

Författare: Marco Bertoni

Medförfattare:

Typ av session: Presentation, 30 min

Lärosäte: BTH

## **Learning outside the classroom: a student perspective in innovation projects**

Constructivism theories acknowledge that class-bound situations often leave students without full learning of a subject. They stress the need to activate students in their learning process, giving them the opportunity to take responsibility, make decisions and deal with reality. Literature also acknowledges that up to 80% of learning takes place outside the classroom. Hence, fostering 'experiential learning' in real-life situations becomes a critical task for engineering educators when creating constructively aligned learning activities. This paper follows three iterations of the MT2554 Value Innovation course at BTH to shed light on what students consider being the main lessons learned from a team-based innovation project conducted 'outside' the classroom (and in collaboration with a company partner). The lessons were gathered from the last individual assignment at the end of the course. These were later analyzed with regards to the 'goals' for engineering education featured in the CDIO Syllabus 2.0, mapping each lesson to a maximum of 3 goals at level 3 (rendering about 800 data points from 109 participants). The analysis at the second level of the CDIO Syllabus reveals that about 80% of the students believe to have acquired lessons learned related to the COMMUNICATION and ATTITUDE, THOUGHT AND LEARNING goals, while two thirds of the sample describe lessons related to the DESIGNING and TEAMWORK goals. UNDERSTANDING NEEDS AND SETTING GOALS (about 60%) is the most frequently mentioned lessons learned at third level, followed by TEAM OPERATION, DISCIPLINARY DESIGN and THE DESIGN PROCESS (about 45%). Additionally, about half of the students recognize aspects related to the COMMUNICATION STRATEGY goal as a main lesson from the project work. The results of this investigations provide a base for the future development of innovation projects with undergraduate students, supporting the definition of relevant learning outcomes and constructively aligned learning experiences at Advanced level.