INTRODUCING PBL FOR NEW MASTER STUDENTS THE 'KICK-OFF PROJECT'

Lise Busk Kofoed and Ellen K Hansen

Media Technology, AAU CPH

TODAY'S AGENDA

- Welcome to the work-shop
- Why is it necessary to introduce Problem Based Learning approach to new master students?
- How to get the basic PBL knowledge and competences?
- Example: Kick-off-project for new master students; Lighting Design
- Lessons learned

Why is it necessary to introduce new master students to PBL?

How to get the PBL competences?

Problem-based learning (PBL)
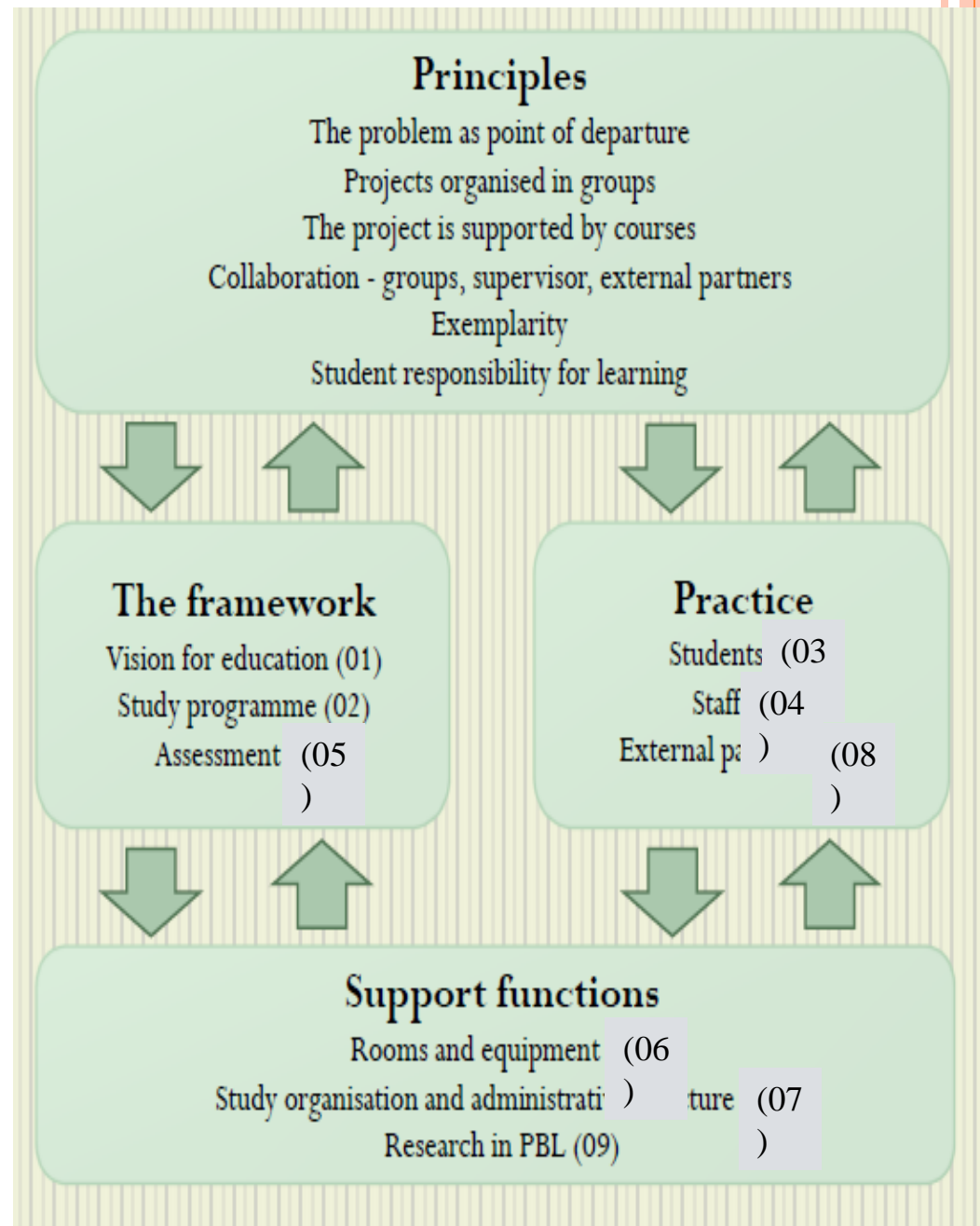# The Aalborg Model

