

## Teaching Portfolio

Niels Gorm Maly Rytter, Head of Unit  
Department of Technology and Innovation  
SDU Engineering Operations Management  
Email: ngr@iti.sdu.dk

### Pedagogical view

I recently started in the position as Head of Section at University of Southern Denmark. I am in this role expected to lead and coordinate research and teaching efforts for 10+ scientific staff involved in various bachelor and master program studies at the institution. Most of my own teaching and supervision experience is based on app. 20 years of employment at Aalborg University (AAL and CPH locations) (AAU). This experience has over the years been complemented with experience from other institutions in DK as for example CBS and SDU as well as guest lectures abroad (for example at ISM / BILD, Vilnius). In addition, I have since 2015 on a part time basis with partners delivered several training sessions to various clients and institutions around the world all operating within the global container shipping / maritime industry. Initially being a student and professional from AAU I was exposed to Problem Based Learning (PBL) as the dominant pedagogical philosophy from when I entered into the academic community. PBL is generally defined as an instructional method by which students learn and acquire skills through facilitated problem solving. With PBL, student learning centers on a complex (real world) problem that requires further investigation and does not have a single correct answer. Students work in collaborative groups to identify what they need to learn in order to analyze and solve the problem. They engage in self-directed learning (SDL), and then apply taught or self-acquired knowledge to the problem and reflect on what they learned and the effectiveness of the strategies employed. The supervisor acts to facilitate the learning process rather than to provide knowledge. Experts in university pedagogics typically claim that ultimate goals of PBL include enabling students to not only acquire domain knowledge and skills, but also develop 1) flexible knowledge, 2) effective problem-solving skills, 3) SDL skills, 4) effective collaboration skills, and 5) intrinsic motivation.

I am a strong believer in the PBL method. However decades of experience from particularly doing lectures and project supervision at AAU have taught me that there are a variety of ways to execute PBL in practice. Also, it has revealed to me how instructor knowledge / expertise made available for students, become critical if they are to do quality work and maximize learning outcomes from PBL oriented studies. PBL can preferably include alternative instruction methods. In recent years, a plethora of technologically / digitally based instruction methods including training materials have flourished which today can be deployed to complement classical class room lectures or for that matter traditional PBL methods for university teaching.

My preferred approach to teaching is to blend instruction methods, and if / when possible, apply experiential training methods (like PBL) in combination with alternative methods as part of study program, a semester, a course module or a single day lecture. My courses / instruction programs will thus typically include one or more of the following instruction methods and resources:

- Text books and articles
- Class room lectures
- E-learning materials
- Case examples from own research / innovation projects or industry
- Videos
- Simulation Based Training methods (Business simulations, wargames etc.)
- Short or longer exercises
- Team based assignments (projects)
- Guest speakers
- Peer evaluation
- Etc.

I have over time, developed a preference for applying Game / Simulation Based training methods in my courses. For instruction, I typically select a combination of standard available games / simulations in the market and more bespoke solutions tailored to the particular training purpose. I have myself been involved in developing business simulations / games, and an example of the latter is for example. The Liner Shipping Game TM . This business simulation was co-developed with research partners and colleagues as part of a maritime research / innovation project in 2014, see for example this video for further info: <https://www.youtube.com/watch?v=l4q14w56-ss>

When to set up course modules, my starting point is to clarify profiles and requirements of the target audience as well as get familiar with current experience and skills as well as time and resources available for the effort. Based on obtained insights, I formulate specific course objectives and prioritize content as well as structure a set of classes and student sessions. A typically way forward is initially to identify and select standard materials available for the curriculum to be taught, as e.g. text books, training materials, e-learning modules, ppts, videos etc.. Several of these materials are today offered by the big publishers (Wiley, Pearson, McGraw-Hill etc.) to lecturers for free or a small fee. I finally combine such materials with case examples, assignments, business simulations / games etc. and own insights and experience from industry or projects, when to design a more final course plan and individual lectures. The time and effort I spend preparing for and executing a course will always depend on the audience and requirements set for examination of the students (written vs oral exam, individual vs group based assignment) as well as the budget available, i.e. the time and resources I and colleagues can consume for working with the course module.

