Teachers as Designers of Technology-Enhanced Learning (TaD of TEL)

Yael Kali
Susan McKenney
Ornit Sagy
Joke Voogt

Alain Breuleux, Rebecca Cober, Bat-Sheva Eylon, Dan Hickey, Rebecca Itow, Karen Konings, Therese Laferriere, Marcia Linn, Lina Markauskaite, Camillia Matuk, Richard Reeve, Jim Slotta, Hyo-Jeong So, Vanessa Svihla, Esther Tan
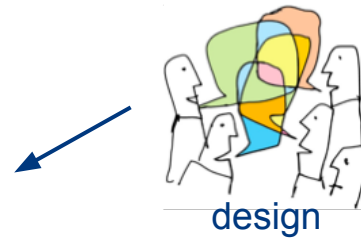
Poster session overview

- Rationale and background   (15 min)
- Poster introductions   (15 min)
- Concurrent poster interactions   (30 min)
- Discussant reflections   (15 min)
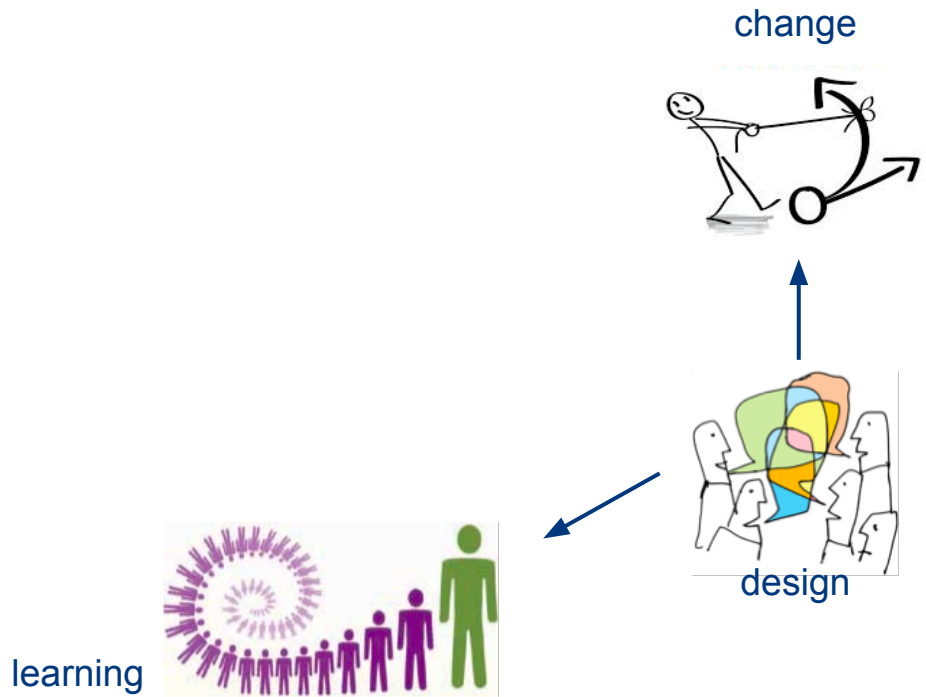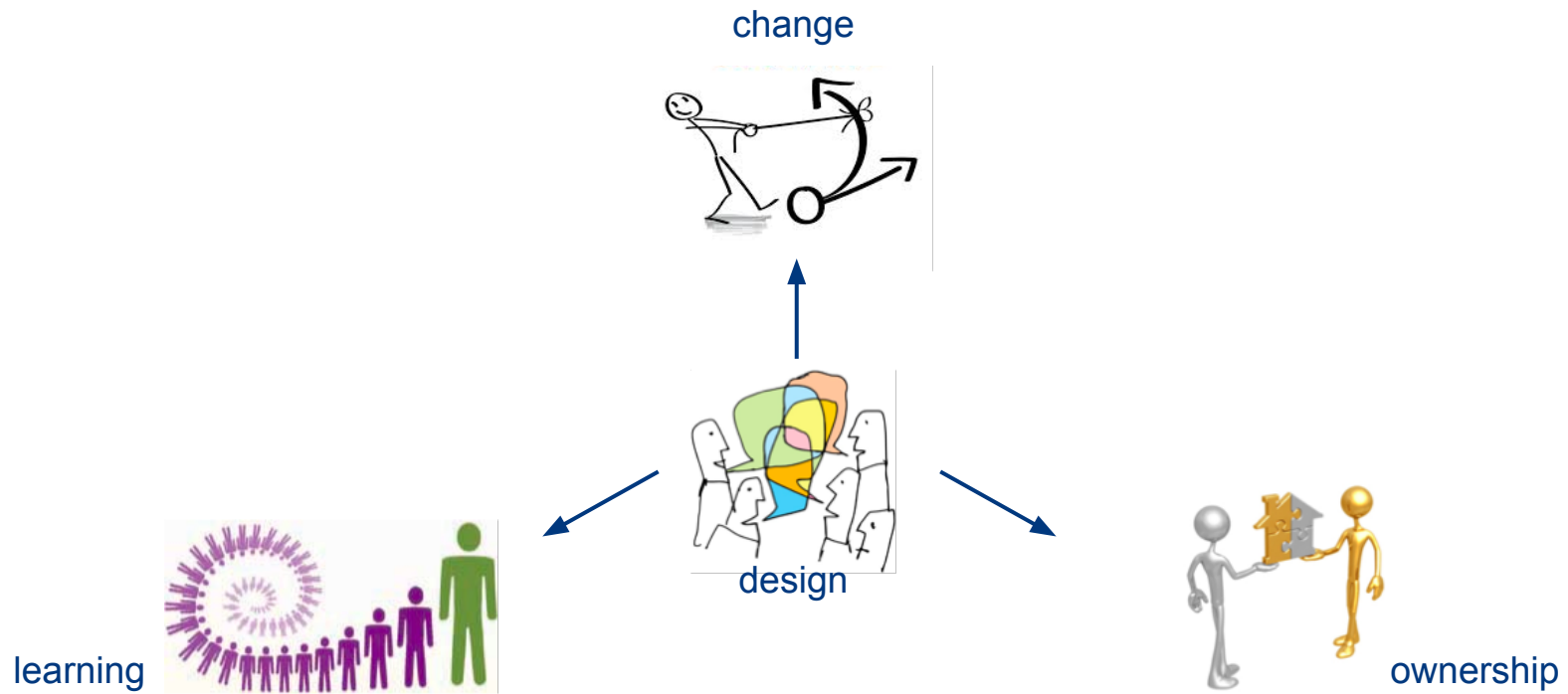- Plenary discussion   (15 min)

