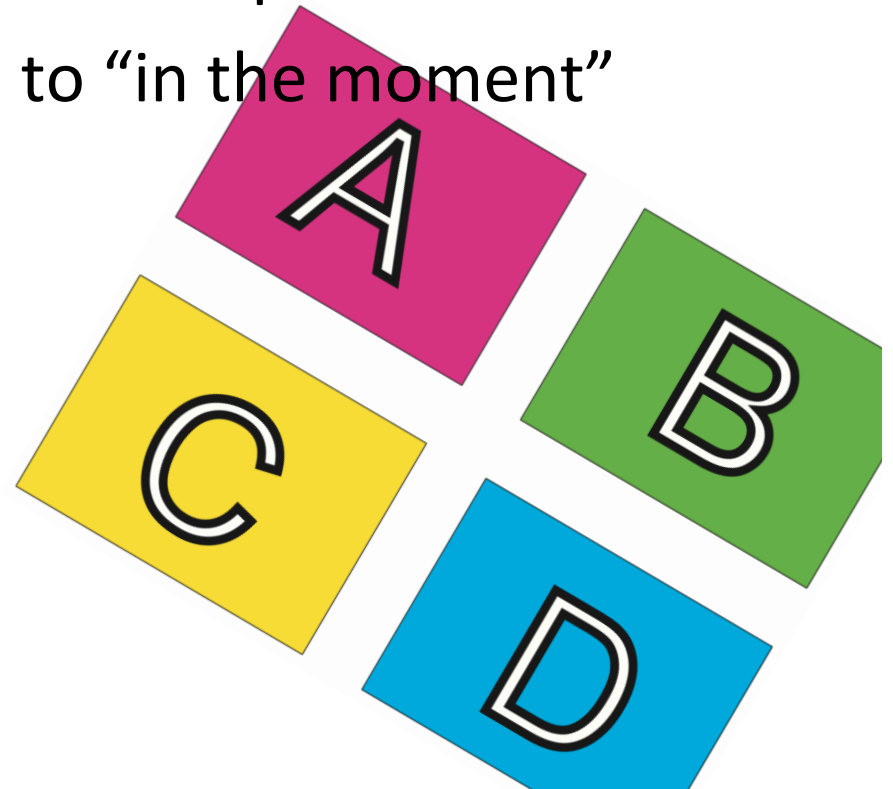
Peer Instruction

- Benefits of Low-Tech Classroom Response Systems
 - Easy to implement
 - The only cost is printing of paper
 - Easy to implement on the fly

