

# Aalto University

## *School of Engineering*

Viewpoints for self-development and  
pedagogical education

21.3.2017, Heikki Remes

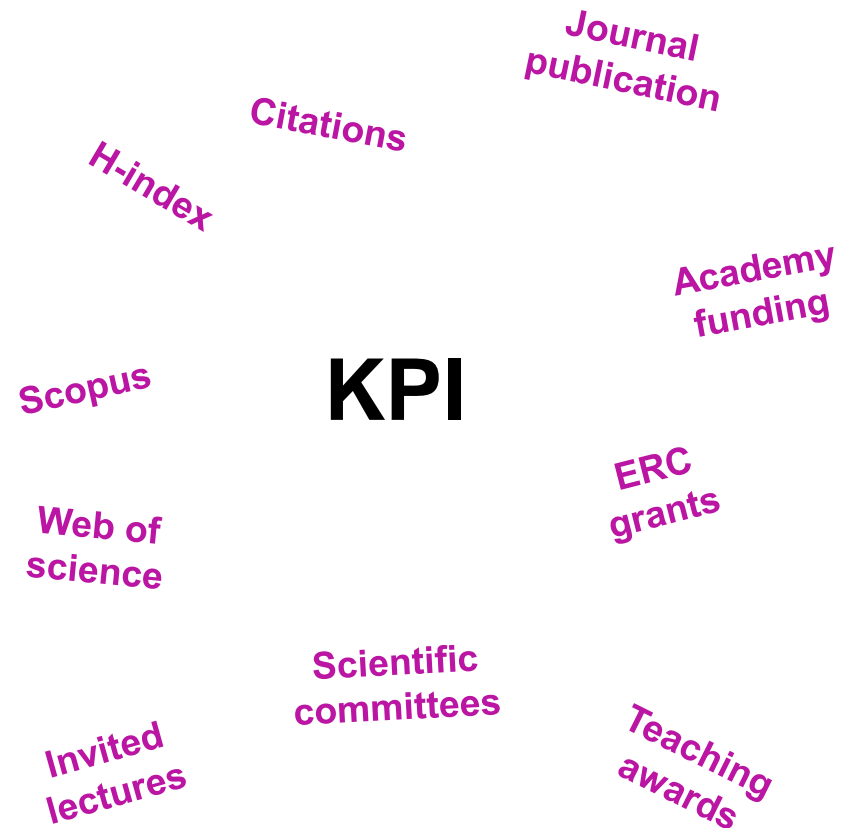




# Definition of excellence?

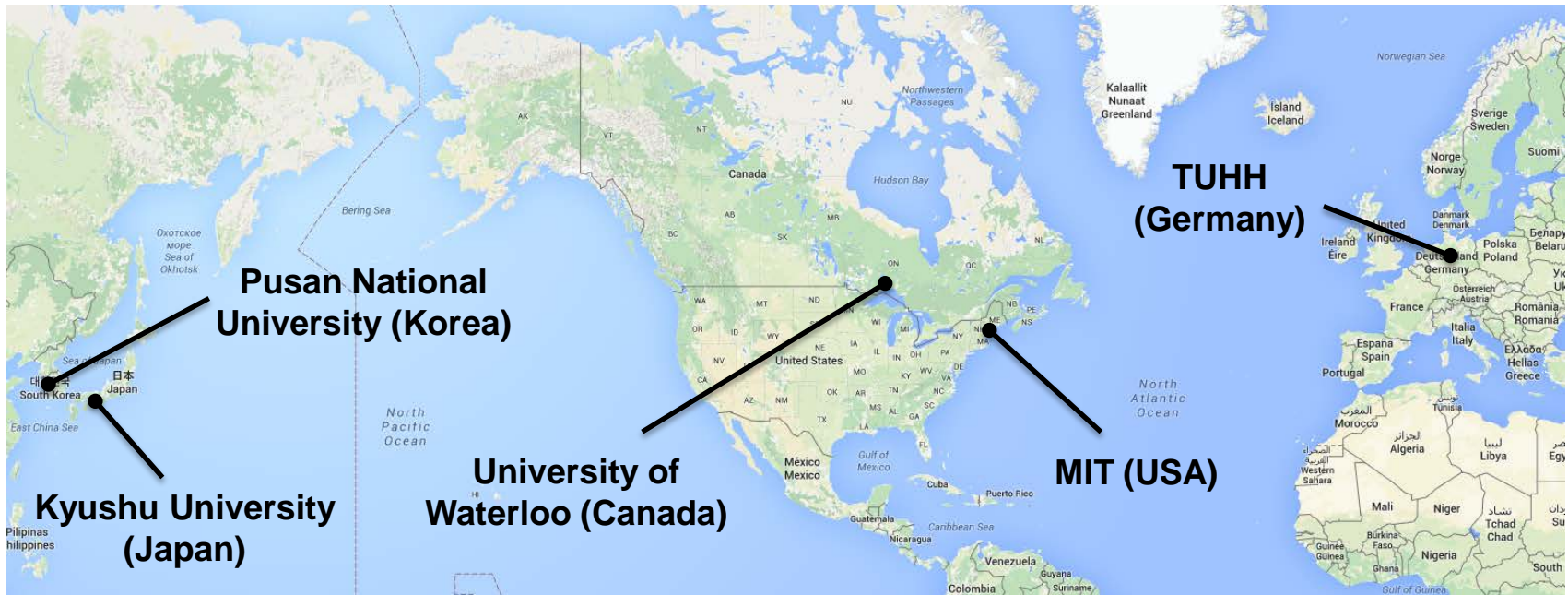
## Challenges

- Several measures
- Field-specific
- Time-dependent (junior versus senior)
- ...