The basics

AAU - AN OLD PBL UNIVERSITY

- AAU established in 1974

- PBL and group work from the start

- PBL has developed during the years

- In 2011 AAU got the accredited as a PBL university

- All students starting at the Technical faculty, AAU get a 5 ECTS course combining Technology&Society and PBL
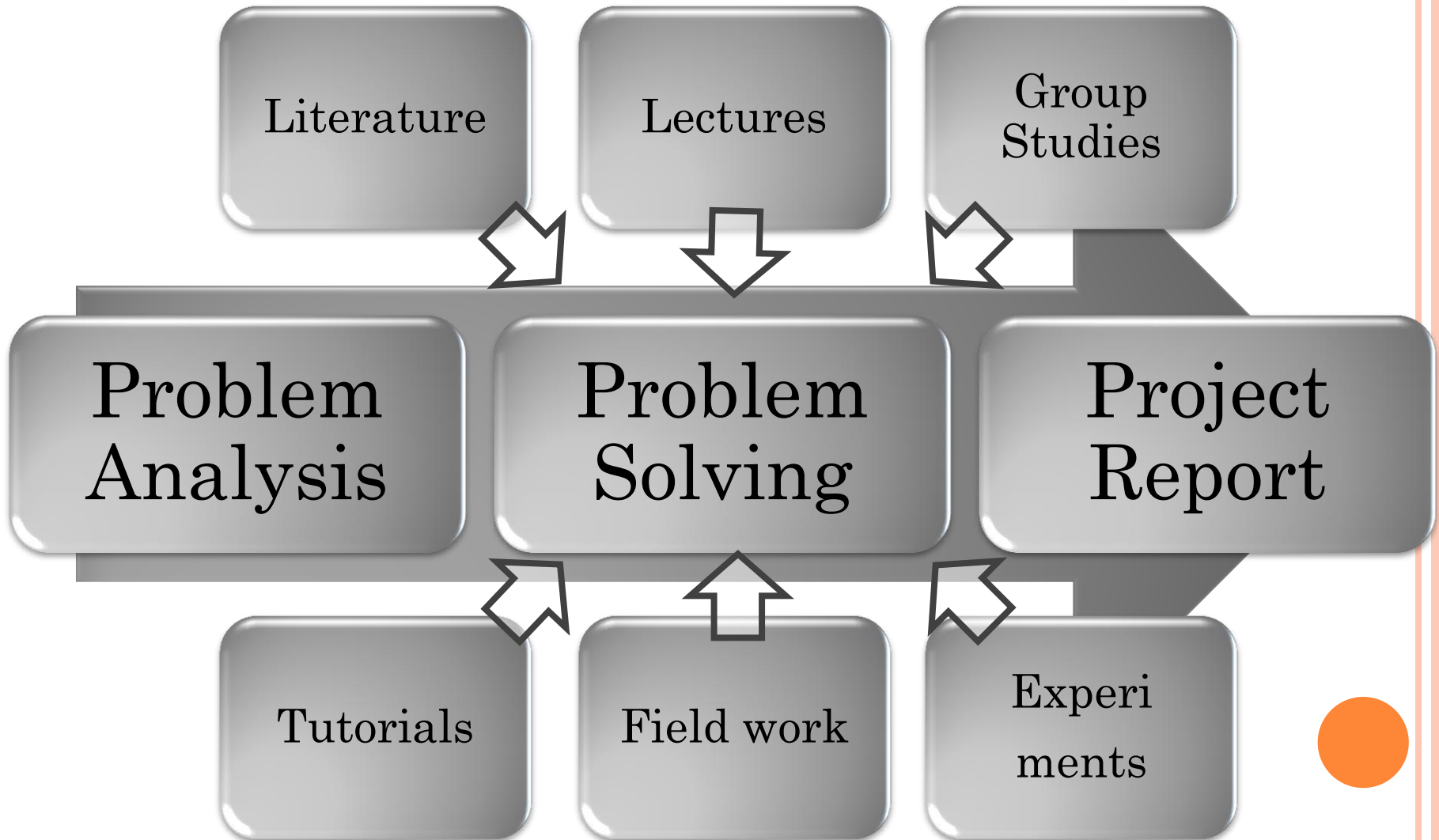
THE AALBORG PBL MODEL:

FOCUS AREAS SUPPORTING THE 9 PRINCIPLES (SCOTT BARGE 2011)

Principles

The problem as point of departure

Projects organised in groups

The project is supported by courses

Collaboration - groups, supervisor, external partners

Exemplarity

Student responsibility for learning

The framework

Vision for education (01)

Study programme (02)

Assessment (05)

Practice

Students (03)

Staff (04)

External partners (08)

Support functions

Rooms and equipment (06)

Study organisation and administrative structure (07)

Research in PBL (09)

(Diana Stentoft, 2016)

PROBLEM BASED LEARNING – THE PROCESS (DIANA STEENTOFT)

Literature

Lectures

Group Studies

Problem Analysis

Problem Solving

Project Report

Tutorials

Field work

Experiments

WORKING WITH A PROBLEM

- understand a complex phenomenon;
- working on a challenge, e.g. a design brief, creating a work of art;
- finding a more effective, appealing or environmentally friendly way to do something;
- learning more about a key concept through working with a trigger;
- producing a product for a client/user group.
- etc

Barret et al., 2011

- What characterizes a "good" problem?

LEARNING USING PBL APPROACH

The challenge for new master students

PROBLEM BASED PROJECTS

- Depart in an overall theme
- Choosing the subject area
- Broad learning objectives tied to theory, method and practice
- Through an analysis of existing knowledge, current issues and available resources
- Resulting in production of a problem statement (research question) which had to be operationalised and guide the remaining work on the project.
- Defined by students
- Supported by a supervisor

THEME, SUBJECT, PROBLEM AREA, PROBLEM STATEMENT

Subject Area, Theme

Problem Area

Problem/ Problem Formulation

Theme, Subject area, Related objects and fields of interest.

Problem area - Theoretical and empirical relations that make something a problem.

Problem - The object of study for your project
Final Problem Statement– A short and precise formulation of the problem.

Kaare Pedersen, 2008

PROJECT ORGANISATION CREATES THE FRAMEWORK OF PROBLEM-BASED LEARNING

A project represents a time-limited and targeted process

Collaboration is a driving force in problem-based project work

The students in the group manage and conduct the project work

The group work includes aspects such as knowledge sharing, collective decision-making, academic discussions, coordination and mutual critical feedback.

In addition, students engage in close collaboration with individuals outside of their group, such as their supervisor(s) and external partners, e.g. companies

PBL SKILLS AND COMPETENCES

- **Problem analysis**
- **Problem solving**
- **Interdisciplinary collaboration**
- **Creativity and innovative thinking**
- **Critical thinking**
- **Team work**
- **Project management**

