Active Learning in (also large) Lectures – More than Clickers?

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AAU Annual Teaching Day

Agenda

1. You (Sociometry)
2. ZLL & TUHH
3. Peer Instruction & Think-Pair-Share
4. Take Home Messages

Agenda

1. You (Sociometry)

Sociometry I: Your Role

Door

Teacher

Counselor

Manage-
ment

Others

Windows Windows Windows

Sociometry II: Your Acad. Background

Nat. Sci.
Engineering

Medicine
Health Sci.

Language
Culture
Humanities

Art
Music

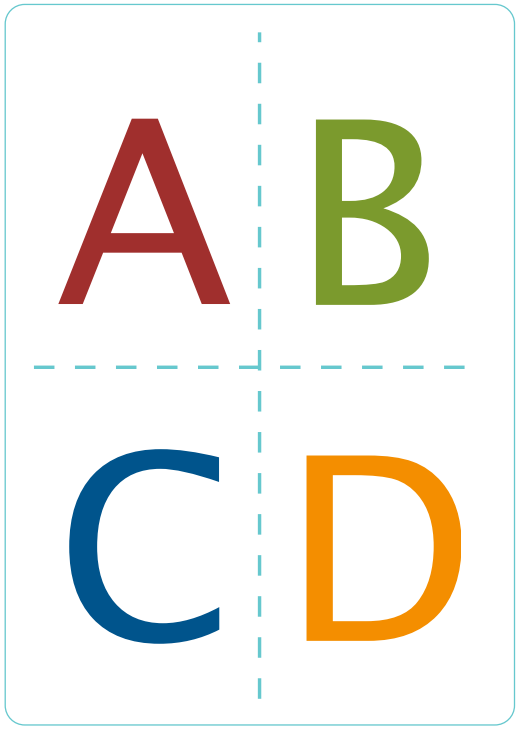
Law
Soc. Sci.

A B C D Cards

Please fold along center creases, any directions you like.

When you vote, refold in order to have your choice be visible.

Upon request hold up you vote accordingly.



MC I – Cards

Which of the following statements best meets your expectations?

A. Finding similarities of activating methods

B. Critically scrutinizing activating methods

C. Discovering factors impacting the successful application of activating methods

D. Getting to know several activating methods

Agenda

2. Me, ZLL & TUHH

TUHH – Hamburg

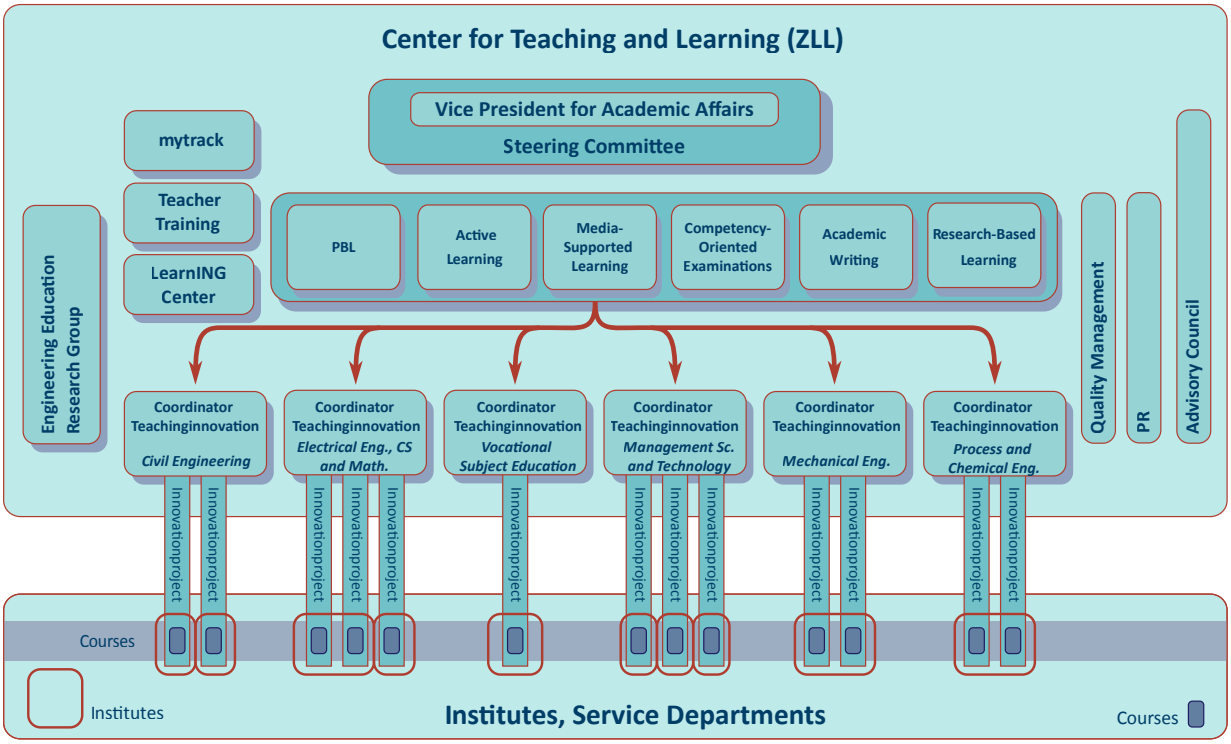
TUHH
Technische Universität Hamburg-Harburg

