



Workshop – Engineering Education Research

Kristina Edström
kristina@kth.se

CDIO European Regional Meeting
Delft, January 25, 2016

Why this workshop?

- CDIO is an endeavour of **Engineering Education Development**
- We have always published, but as a by-product
- In the 12th Annual CDIO Conference, Turku 2016, we start a track for **Engineering Education Research** contributions
- 60 abstracts were submitted, and 40 were invited to produce a full paper

Introductions (30-60 seconds)

- Name and institution
- Your interest in Engineering Education Research

What is quality in EER?



- What is the purpose of doing EER, what do we want to achieve with it?
- What is quality – what characterises good/bad work – in the light of our purpose?

“Quality in EER”

- Form groups of 3 and write notes on a poster sheet
- We reconvene at 12.30
- Randomly selected people will make quick reports
- We collect your posters

Reports from group discussions I

- purpose: update developments, improve curricula, the right learning environment – interplay with needs of society. Thus Q = be better than yesterday, learn from best practice & mistakes, need global community for sharing and using knowledge.
- Purpose: general goal to understand how EE works, in order to improve it, especially with focus on teachers and policy makers. Q: relevant topics, asking the right questions, the necessary ones. Using different methods.
- Quality of evidence, when you want to improve you must have evidence, generalizability across settings. Not just observations of results, but explain the cause of change, why it happened. Explain the chain of reasoning. Analyse differences in context. Keyword: EXPLAIN. Research questions, methods, analysis are standard research criteria. Credibility: what makes us believe in research.
- Forming a research area & improving/changing EE. Put knowledge into action and understand the action, the change process. Research has to have an application and be relevant outside the researchers themselves.

Reports from group discussions II

- Applied research (link to what we do in the classrooms) vs research applicability (also outside classrooms). Not just increasing the knowledge base. Engineers have a particular relation to models, can we bring that strength? Focus should be on what works, why, and how can we do it better?
- Still, fundamental understanding is needed.

Criteria for the 2016 review

Overall relevance	<ul style="list-style-type: none">▪ Is the topic relevant, significant, interesting and timely for the engineering education community, and in particular for the CDIO Initiative?
Literature	<ul style="list-style-type: none">▪ Is the paper informed by relevant theory and other literature?▪ Is it put into good use here?
Aim or problem	<ul style="list-style-type: none">▪ Is it clear what the paper is trying to achieve, what problem it addresses?▪ Does this have significant implications for the audience?
Research approach	<ul style="list-style-type: none">▪ Does the paper adequately explain how the problem is approached and how the argument is built?▪ Are limitations critically discussed?
Conclusions	<ul style="list-style-type: none">▪ Do conclusions address the stated problem or aim?▪ Are the claims credibly supported?▪ Does the paper deliver a take-away message for the community?
Coherence and clarity	<ul style="list-style-type: none">▪ Is the paper clearly and logically structured?▪ Do the parts contribute to the whole?▪ Can the reasoning be followed through the paper?▪ Is the paper readable and language appropriate for the audience?

Reviewers wanted

- Contact Janne Roslöf, janne.roslof@turkuamk.fi
- He is here!