

4th International CDIO Conference
ACTIVE ENGINEERING EDUCATION

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University College Ghent
Ghent, Belgium.

Title: Successful Integration of Key Competences in Curriculums Training
Collegiate Tutors

Authors and Affiliations

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Other Authors

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Type of Presentation: (check one)

<input checked="" type="checkbox"/> 1_ active paper (15-30 min)	<input type="checkbox"/> round-table session (60 min)
<input type="checkbox"/> poster session (60 min)	<input type="checkbox"/> advanced workshop (90 min)
<input type="checkbox"/> advanced workshop (45 min)	

Short Description

Experiences with an "IPEK - Train the Trainer" program for collegiate tutors and its influence on an active learning in engineering education and the development of key-qualifications

Relevance to the Conference Theme, Strands, and/or CDIO Initiative

Please indicate (tick) the strand that the presentation most closely relates to.

<input type="checkbox"/> Application of CDIO to a wide range of disciplines	<input type="checkbox"/> Curriculum and programme design
<input type="checkbox"/> The involvement of industry	<input type="checkbox"/> Technology-enhanced learning
<input type="checkbox"/> Development of professional	<input type="checkbox"/> Assessment of professional

competences
Design-implement experiences

Supporting sciences and CDIO

X Student involvement

competences
X Facilitating change in engineering education
Evaluating the impact of CDIO Programs
Active and experiential learning

Abstract (maximum one A4 sheet)

Industrial employers increasingly expect engineering students to graduate from university not only having professional skills but also having key competences obtaining personal, social and methodological competencies. Typically, these expected competencies deal with teamwork, team interaction, leadership or methods for problem solving, creativity or project management.

In order to transfer these industrial demands into learning objectives, the Institute of Product Development (IPEK) developed the Karlsruhe Education Model for Product Development. This model comprises three courses on different level focusing on machine elements on basic level, on machine design (methodology) on intermediate level and finally on integrated product development (processes and management) on highest level.

The machine design course is placed in the earliest phases of the curricula and is therefore a good chance and a challenge to develop key competences in all students of mechanical engineering – currently about nearly 800 Students. The course is divided into three parts comprising lectures, tutorials and workshops. Developing and training key-competences in the sense of a special coaching happens in the workshops where students form teams of five members in order to fulfil a small, but complex design task with project character. Nearly 80 collegiate tutors are supporting experienced scientists of the institute in the coaching process. According to a “Train the Trainer” – model the tutors are trained on three tailored weekend courses, containing for example how learning happens, methods to design tutorials, group-processes, conflict solving and the assessment of students. The in parallel running current tutorials and workshops are used as test benches accompanied by supervisions. Training and Supervision is guided by a pedagogic Institute belonging to the university. The proposal describes the “IPEK - Train the Trainer” program for collegiate tutors and how this is influencing an active learning in engineering education and the development of key-qualifications

Active presentation techniques

Describe one or two ways in which you intend to engage the audience (for example, paired discussion, personal response using clickers or flash cards ...). This section is a decisive factor in the acceptance of your proposal and the amount of time you will be allocated.

multimedia based power point presentation with open discussion

Facilities/equipment required (tick all those appropriate)

Computer projector (provided in all locations)

Overhead projector

Flip charts and pens

Clickers (personal response system)

Coloured flash cards

Post-it notes

Other (please describe)