Rationale for this session

design

Rationale for this session

design

learning

Rationale for this session

change

design

learning

Rationale for this session

change

design

learning

ownership

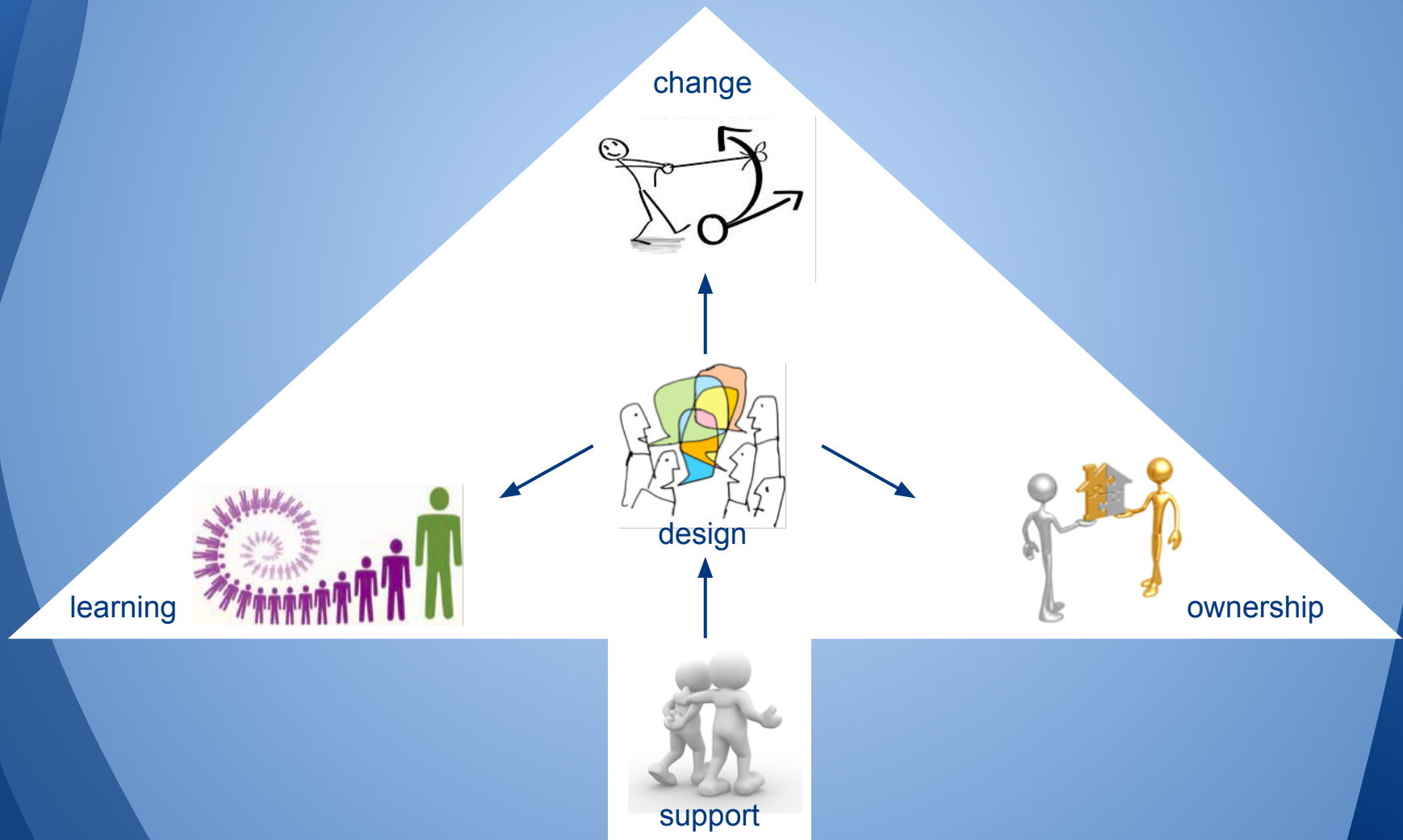# Rationale for this session

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change

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ownership

support

The road to today's session

- ICLS 2012: Workshop
  - Papers submitted as discussion seeds
