

# Skills for Creativity and Innovation

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## Enabling Students to Contribute to Creativity and Innovation

### Creative Teamwork

Creativity in product innovation relies on the expertise, motivations and skills of many people. To bring a successful, new product to market you have to collaborate within and across the boundaries of your organisation.



Figure 1: Creative teamwork

### Basic Definitions

«... is a complex construct describing the ability of human beings to invent something new and useful or behave in a novel way»

*Skills for Creativity and Innovation*

«... are the capabilities needed to meet expectations in one's role, job or functions»

«... is about identifying and using opportunities to create new products, services or work practices»

Figure 2: Definitions

### Educational Objectives and Contents

The educational objective of this lecture "skills for creativity and innovation" is to prepare students to their future life in R&D teams:

The lecture gives the opportunity to experience and improve behavior relevant to team creativity.

It introduces the theoretical background explaining why and how this behavior influences team creativity.

and it prepares the students to transfer this experience and knowledge to their future team mates.

In order meet these objectives the lecture includes following educational sub-objectives and contents (see figure 3).

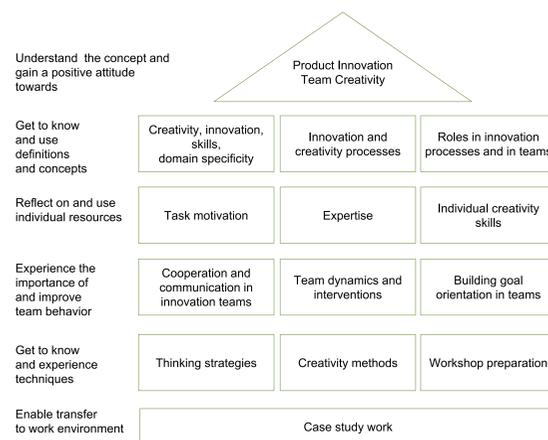
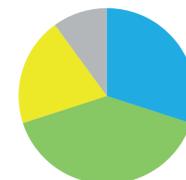


Figure 3: Educational goals and contents

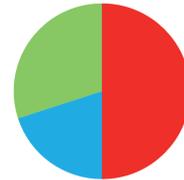
### Teaching Methods

#### Classroom work



- Input, 15 h
- Classroom exercises, 20 h
- Reflection, 10 h
- Questions, open discussions, consolidation 5 h

#### Homework



- Reading papers, 35 h
- Reading summaries/handouts, 14 h
- Homework exercises/ self study questions/ examination, 21 h

Figure 4: Teaching methods distribution on hours

### Experience and Reflection

	No, not the case at all	Seldom	Partly	Often	Yes, this is a strength
01 I concisely and clearly lay out the core of the problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02 I describe solutions to the problem and adequately define the to-be state.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03 I display an unusual way of thinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04 I challenge obsolete or self-evident practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05 I insist on the search past the first solution that comes up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06 I develop numerous ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07 The ideas I generate are largely diverse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08 I actively consider others' ideas and contributions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09 I openly speak my mind and state my ideas, with no restraint.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 I uninhibitedly share my ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 5: CBIT self reflection questionnaire, question 1-9/25

### Techniques

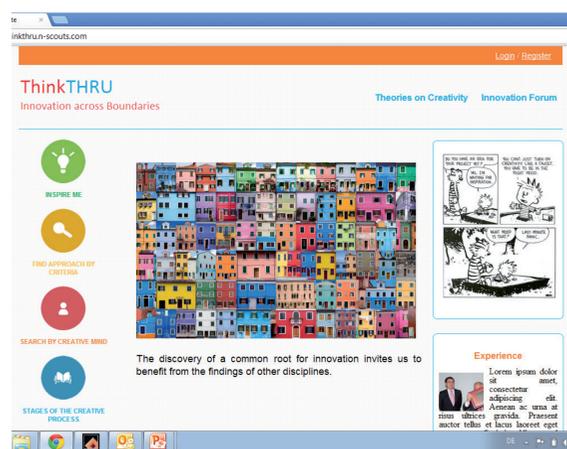


Figure 6: Screenshot of method catalogue

### Discussion Topics

We are looking forward to discuss with you about:  
Lecture content:

- What is creativity? What is a creative engineer?
- Is creativity a general ability or a domain specific ability?
- Why is team behaviour so important for product innovation?
- What do we know about creative thinking processes?
- What are the typical roles in teams and in innovation processes?
- What is a "good" team?
- Why is motivation so important for creativity?
- Do creativity methods (e.g. brainstorming) really improve creative output?

Didactic aspects:

- How to teach "soft" skills?
- Can creativity be improved by education and training?
- Experience versus knowledge
- Teamwork and feedback
- Change in behaviour as an educational goal
- Preparation of transfer
- Examination of skills and behaviour
- How to make students read and understand literature?

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