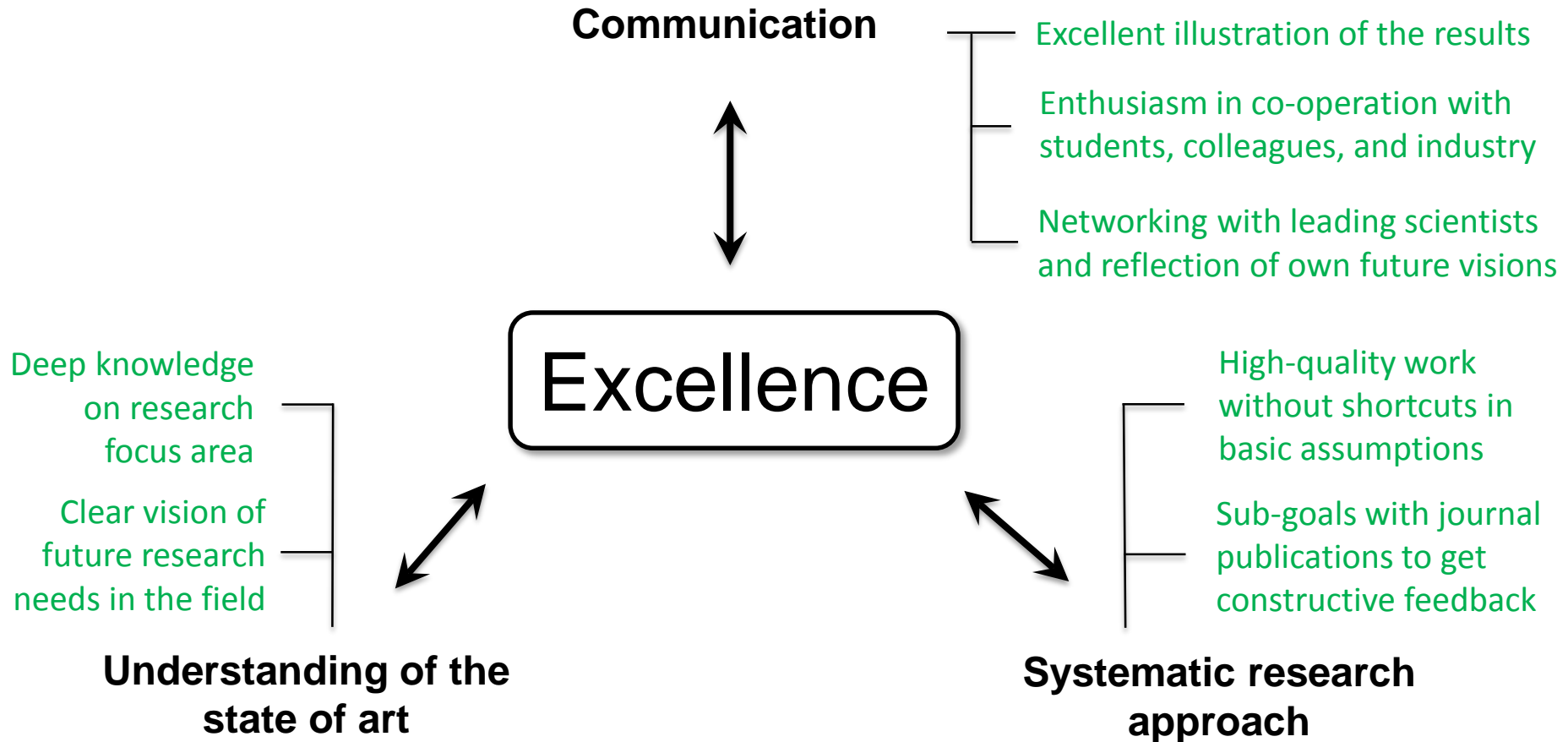
# My approach to define excellence

## Benchmarking and observations



**What are the common elements for excellence?**

# My elements for excellence

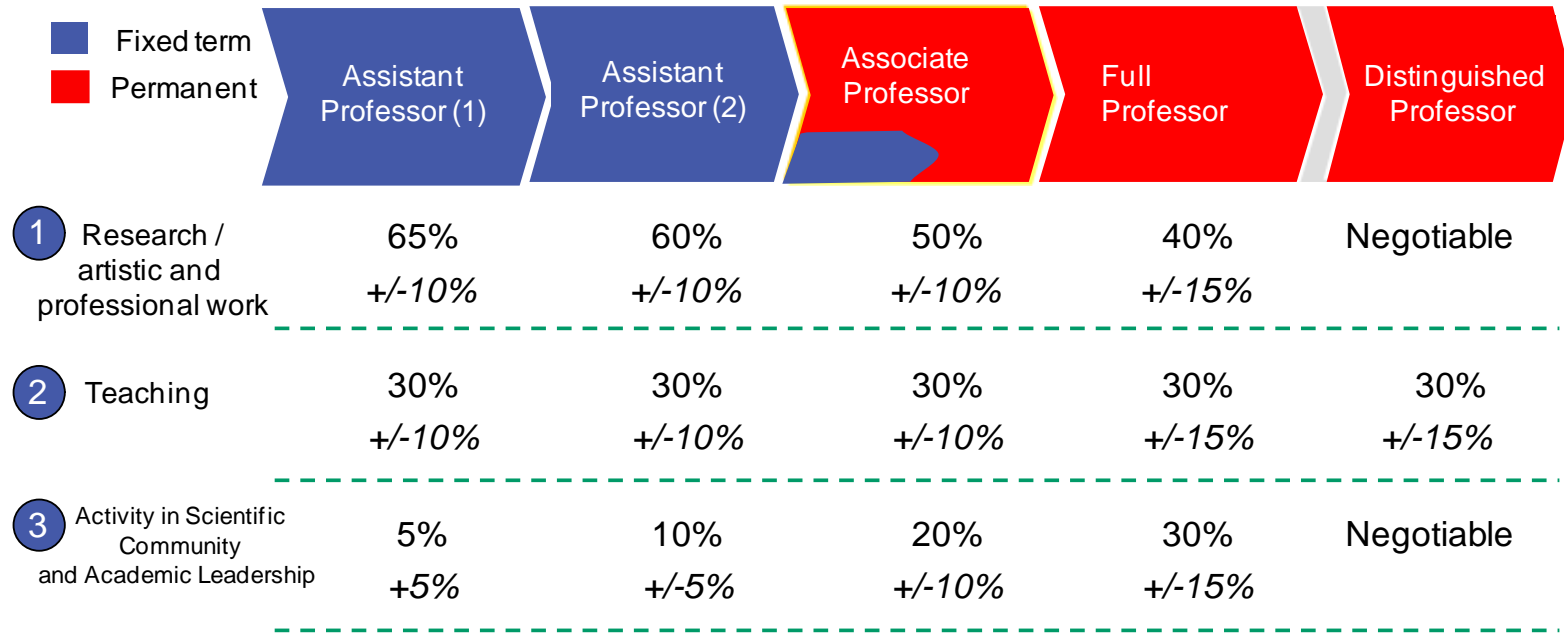


# Time and development management



My solution: Integrated activities; pedagogical education provides development environment with feedback and knowledge