Student retention: TUHH's Measures

ZLL
Zentrum für Lehre und Lernen

- LearnING Center
- Interdisciplinary Bachelor Project
- readySTEMgo – Early identification of STEM readiness and targeted academic interventions
- mytrack – extended first years of study
- ContinuING – Continuing Education
- HOOU – Hamburg Open Online University
- **Center for Teaching and Learning (ZLL)**

Organigram of ZLL and its Core Tasks

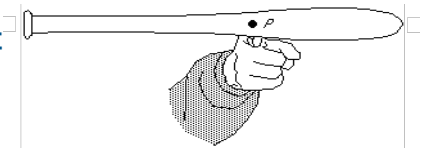


Agenda

3. Peer Instruction & Think – Pair – Share

MC II – Baseball Bat

A student balances a baseball bat of uniform mass density.
Point P is directly above the point where the bat is balanced, that is P is the center of mass.



If the bat were cut through P perpendicular to its long axis,
the mass of the left piece would be …

A. … less than the mass of the right piece.

B. … more than the mass of the right piece.

C. … equal to the mass of the right piece.

D. I'm not sure which answer is correct.

* L. Ortiz, P. Heron u. P. Shaffer, Am. J. Phys. 73, 545 (2005).

Think – Pair – Share: Method

1. Everyone works and thinks on the problem individually first!

2. Everyone finds a partner and shares their ideas and thoughts with him/her. Important: Identify similarities and differences!

3. The approaches and solutions from part 2 are presented to, and discussed with another group.

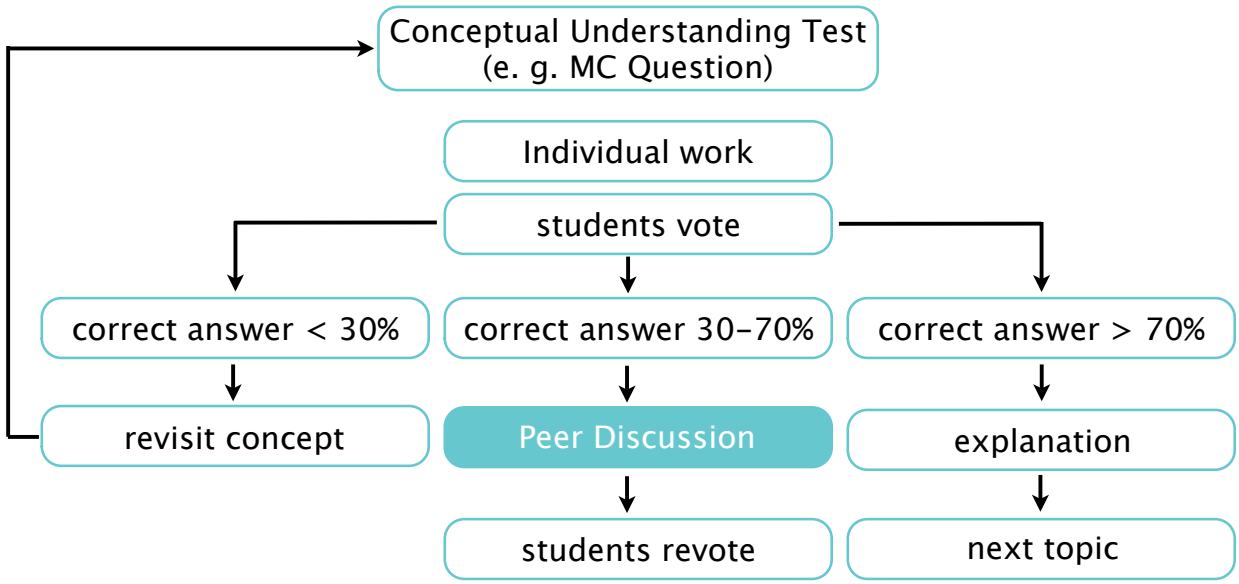
Think – Pair – Share: Assignment

Please compare the first vote (your expectation) with the Peer Instruction-Demonstration (baseball bat).

- What did you notice?
- In how far do the two approaches differ from one another ?
- What advantages and disadvantages do you see in the two approaches?

Please take notes on the group results!