  - Working groups formed on related topics
  - Convergence and divergence explored
- Between ICLS 2012 and ICLS 2014
  - Writing teams formed (from working groups)
  - Thematic papers developed (synthesis)
  - Online and offline collaboration (international)
  - Internal peer review process
  - Papers currently under review for special issue of *Instructional Science*

Posters: A thematic overview
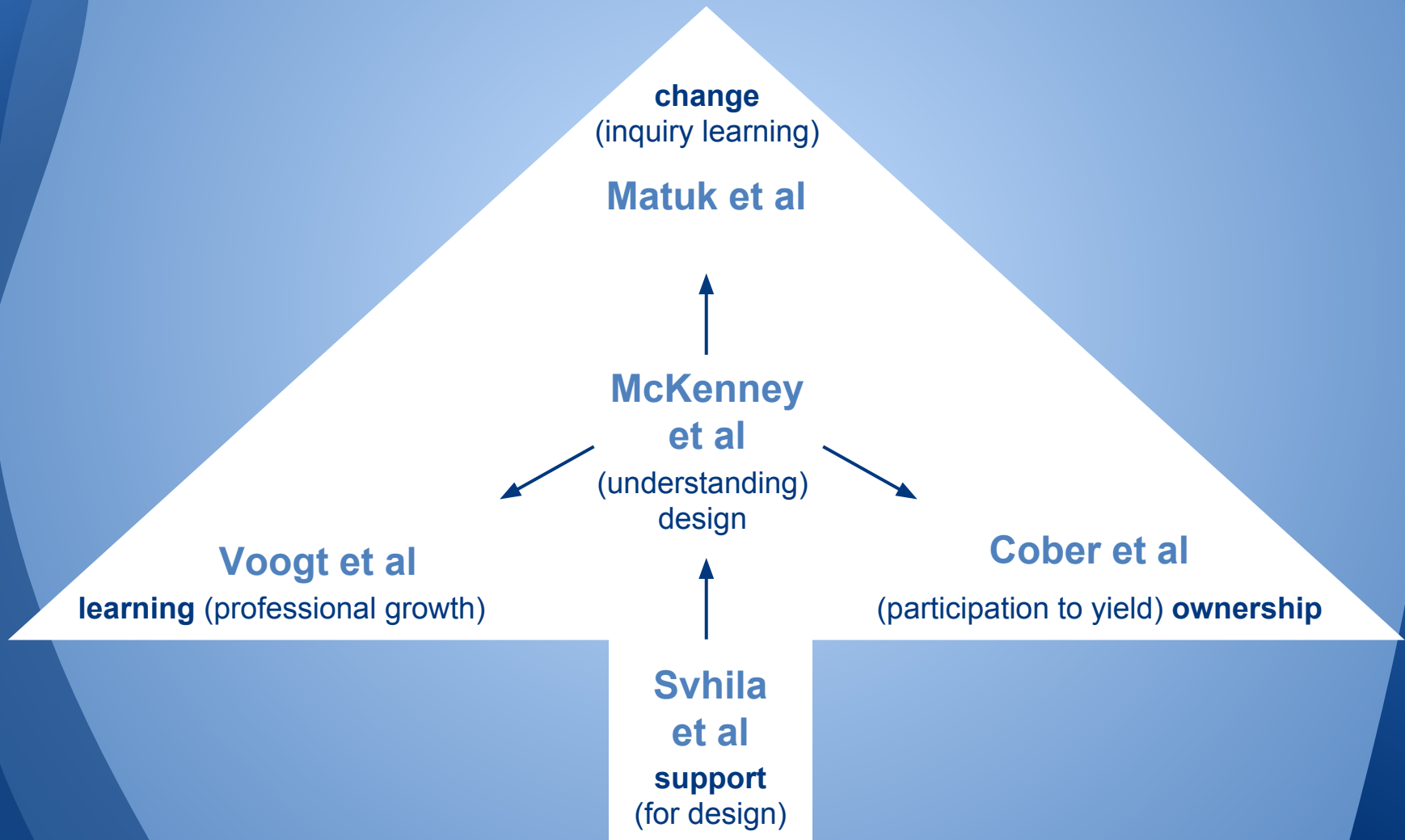
Posters: Brief introductions

