PBL AS A CHALLENGE AND OPPORTUNITY FOR INNOVATIVE AND INTERDISCIPLINARY LEARNING

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What will be addressed

- How does PBL support and challenge students to work across disciplinary boundaries?

- How may PBL supervisors and facilitators support students to handle disciplinary uncertainties of complex problems?

- How may PBL contribute towards innovation and entrepreneurship in higher education?
My context…

- Head of Centre for Health Science Education and Problem-based Learning, Aalborg University, AAU
- Years of experience with research and practice of PBL
- AAU as an established PBL university (1974)
- PBL primarily organised around projects – app. 50% of study time

The people and the framework
- Students
- Teachers/supervisors
- Physical space/group rooms
- ICT
- Study program
- Assessment
- Ect.

The 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 competencies
- Solid knowledge base
- Collaboration
- Communication
- Handling information
- Self-directed life long learning
- Project organisation
- Problem solving
- Desimination of information
- Critical thinking
- Interdisciplinary
The problem….

"Which sports cultural characteristics can be associated with male Syrian refugees?"

As such, the worth of disciplines or interdisciplines can be judged on roughly pragmatic grounds. Both the traditional disciplines as well as new interdisciplinary and transdisciplinary ways of thinking are to be judged on the basis of how well any of these constructed systems of thought enable us to solve the historically conditioned, yet constantly evolving, practical problems of living (Petrie, 1981).
Interdisciplinary learning and PBL – the challenges

- Addressing differing epistemologies
- Relinquishing responsibility for learning to students in groups
- Removing disciplines is removing scaffolding of learning
- Expecting creativity and institutional and organisational structures
Which kind of interdisciplinarity does the problem call for?

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Scaffolding interdisciplinary PBL

- Explicit learning outcomes emphasising:
  - The need for meta-cognitive competencies when addressing complex and interdisciplinary problems
  - Disciplinary anchoring
  - Critical awareness of the interdisciplinary learning process – e.g. contributions and limitations of disciplines, knowledge gaps on the intersection of disciplines, differing epistemologies etc.
Equipping students to learn through problems

Which are the competencies needed to work with complex and interdisciplinary problems in student groups?

Exploring existing information – information processing competencies

Identifying potential contributions of disciplines to the exploration of the problem – collaborative strategies

Experiencing discomfort and uncertainty in project groups – tools and strategies to accept uncertainties

Bringing different beliefs and epistemological positions into a collaborative process – critical thinking and feedback processes
Equipping supervisors to supervise across disciplinary boundaries

Which are the competencies needed by PBL supervisors to support students’ interdisciplinary learning?

Explicating learning outcome with students – competencies to work with complex learning processes and meta-cognition

Bringing student experiences and future aspirations into the project work

Trusting students’ to control the project even if the project is not within ones field of expertise – tools and strategies to surrender power of the process

Letting the problem and student creativity guide the work – tools and strategies to handle uncertainties
Equipping institutions to scaffold interdisciplinary and problem-based educations

Which are the organisational and administrative structures necessary to interdisciplinary and problem-based learning?

Procedures and structures in place to enable interdisciplinary learning – e.g. through external or cross-faculty collaborations

Adequate physical and ICT facilities

Procedures for allocation of supervisors and use of co-supervisors from other faculties or external partners

Supporting students to take their projects into ’real-life’ – incubating ideas, business support etc.
PBL as a catalyst for innovation?

Yes – but only in so far as the uncertainties naturally included in innovative processes for both students and supervisors are addressed
Yes – as prolonged periods of project work opens to collaboration with businesses and organisations
Yes – as learning from problems rather than books offers students possibilities to use and develop their creativity and move across disciplinary boundaries in their search for solutions

No – because structures of projects sometimes become the scaffolding remedy when students can no longer lean on disciplines
No – because supervisors may direct students towards their own fields of interests and where they feel most comfortable offering supervision
No – as institutional and administrative structures do not allow for the time or cross faculty interactions necessary to foster innovative and interdisciplinary processes
The problem revisited

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THANK YOU