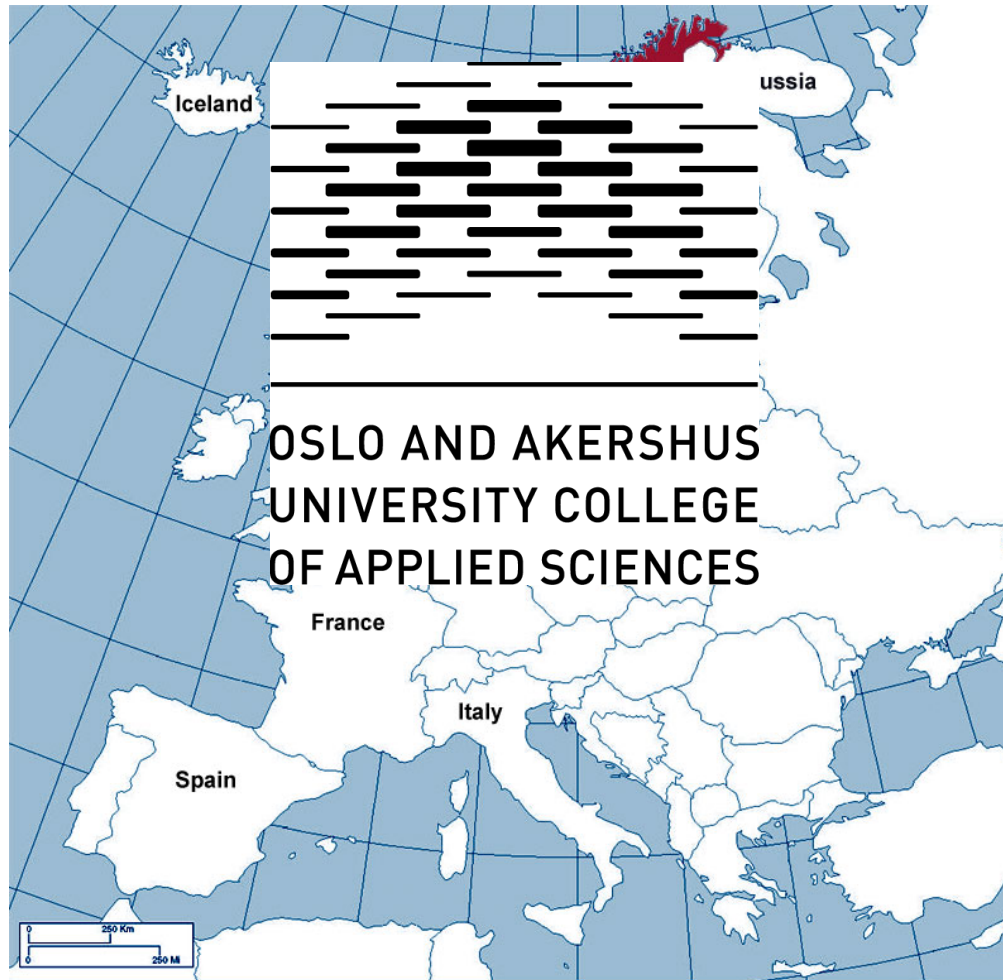


Peer Instruction

- Limitations of Low-Tech Classroom Response Systems
 - Relies on visual assessment of responses
 - Learning analytics limited to “in the moment”
 - Not anonymous