- **Entrepreneurship**
- **Employability**

INTRODUCING NEW MASTER STUDENTS TO PBL

Increasing number of new and international master educations

Organized for the whole university

2014 - PBL course: 3 half days during the 1. month

2015 – PBL course: 3 half days during the 1. month

2016 – PBL course: 3 half days during 3 months

+ an expriment 2015 and 16 Lighting Design

COMBINING LIGHTING,
MEDIA TECHNOLOGY AND ARCHITECTURE

WELCOME TO

LIGHTING
DESIGN

THE INTERDISCIPLINARY PROGRAMME

	ARCHITECTURE	LIGHTING	MEDIA TECHNOLOGY
1. SEMESTER	LIGHT AND SPACE	LIGHTING FUNDAMENTALS	RENDERED LIGHTING SIMULATION
	SEMESTER PROJECT: SEEING THE LIGHT		
2. SEMESTER	LIGHT AND CONTEXT	EVIDENCE-BASED LIGHTING DESIGN	INTELLIGENT LIGHTING DESIGN
	SEMESTER PROJECT: CREATING WITH LIGHT: INTERACTIVE LIGHTING		
3. SEMESTER	FOCUS AREA, ELECTIVE COURSE OR CREATIVE INNOVATION AND ENTREPRENEURSHIP		
	SEMESTER PROJECT: LIGHTING DESIGN INNOVATION		
4. SEMESTER	MASTER'S THESIS IN LIGHTING DESIGN		

THE PROGRAMME

Lighting Design – a new interdisciplinary master programme 2014 (Technology and science)

Students with different nationality and different educational background

A PBL introduction course was offered to new and to International students

THE PROGRAMME

The first PBL course for new master students was a big challenge for the students (2014)

Students found it difficult to leave their groups

Some students needed time to find housing or getting around in Copenhagen

Difficult to use the PBL theory

Students had difficulties in their groups

Learning PBL integrated in project work ("PBL trained as you go")

Doing a real and meaningful project for **all** 1. semester students

Using all PBL phases in the project

Integrating different Lighting Design knowledge areas in the project

LiD1 "Kick off project" September 1-17th 2015

Groups of 4 students in mixed groups

Seeing the Light Creating new Narratives

THE ROYAL CAST COLLECTION 2000 PLASTER CASTS OF SCULPTURES OF THE HUMAN FORM FROM ACROSS EUROPE, AND WHICH CAN REVEALS NARRATIVES OF EVERYTHING FROM PAGAN GODS TO CHRISTIAN TRADITIONS.

Statues created to be in a specific place in day light

The aim:

- To give students a meaningful approach to lighting design
- Establish new ways of seeing how light can create new narratives in the unique, historical and cultural context of The Royal Cast Collection
- To give the new students an experience by collecting knowledge from different subject areas and synthesize this knowledge into a problem statement,
- To explore new potentials through the development of a lighting concept reflecting the concept of PBL.

PROBLEM BASED LEARNING- set up for playful, inspiring and effective project work

1. Idea generation *01.09-07.09*
   Problem analysis, final problem statement

2. Problem solving *08.09-12.09*
   Design, experiments

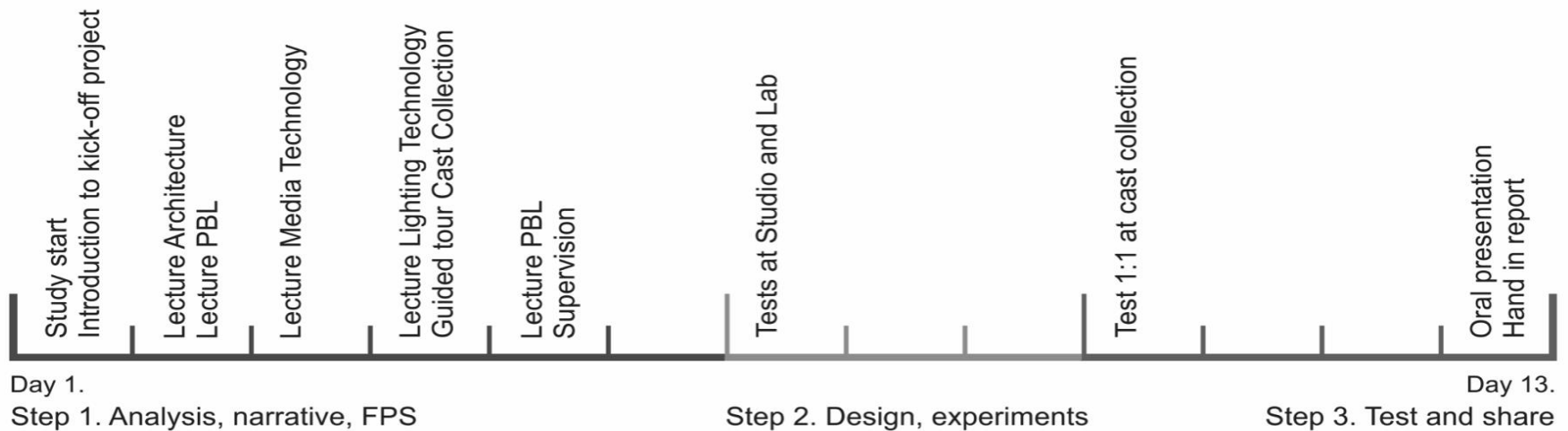 **3. Implementing solution 12.09 – 13. – 14.09**