# Time management



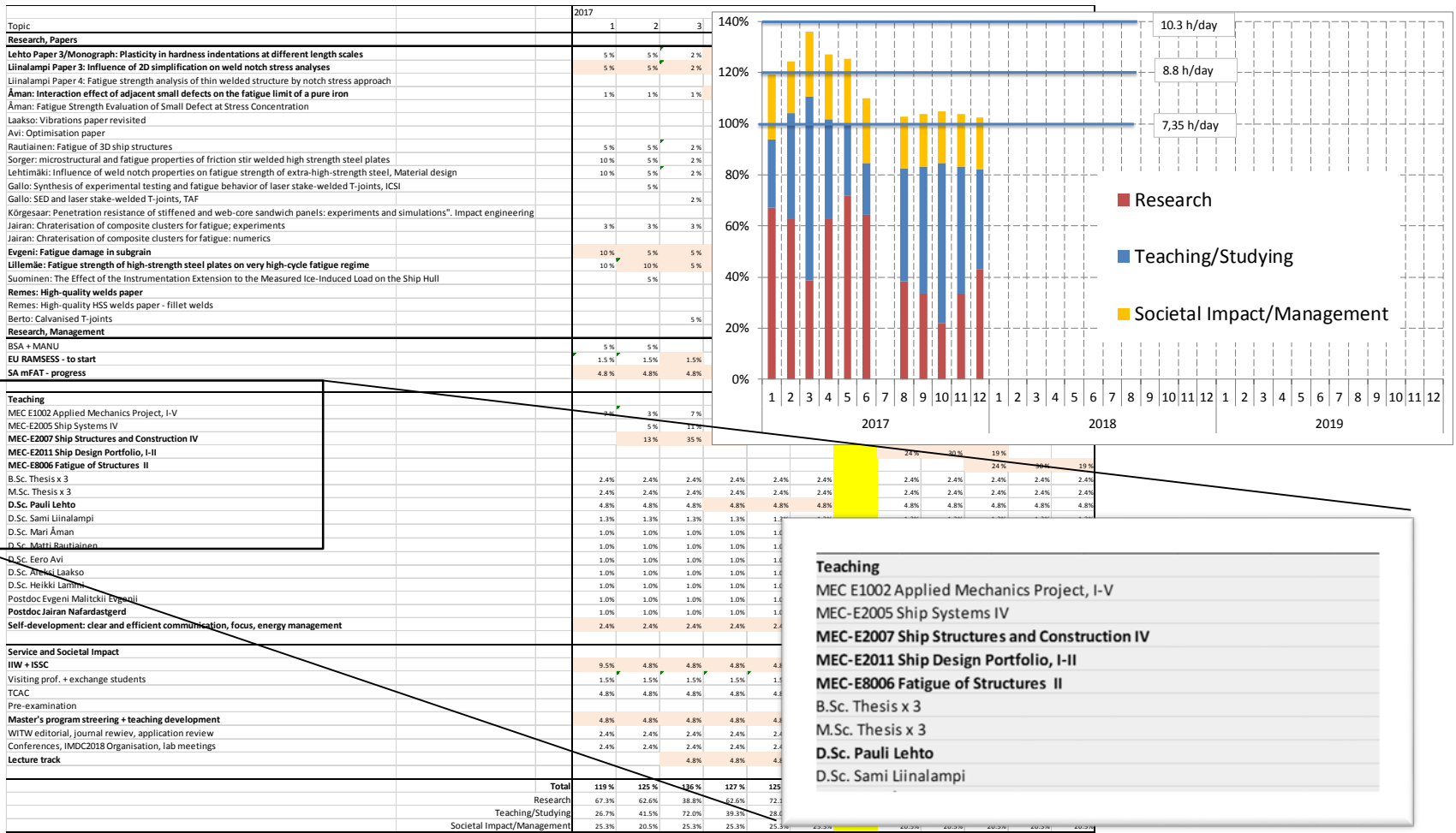
## Key principles

- Research emphasis high in the beginning to obtain research portfolio
- Teaching relatively constant to maintain required teaching scale and senior professors in touch with students
- Contribution for academic leadership and collaboration increases with seniority through increased leadership, committee membership and societal interaction
- Mandatory teaching for Distinguished Professors, otherwise work profile negotiated

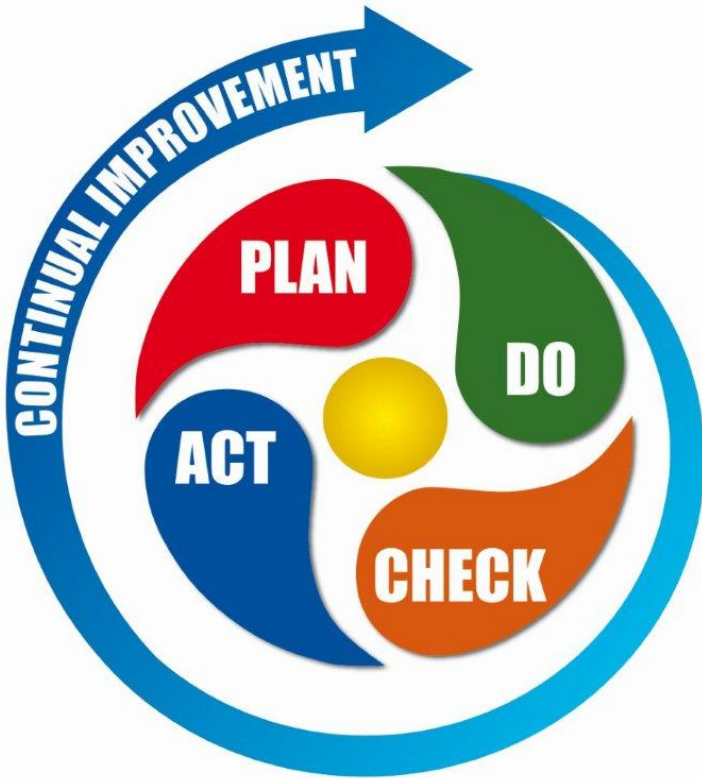


# Time management in Practice

## 240% work load => 120% work load



# Development management



My solution: Continuous development

- Pedacourse with concepts idea =>
- Implementation to practice =>
- Feedback and Reflection =>
- Modification of plan =>

# Development reflection

Teaching portfolio

7.11.2016

Remes, Heikki

Promotion from Assistant Professor Level 1 to Level 2 at Aalto University  
School of Engineering