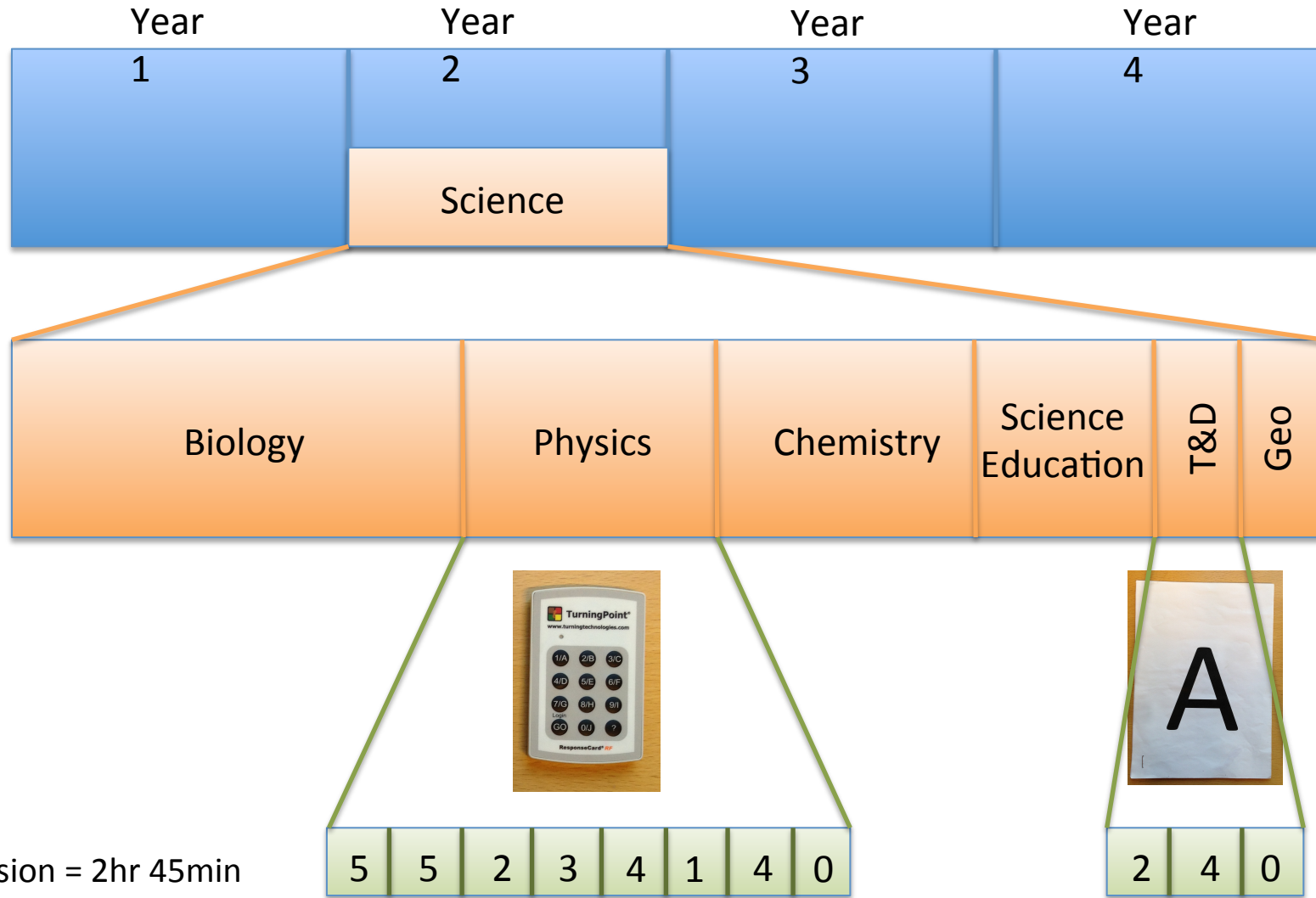


Peer Instruction in Norway



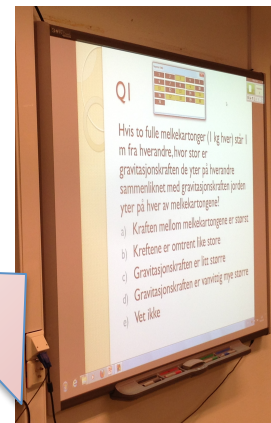
21 pre-service
primary school
teachers

Course structure

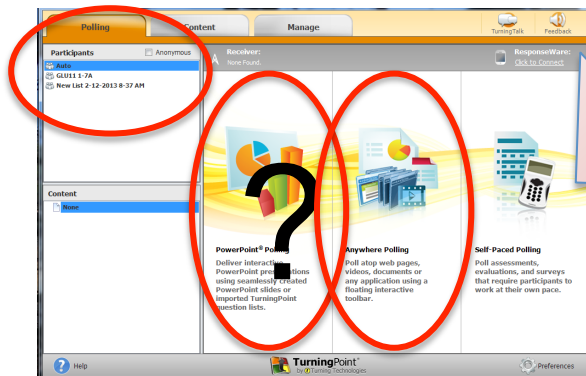
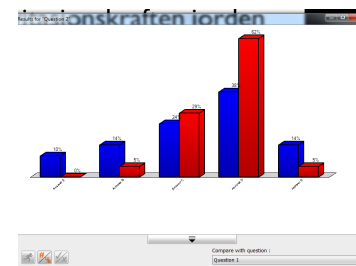
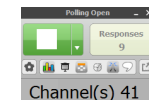




