



IIC strive to manifest a change in mindset of future engineers – Creating Innovativeness

PIEp IIC – Individual Innovation Capability

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Partners: KTH (IBS, UID), Komatsu Forest, Bnear IT, Exait, LIKO, Borö

Why

The importance of innovative individuals capable of creative thinking is considered fundamental to innovation. The field of innovation has yet not been able to thoroughly explain how individuals' innovative capability can be fostered and improved. In different disciplines elements of innovation such as creativity has been dealt but without a clear link to engineering design and engineering design education. Thus, this research project has a strong education emphasis as it investigates possibilities to better understand and ultimately improve engineering students' capability to innovate.

What

Based on the purpose of exploring innovation capability of individuals, the project aims to enhance the prerequisites for the learning of engineering students. New knowledge is looked for regarding the prerequisites of clustering relevant aspects such as creativity, motivation, personal skills/abilities, business opportunities and market awareness.

How

Action research in combination of both qualitative and quantitative approaches including observations, interviews and surveys are used to address individual innovative capability amongst engineering students. The research is conducted in cooperation with partners in academy (i.e. hot team/cross-disciplinary innovation and entrepreneurship researchers) and industry (i.e. IT, MedTech and Manufacturing).

Deliverables

Overall, the research project addresses the basic principles in academia; improvement of learning methods and course design. The project has an important role in better identify and understand engineers' skill sets, as those are key indicators to students' graduated market attractiveness. The project aim to have implications on engineering design didactics and course designs. Current research will be summarized in a doctoral thesis on Individual Innovation Capability that will include a range of published conference and journal submitted publications. Currently several of publications are in process of being written and reworked into journal publications.



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Publications

- Berglund, A., Understanding Innovativeness by Encapsulating Creativity in Higher Engineering Education, EPDE 2009, Brighton.
- Berglund, A. & Ritzén, S., Towards Individual Innovation Capability - The Assessment of Idea Generating Methods and Creativity in a Capstone Design Course, ASME 2009, San Diego.
- Berglund, A., Sturm, D. & Parida, V., Embracing Entrepreneurial Behaviour in a Research School, ICED 2009, Stanford, San Francisco.
- Parida, V., Berglund, A., Sturm, D. & Grimheden, M., Facilitating the Learning Environment: Initiatives within the PIEp Research School, CDIO 2009, Singapore Polytech.
- Berglund, A. (2008) The Experiences of an Engineering Design Education Project - The Case of Prototyping the Next Generation Dishwasher Door, ICICKM 08', NYIT, New York.

Related publications

- Grimheden, M. & Berglund, A., Creating a Better World by Collaboration in Product Innovation Engineering - The PIEp Way, EPDE 2009, Brighton.

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