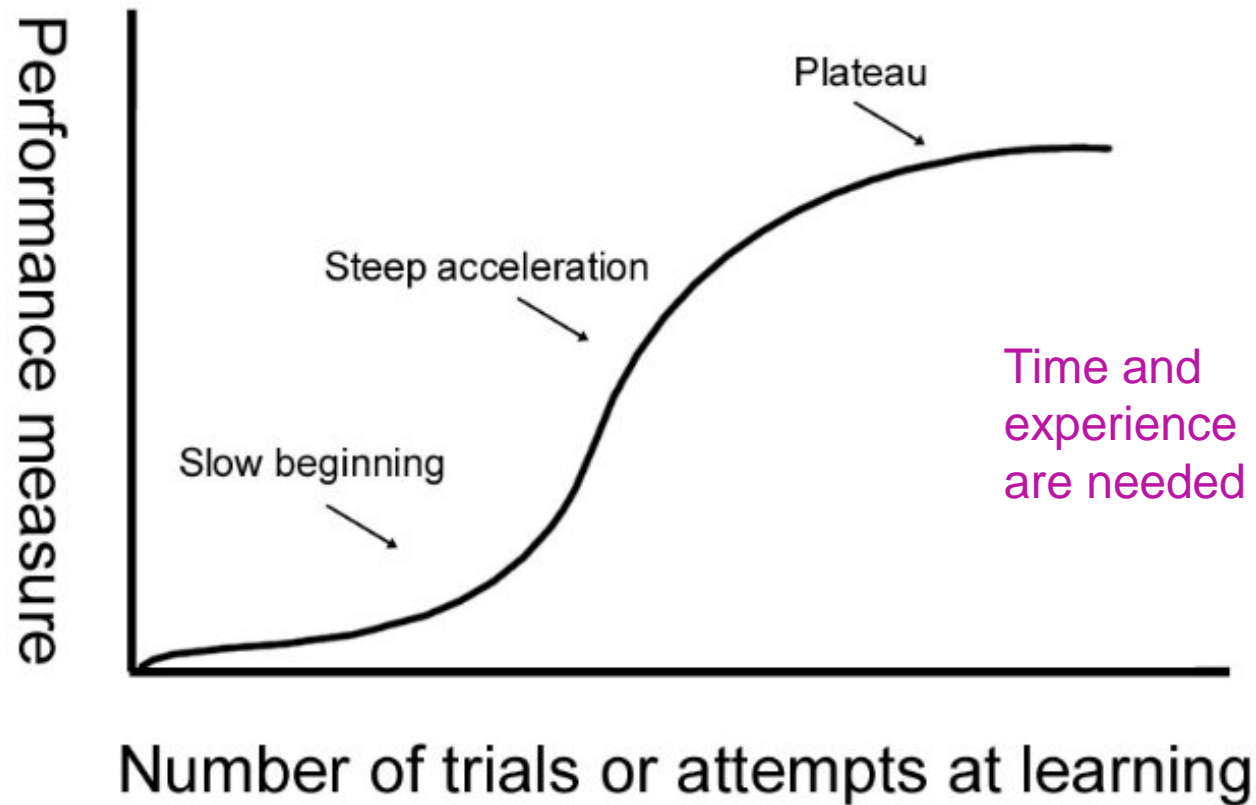
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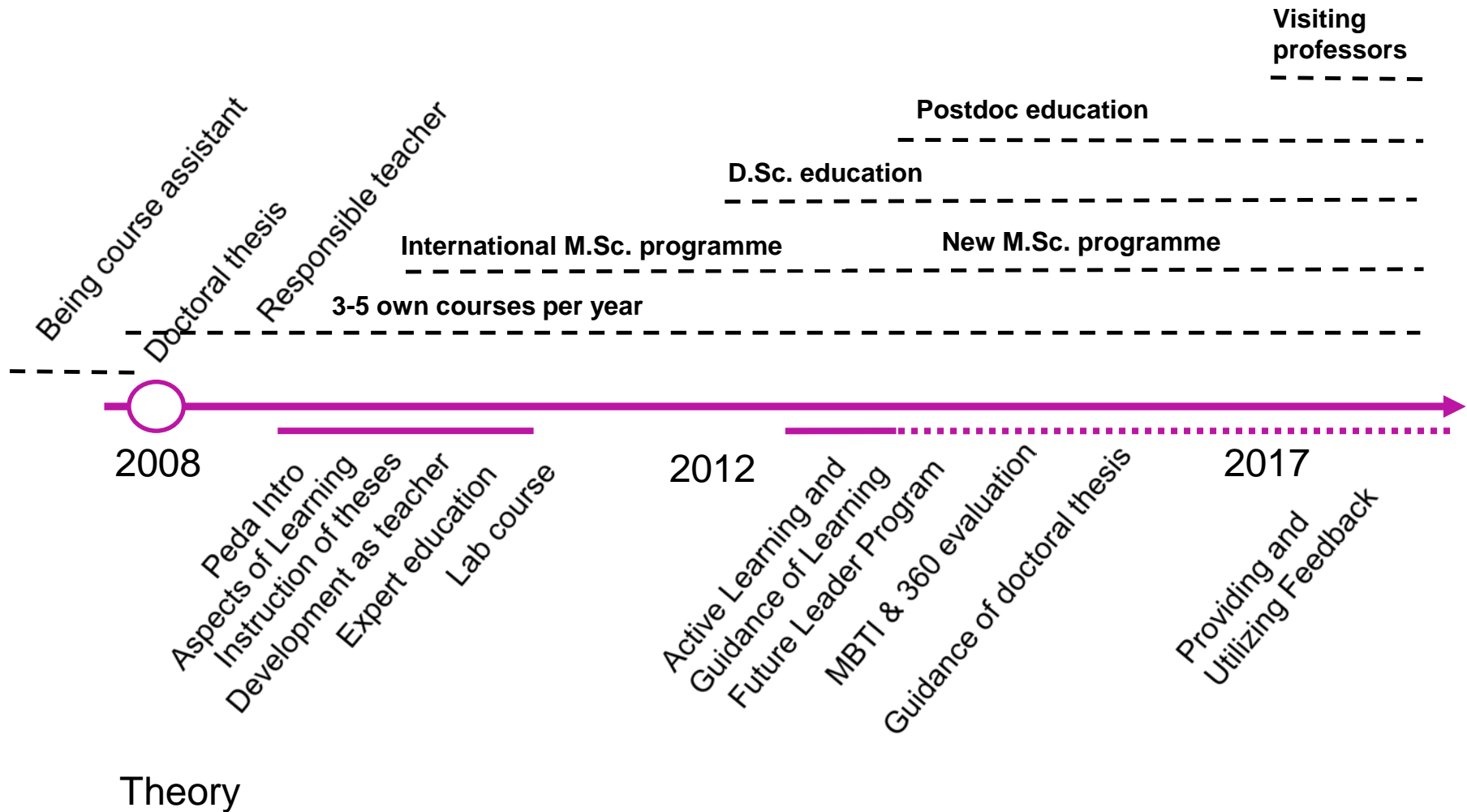
My solution: Continuous update of own teaching portfolio