Peer Instruction Implementation Process



* Lasry, N., Mazur, E., Watkins, J. (2008). Peer instruction: From Harvard to the two-year college. In: American Journal of Physics 2008, Band 76, S. 1066-1069.

Open topics

- Design of Clicker Questions
- JITT – Just in Time Teaching (Concept of wrapping)
- Constructive Alignment

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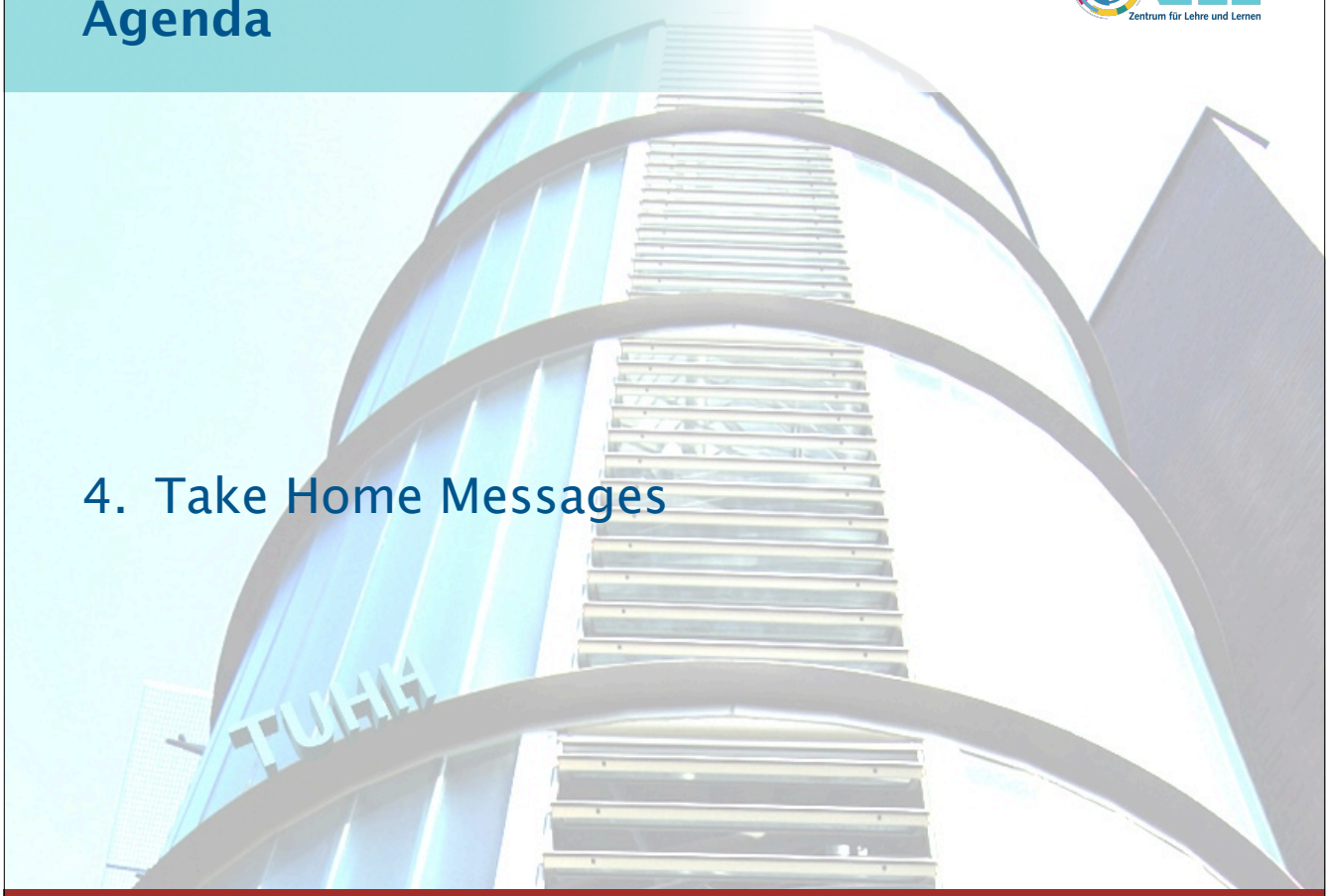

4. Take Home Messages

Take Home Message I

Similiarities of activating methods

- ✓ Learners actively (cognitively) occupy themselves with the contents
- ✓ Large proportion of „real learning time“/ Time on Task
- ✓ Opportunities for exchange and discussion (Interaction)
- ✓ Teachers and students recieve feedback on students’ current level of knowledge

Take Home Message II

Success factors of activating methods

- ✓ Clarity concerning the goals of implementing the method
- ✓ Transparency: WHY am I using this method!
- ✓ Alignment of intended learning outcomes, teaching and assessment methods (Biggs, 2003)
- ✓ Didactic embedding of the methods
- ✓ Attitude of the teachers
- ✓ Active role of the students