Applied Theory of Science in Higher Education Development

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ICED - 16th of June 2014 - Stockholm
Example: disciplinary borders in sport science

Science of sports
- Mandatory lecture and seminar on the fundamentals of natural sciences
- Mathematics, physics, experimental design
- Students mostly in the first year

low motivation  high dropout  poor feedback
Example: disciplinary borders in sport science

**Hands on tasks:**
- Counseling
- Implement Tutorials
- Application of specializes measures
- Student activation strategies

**Professor’s expectations:**
- Adapt HED skills
- Focus on present needs
- Apply general theories and strategies
- Specialize
Example: disciplinary borders in sport science

Student‘s problems:

- Why is natural science a part of sports science at all?
- How does it relate to other aspects of the discipline?
- What are the different ways of thinking of those aspects?
- Where do those different aspects meet and benefit from each other?
Example: disciplinary borders in sport science

- Awareness of differences
- Role of the natural science perspective
- Relations to other aspects of the discipline
- Address student’s prior knowledge and expectations

Science of Sports

social
physiological
pedagogical
physical?
Risks and needs of discipline specific HED

Assumption: The more HED focus on the disciplinary details, the more you risk a reclusive and less accessible teaching.

Reflection and solutions for teachers:
- Relate the subject matter to other disciplines, the lifeworld and the student’s prior knowledge.
- Allow students to develop their own framework of reference.
- Make the whole process of scientific work visible to the student.
Thoughts on the use of a Theory of Science:
1. Connect the disciplines to the lifeworld

- selection and definition of problems
- daily routine of the researcher
- social impacts of scientific results
Thoughts on the use of a Theory of Science: 2. Disciplines as „finite provinces of meaning“

• Every discipline creates meaning within its own set of rules about what is valid, right, or true.

• A Theory of Science provides terms, concepts and ideas to describe those rules.

• A reflection on those terms facilitates critical thinking and an interdisciplinary attitude.
Thoughts on the use of a Theory of Science: 3. Making important things visible to the students

• Encourage teachers to make visible to their students why disciplinary aspects matter and what their place is within the universe of all sciences.
• Follow the white rabbit!
Thoughts on the use of a Theory of Science

- The lifeworld is a common ground for all sciences (cf. E. Husserl).

- Disciplines can be described by how they differ in the creation of meaning (cf. A. Schütz).

- Teachers may benefit from making those things visible to their students (cf. J. Hattie).
Hands on! – Discussion preparation

Please pair up with someone you don‘t already know (change seats if suitable), introduce yourselves and work on both following questions for 5 minutes!

1. Reflect on your own personal academic backgrounds. Where and when did your disciplines emerge in history? Try to identify common roots with your partner!

2. What unique perspective could you probably contribute to the three presentations? Prepare some arguments for the discussion!
Thank you!