- Own teaching history
- Trials and developments
- Achievements
- Self evaluation (strength and weakness)
- Future targets and goals

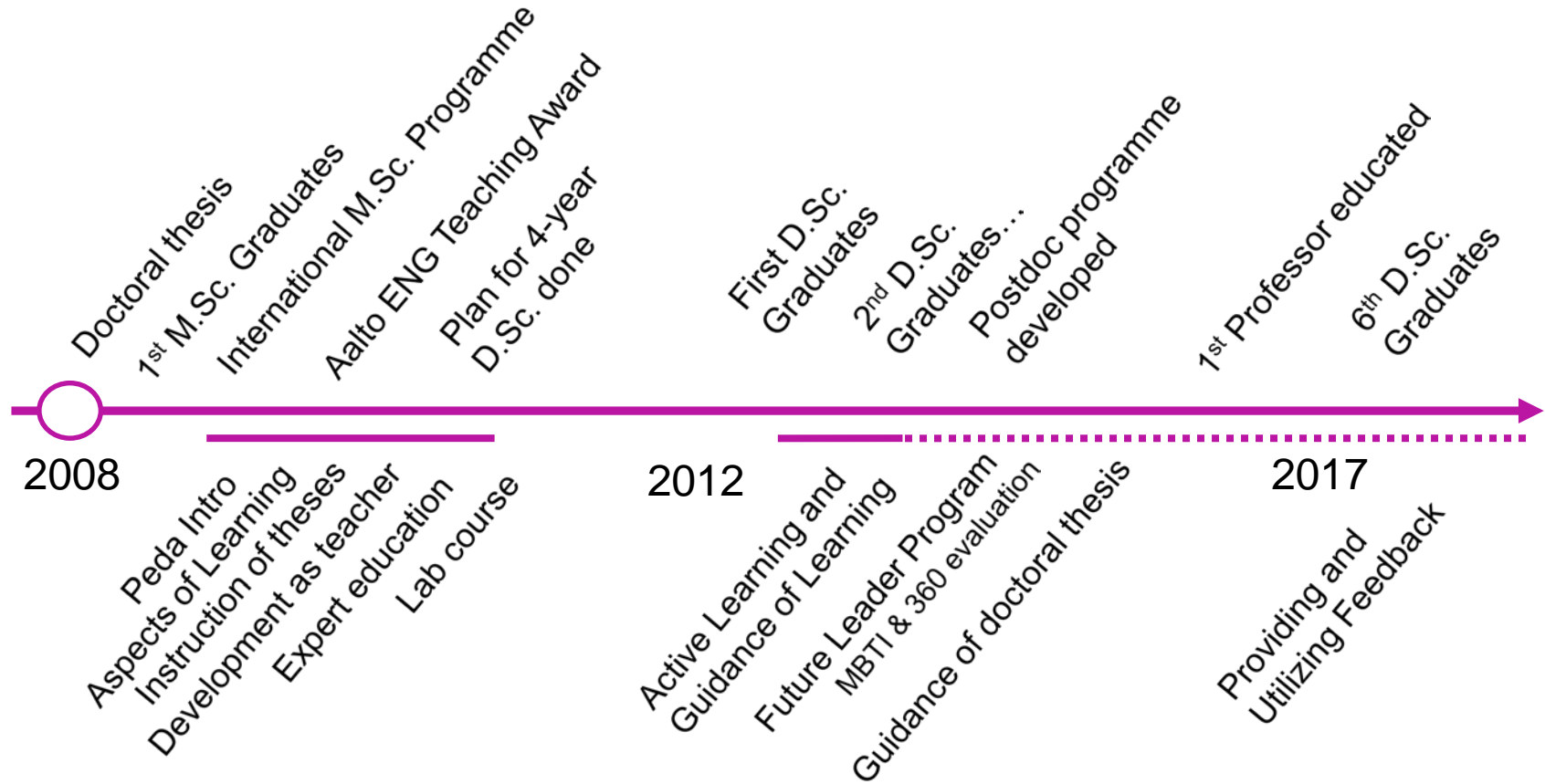
# Development reflection



# Development in practise – my case



# Development in practise – my case

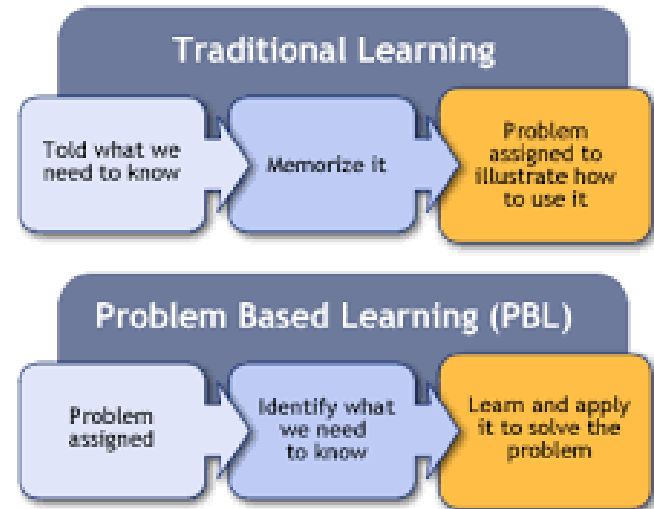


Theory

# Have own learning and develop approach

## Modified Problem-based learning

- Develop my own course
- Develop instruction skills
- Develop M.Sc. Programme
- Develop D.Sc. Programme
- Develop post-doc mentoring
- Develop career support