Implementing clickers



Response Table				
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			



Office

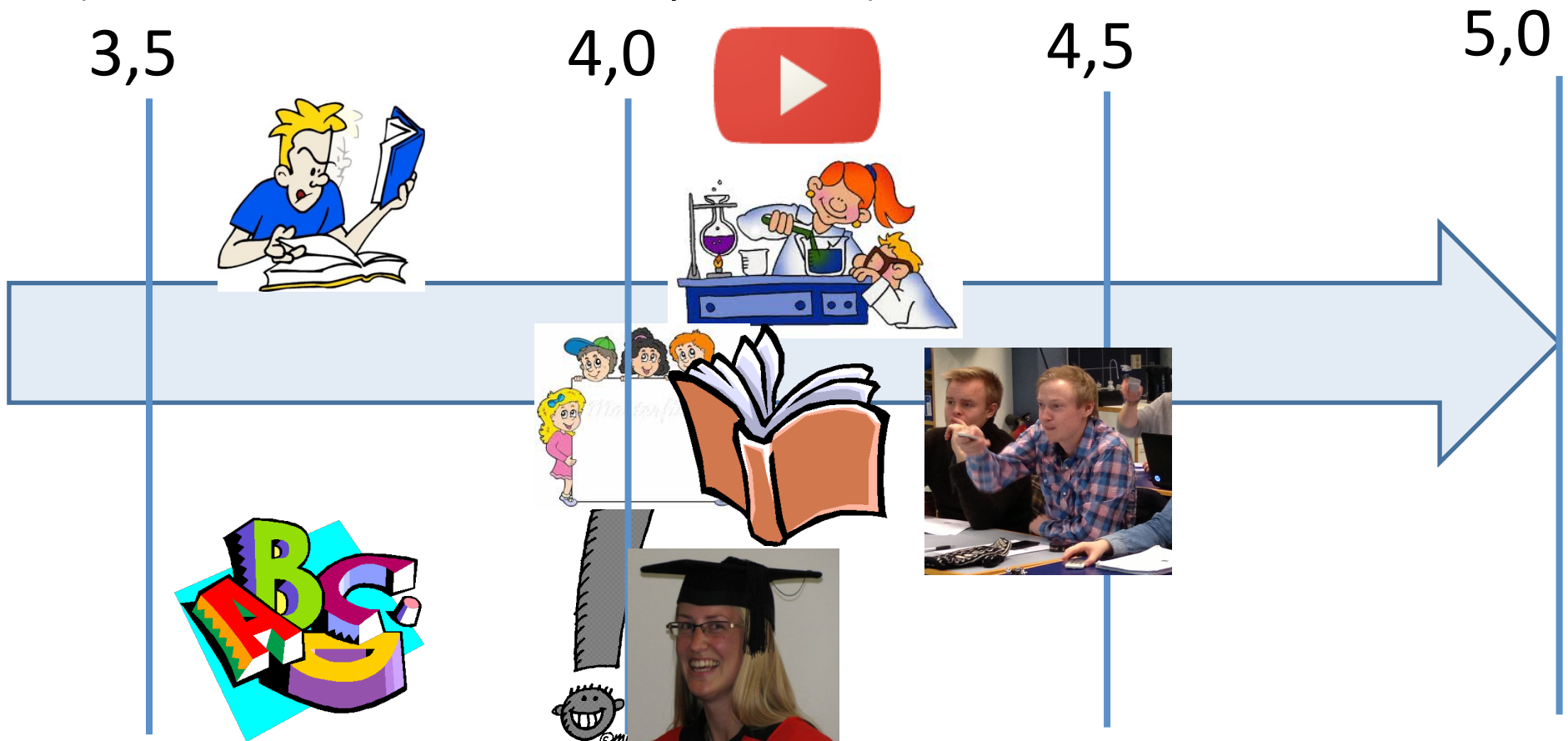


Classroom

Survey of Student Perception

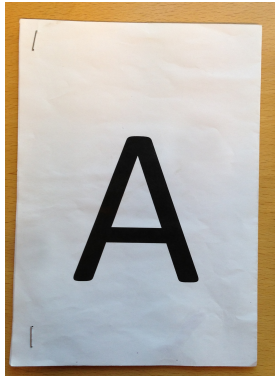
How valuable were the following aspects of the physics course for learning physics?

