USYS TdLab’s contribution to id, td and design thinking teaching

Christian Pohl & Michael Stauffacher
Why are we here today?

- Getting to know each other’s teaching
- Discuss, learn, network and have fun
- and because of

Cartoon: K. Herweg

innovedum
Eingabetermine: 1. März und 1. Oktober

Interdisciplinorchester

Cartoon: K. Herweg
The Transdisciplinarity Lab at the Department of Environmental Systems Science (USYS TdLab)

- Initiative of Peter Edwards (former Dean, now Singapore-ETH)
- Fields of activities (see [http://www.tdlab.usys.ethz.ch/](http://www.tdlab.usys.ethz.ch/))
  - Teaching: bachelor, master and PhD level in TDforSD
  - Research: initiate, coordinate and undertake exemplary td research projects, develop Td methods toolbox
  - Services: advise/support USYS’s students and researchers in TDforSD
- People at the USYS TdLab
  - Co-directors Pius Krütli, Christian Pohl & Michael Stauffacher (each 50% permanent position)
  - Core team (Alice Hertzog, Dagmar Schröter, BinBin Pearce, Carolina Adler, Evelina Trutnevyte – teaching project and research funded)
  - PhD students & PostDocs/Seniors (e.g. Mert Duygan, Greg Meylan, Theresa Knoblauch, Roman Seidl, Carmenza Robledo – research funded)
  - Guest researchers (PhD students, PostDocs, Profs)
TdLab’s understanding of ID & TD
TdLab’s teaching: Theoretical framework

Rationality of science, truth and rigor

Functional dynamic collaboration of disciplines and engagement with stakeholders to research and solve complex sustainability issues

Science researches sustainability issues

Rationality of practice, relevance and workability

Society handles sustainability challenges

Problem framing

Problem analysis

Impact

(Bergmann et al. 2005; Pohl und Hirsch Hadorn 2007; Stauffacher et al 2008; Jahn et al. 2012; Pohl 2014)
Our teaching core: TDforSD (transdisciplinary research for sustainable development)

- Bachelor level (German, UWIS only, > 100 students)
  - [Einführung in den Umgang mit Umweltsystemen (4 ECTS)]
  - [Analyse und Beurteilung der Umweltschädlichkeit (6 ECTS)]
  → at the moment revised and integrated into one course (10 ECTS)
- Masters level (English, UWIS/AGRW/beyond; 20-30 students)
  - Transdisciplinary case study (7 ECTS)
  - Transdisciplinary case study methods (3 ECTS)
  - Sustainability assessment (3 ECTS)
  → minor TDforSD (case study plus one of the two method course)
  → additionally: MSc theses (30 ECTS each)
- PhD/PostDoc (English, ETH domain & beyond; 20-30 students)
  - CCES Winterschool „Science Meets Practice“ (4 ECTS)
  - Seminar Td Research for Sustainable Development (2 ECTS)
Example bachelor level: “Umweltproblemlösen”

- Purpose: first year students analyse a complex problem and develop solutions to it
- Learning focus: basic scientific skills, group work, combining system and design thinking
- Features: First experiences with being an expert, Graded group performance
Example master level: transdisciplinary case study

- **Purpose:** master students tackle a real-world problem in interaction with societal actors.
- **Learning focus:** research based learning, id group, stakeholder engagement.
- **Features:** covers whole research process (from formulating research questions to writing report).
Example PhD level: “Science meets practice”

- **Purpose:** PhDs and Post-Docs plan and run interactions with people from practice.
- **Learning focus:** Exchange on equal footing with practice, moderation and consultation skills, work in id groups.
- **Features:** PhDs take full responsibility, stakeholder engagement is experienced in real-world context.
Some of TdLab’s burning questions:

- How to deeply integrate system and design thinking?
- How to adequately grade case study courses?
- How to combine consecutive elements of our curriculum with incoming new students?
- Teaching abroad (e.g. summer schools in Colombia, case study in the Seychelles): challenges and benefits?
References