Besides providing the students a particular set of skills and expertise on the topic taught / project supervised, I generally aim towards making students learn how to analyze and solve practical / industrial problems via combining systematic skills, scientific work procedures, critical and creative thinking and more innovative skills. As an instructor, I value that I can transfer not only curriculum and methods to the students, but also a set of working / thinking habits and values of "good quality engineering" work or behavior to them which btw is in line with the ultimate ambitions of the PBL method.

## Teaching experience

My teaching experience is summarized in table below:

### **Institutions:**

**Aalborg University** (AAL& CPH)

**Copenhagen Business School**

**MARTEC**

**ISM Vilnius / Baltic Institute for Leadership Development (BILD)**

### **Study Programs: (+ 200 lecturing days)**

Bsc Industrial & Mechanical Engineering

Bsc Global Business Development

Bsc Manufacturing and Operations Engineering

Msc Global Systems Design

Msc Operations and Management Engineering

Msc Industrial Engineering

Msc International Technology Management

Msc Autonomous Systems

MBA in Shipping & Logistics

Elective Courses at Cand. Merc. Studies

Executive Education – Course Modules in Business Process Excellence / Management

### **Topics:**

Philosophy of Science and Research Methodology

Operations & Service Management

Lean Six Sigma / Process Excellence

Production Planning and Control

Operations, Strategy and Change

History of Operations / Production Management

Quality Control and Management

Supply Chain Management / Logistics

Revenue Management

Production Planning and Control

Operations, Strategy and Change

### **Institution:**

**Maersk Line / Maersk Group**

### **Study programme: (+5 lecturing days)**

Internal educational workshops

### **Topics:**

Lean Six Sigma / Process Excellence

Supply Chain Management / Logistics

### **Institution:**

**LinerGame (+10 countries on 3 continents)**

### **Study Programme (+50 lecturing days)**

The Liner Shipping Game™ sessions across several countries and companies

### **Topics:**

Maritime Economics and Logistics

### **Institution:**

NGR Consult (for various associations / companies)

### **Study Programme (+10 lecturing days)**

Corporate training programs for clients from various industries and companies

### **Topics:**

Operations & Service Management

Lean Six Sigma / Process Excellence

From the table above, it is visible that I as university lecturer and professional corporate trainer have taught a broad range of industrial engineering (inclusive OM) subjects across the last decades. Common for all my teaching has been an emphasis on the practical applicability of curriculum, theories and methods taught. By deploying case examples, exercises, business simulations, own industrial and project evidence, I have achieved a reputation for being not only an expert, but also an engaging and motivating teacher. However, I have sometimes also received critique from students for my courses lacking a structured and detailed listing of skills to be achieved and readings to be done so they can prepare

efficiently and sufficiently for their exams.

I have over the years, improved course modules and lecturing to accommodate student viewpoints and feedback. I have done several oral and written evaluations of students and their assignments on various study programs at AAU and other institutions. With my contribution, I have never per say strived for or succeeded in receiving university teaching / lecturing awards though my efforts, both in university and industry often has been evaluated positively .

## **Formal pedagogical training**

During 2004-2005, I completed a mandatory pedagogical course for assistant professors in university teaching / pedagogics at AAU. While working as a project leader in Maersk Line I also attended training in developing short / precise presentations / talks for a business audience.

## **Other activities related to teaching and teaching development**

### **Development and management of study programs**

During my employment at particularly AAU, I have had responsibility for or been significantly involved in development and administration of educational programs, study semesters, course modules etc. For the years on the AAU CPH location, I played a leading role in developing new B.sc. and M.sc. study programs (MOE, ITL, GSD, AS studies etc.) as well as operating some of the study programs for shorter / longer time periods.

### **Supervision Experience** (Ph.D supervisions not included here)

As a project coach / supervisor, I have supervised +200 student projects across my career at various institutions, and most of them were accomplished in close collaboration with companies or other partners. I have frequently applied the strategy of initiating student project options in close interaction with own ongoing research and innovation projects. This has been done to create momentum and visible synergies across tasks done by students, researchers and companies. The strategy has ultimately increased learning outcomes for all involved, job opportunities and satisfaction of students as well as delivered additional knowledge and project results for researchers and companies compared to the additional energy spent executing it.

I have from 2010-2019 acted as examiner at various courses and for project supervisions at relevant Engineering educations at SDU and DTU. I was for example spring 2019, head of the evaluation committee for SDU's study program in Operations Management (I was invited and appointed months before the position as Head of Section was announced).