# Remember co-operation





# *Case example*

## *Feedback system for learning-centered Master's program*

Project work in "Providing and Utilizing Feedback" course

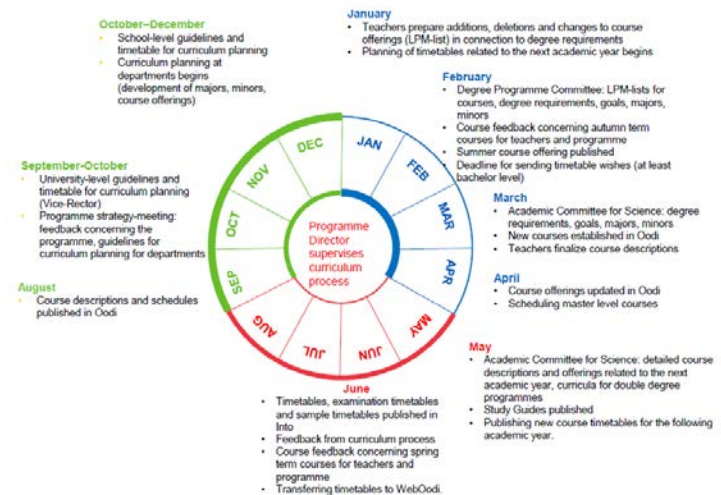
Heikki Remes and Arttu Polojärvi  
16.2.2017

# FEEDBACK SYSTEM FOR LEARNING-CENTERED MASTER'S PROGRAM

**Master's programme in mechanical engineering (2016)**  
 +  
**Learning-centered approach**  
 +  
**Integration of feedback into the program-level development**