(1 = worthless; 3 = OK; 5 = very valuable)

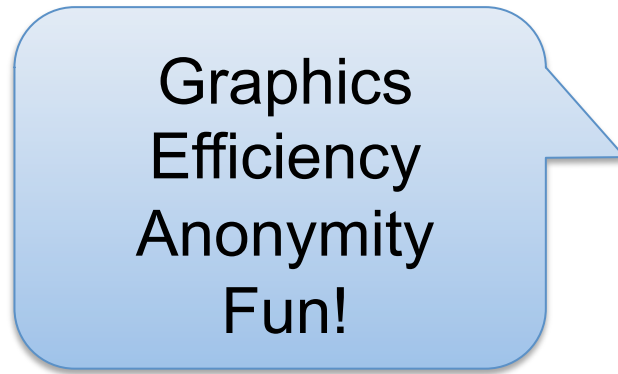


Survey of Student Perception

«Which do you prefer, and why?»



0

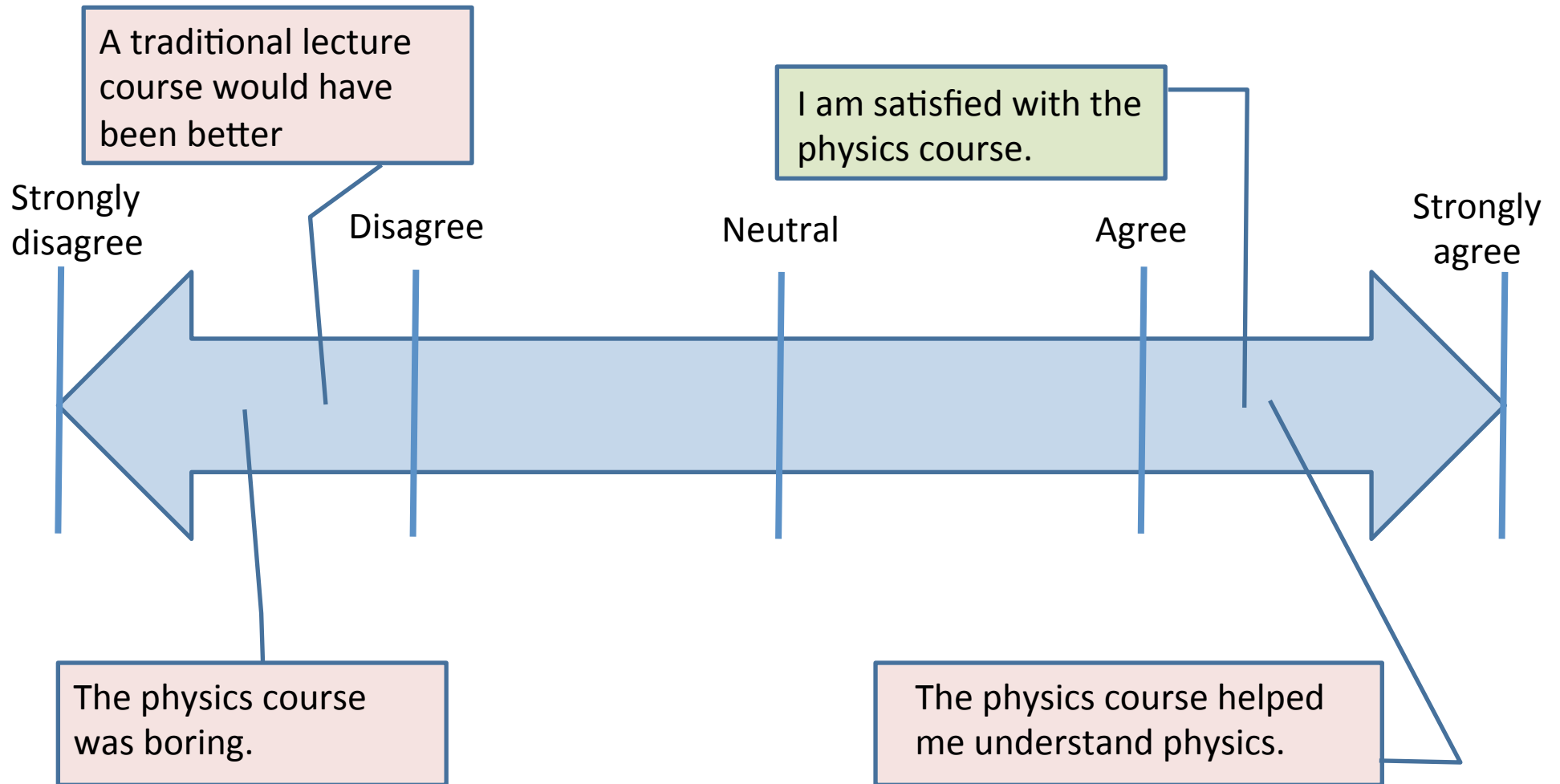


3

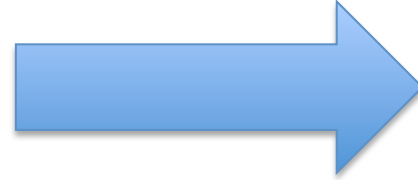
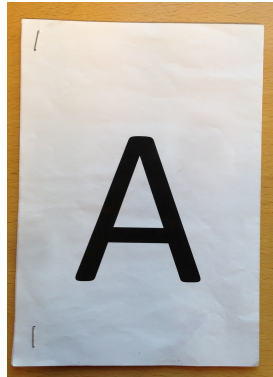


15

Survey of Student Perception



Summary



Summary

Fun!



Graphics
Efficiency
Anonymity



Useful for
teaching and
research
purposes

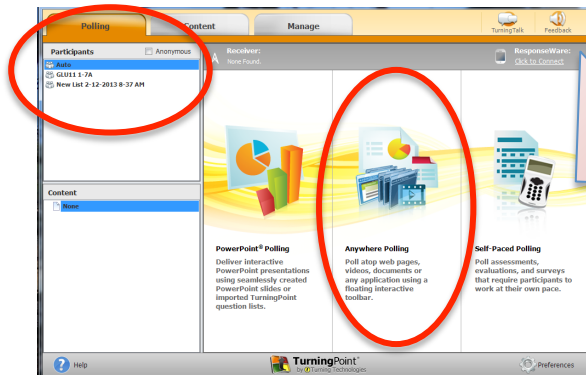


Summary

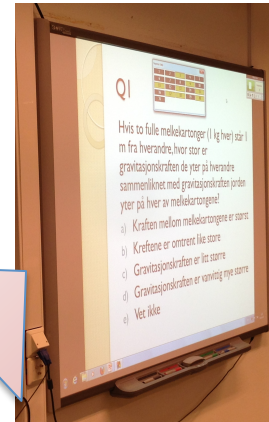




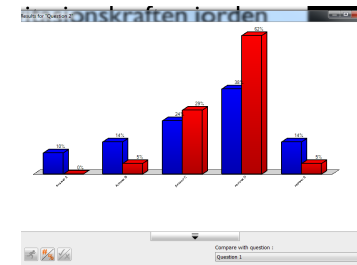
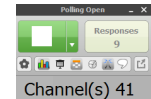
Tips for new clicker users



Office



Response Table				
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			



Classroom



Turn to Your Neighbor

The Official Peer Instruction Blog



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Recent Articles

How learning works in Peer Instruction and Learning Catalytics

March 11, 2013

March 11, 2013 @julieschell Many teachers are using Peer Instruction and classroom response systems (CRSs) to flip their classrooms and to engage students in deep learning and subject-matter understanding. After trying a range of CRSs throughout his career, in 2011 Eric Mazur teamed up with Brian Lukoff and Gary King at Harvard University to develop Learning [...]

How to FLIP your class...in 4 basic steps

March 4, 2013

FLIP in 4 Steps Contrary to popular belief, there is actually no “ONE way to flip a class” (Bergmann, 2012). However, after visiting flipped classrooms all over North America and talking with lots of teachers who have tried flipping across the globe, I have come to view the cycle of flipping as occurring through a [...]

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