- Collaborative Design as a Form of Professional Development
  - *Joke Voogt, Therese Laferrière, Rebecca Itow, Alain Breuleux, Dan Hickey, Susan McKenney*

- Technology to Support Teachers using Evidence from Student Work to Customize Technology-Enhanced Inquiry Units
  - *Camillia Matuk, Marcia C. Linn, Bat-Sheva Eylon*

- Teachers as Participatory Designers: Two Case Studies with Technology-Enhanced Learning Environments
  - *Rebecca Cober, Jim Slotta, Esther Tan, Hyo-Jeong So, Karen Konings*

- Designing for Teachers' Designing of Technology-Enhanced Learning
  - *Vanessa Svihla; Richard Reeve; Ornit Sagy, Yael Kali*

- Teacher Design Knowledge for Technology Enhanced Learning: A framework for investigating assets and needs
  - *Susan McKenney, Yael Kali, Lina Markauskaite, Joke Voogt*

Beyond today…

- Additional information online: https://sites.google.com/site/teachersasteldesigners/
- Special Issue *Instructional Science*
- Additional perspectives welcome
  - For special issue paper refinement
  - Establishing new collaborations
  - Questions for further research
  - …
- Share ideas in plenary discussion following discussant reflections

Discussant reflections

Joke Voogt

University of Amsterdam & Windesheim University

Overview

- Why important
- Similarity & diversity
- What have we learned
- Further research

Why important

Research evidence suggests that involvement of teachers in the design of curricula results in

- Effective professional development
- Sustainable innovations

Policy developments towards more decentralized curricula (e.g. Dinham, 2005) require teachers to be more involved in curriculum design

Example Netherlands
- Schools and teachers need to be put in the position to realize curriculum innovations to warrant up-to-date education (*Advisory Report Educational Council in NL, 2014*)
- The action plan 'Teacher 2020' acknowledges the need for teachers' to develop 'design skills' (*Leraar2020, 2011*)

Similarities

- Aim for teachers' participation in design
  - To contribute to improve practice and/ or to their own learning
- Focus: Teachers (not on: e.g. students, designed artefacts)
  - Teachers' expertise contributing to design (Cober et al.)
  - Teacher design expertise (Mckenney et al.)
  - Teacher learning from design (Voogt et al., Shvila et al.)
  - Support for the design process
    - Technological tools (Matuk et al.,)
    - Guidelines for support (Shvila et al.)
- Small scale case studies

Diversity -1

- Author teams from different cultural settings!
- Countries involved: USA, Canada, Israel, Tanzania, Ethiopia, Ghana, Singapore

- Provides a very rich set of studies – contributing to the ecological validity of findings across settings

Diversity -2

- **Teachers**
  - as individual designers (Matuk et al.),
  - as collaborative designers (Voogt et al., Shvila et al.),
  - as co-designers in multidisciplinary teams (Cober et al.)
- **Design**
  - as a resource/product for enactment (Shvila et al.; Cober et al., Voogt et al.)
  - as an activity during enactment (e.g. Matuk et al., see also Brown, 2009)
- **Enactment**: part (or not?) of the design process
- **Technology**
  - As a tool to support the design process (Matuk et al., Shvila et al.)
  - As the artefact resulting from the design process (Voogt et al., Cober et al.)
  - As a tool for scaling the intervention (= design process) (Voogt et al.)

What did we learn

- Organization of the design process
- Teacher agency in design
- Noticing how students are involved in the created the environments
- Aspects of teacher design expertise and how to foster it
- Change in beliefs about pedagogy, understanding of practice, and identity as designers (self-perception)

Further research

- Effects on
  - student learning
  - teacher learning (observable/transferable)
  - sustainability of innovations on the long run
- The role of technology
- Interaction with / impact on the context
  - school management
- Affordable approach
  - dependent on researchers?
  - cost –benefits