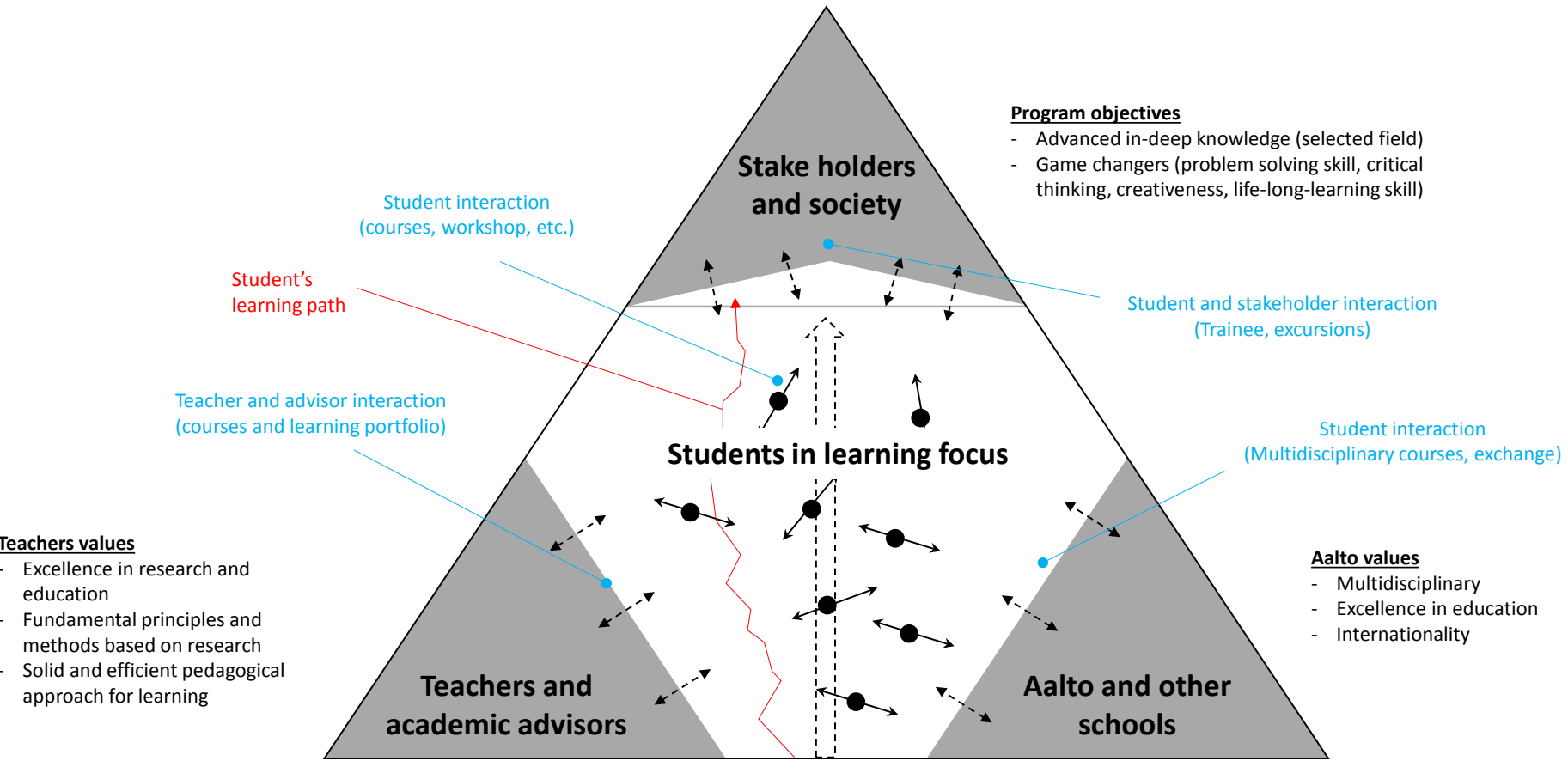


**FEEDBACK SYSTEM FOR THE PROGRAM-LEVEL DEVELOPMENT**



Annual clock for curriculum development.

# ACTORS IN A LERNING-CENTERED STUDY PROGRAM



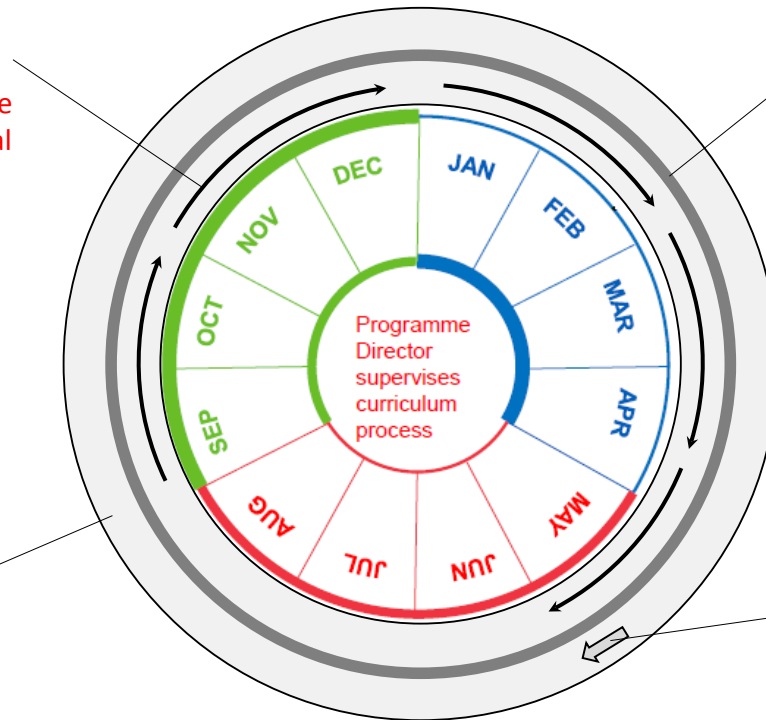
# FEEDBACK SYSTEM CONCEPT

Currently in test

## Short-term feedback

Course feedback

Updates of existing system: the relevance of course in personal study goals in program level



## Continues feedback

Learning process feedback

New dynamic feedback systems to measure success of learning in program level

## Long-term feedback

Aalto alumna feedback

Existing feedback system for students graduated from the program

## Mid-term feedback

Program feedback

New feedback questioner about learning process relevance and efficiency for both student and teachers.

# CONTINUOUS FEEDBACK SYSTEM

- A mind map of ship structures course and its' relation to your other studies



# CONTINUOUS FEEDBACK SYSTEM

- Before lecture each student provides 3-5 bullet points about the most challenging issues (student feedback for a teacher).

## **Feedback or topics that need more clarification**

### **from 2nd week's lectures:**

- Terminology related to welding and sub-block assembly
- tandem building dock
- difference between mig/mag and fcaw welding techniques