3. Test and communication *13.09-16.09*

TIME LINE
13 DAYS FOR THE KICK- OFF PROJECT

Study start
Introduction to kick-off project

Lecture Architecture
Lecture PBL

Lecture Media Technology

Lecture Lighting Technology
Guided tour Cast Collection

Lecture PBL
Supervision

Tests at Studio and Lab

Test 1:1 at cast collection

Oral presentation
Hand in report

Day 1.
Step 1. Analysis, narrative, FPS

Step 2. Design, experiments

Day 13.
Step 3. Test and share

Results from 13 projects; 2015 and 2016
1 characteristic project can illustrate the structure and steps in the process.
Project title: 'Popping up in the Royal Cast Collection.
Experiencing pop-art and ancient culture in a new light'

Narrative: with the narrative of the Greek God Apollo investigating how light can express the contradicting sexuality of the sculpture : "Provoking and highlighting Apollos contradicting sexuality. The statue is not as masculine as other male statues".

One characteristic project to illustrate the structure and steps in the process.

Project title: 'Popping up in the Royal Cast Collection. Experiencing pop-art and ancient culture in a new light'

Narrative: with the narrative of the Greek God Apollo investigating how light can express the contradicting sexuality of the sculpture : "Provoking and highlighting Apollos contradicting sexuality. The statue is not as masculine as other male statues".

Step 1: Analysis of the context and choice of narrative. The focus area was defined on basis of observations of the sculptures, the architecture and the light.

The final problem statement was: *"How can the contradicting personality of Apollo be highlighted through light".*

Step 2: Design experiments. Positioning of the sculpture in relation to other sculptures, the walls and window was defined. The lighting fixtures were tested. Coloured light (pink and blue) was introduced to add an extra layer to the experience and perception of contradicting sexuality.

Step 3 Communicating the results at the Cast Collection – getting feed-back from experts, peers and supervisors.

A woman is punching a man – Two characters in a POP-ART theme

Bringing life to the busts and the space in order to support the ware-house atmosphere in a more compelling way.

All projects were using PBL as structure and integrated part of their projects.

PBL supported the integration of different knowledge areas and methods.

Managing time and delegating tasks was very satisfying for the students.

"Now we know everybody"
"We didn't belive we could do so well and so much"
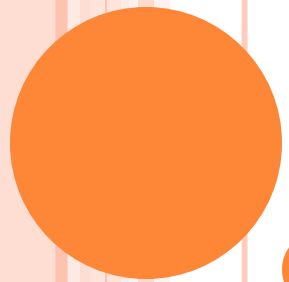"We can see how important it is to have tried to work in an interdisciplinary way"

Lessons learned:

- It is possible for students to make a meaningful PBL project and get the comptences connected to group work.

- Follow-up during next semesters (crash- course).

- Supervisors should have the same introduction to PBL.

- Redesign of the presentation step.

- More simple structure of feed-back to the students.

Thank you for coming today ☺