- How is aluminum superstructure combined with steel hull without corrosion problems?

### **Lecture 3 and 4**

- **What is the best industrial practice used in achieving effective continuity in the structure since the ship is made in boxes before assembling.**
- **What do you mean by 'Corrugated bulkheads are easy to clean'?**
- **How does increasing strength influences the cost of production?**
- **Why is aluminum preferred to steel in making hull girder?**

# CONTINUOUS FEEDBACK SYSTEM

**Subject:** Re: MEC-E2007 Ship Structures and Construction L - Personal work - Week1

Hei,

Sellanen homma vielä, että opiskelumotivaatio on tämän myötä kasvanut. Tullut jotenkin mielekkäämpää kun pystyy vaikuttamaan opetukseen.

Hämmästyttää kummastuttaa viikolle 3:

- Tämän viikon diat ja harjoitus saavat matematiikan osalta toivomaan pienoista kädestä pitelyä. Toivotaan että logiikka aukee luennoilla.
- Viikon big picture väännettynä rataakiskosta.
- Esimerkkejä elävästä elämästä.

Luennon 6 toisessa diassa on korostuslaatikko väärässä kohdassa.

YT

# Summary

- In order to develop world-class knowledge and skills, we need systematic personal development plan
  - Goal setting for 10-20 years with motivation
  - Development steps with cumulative learning
  - Reflective learning environment = pedagogical education and courses
  - Self-evaluation and reflection

