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Sustainable Development and the Dialectic of Change:
Research-driven teaching to identify and handle aporetic conflicts by example of dilemmas on a regional scale

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The Case: Elective Module Sustainable Development (EMSD) – an inter- and transdisciplinary format

In order to understand the complexity of the concepts related to sustainable development it is necessary to develop the ability to look at an issue from different perspectives, to understand the logic of all subsystems and to develop a perspective by integrating different disciplines. Our team at the Alpen-Adria-Universität Klagenfurt strives to implement these challenges through the interdisciplinary Elective Module Sustainable Development (EMSD) (nominated for the Ars Docendi award for innovative teaching 2015) and the extension Curriculum on Sustainable Development.

Aporia in theory and as learning opportunities

An aporetic constellation is characterized **by three conditions that must be fulfilled simultaneously:**

(1) There are two conflicting positions;
(2) both are correct;
(3) they are interdependent.

Aporias and contradictions are logic phenomena of transformation processes. Therefore, contradictions are essential learning and shaping opportunities (Rauch 2016, Hübner 2011). Aporias, which are handled successfully, set free "tremendous potential" (Ossimitz and Lapp 2007, p. 209, also: Hübner, 2012b)

Aporia in practice: Regions as area of action for Sustainable Development (SD) and resulting aporias

Joint interests	▪ Attract project funding in the „competition amongst regions“ ▪ Correct, legally binding and proper handling of funding ▪ Develop and implement „good“ innovative projects	
Opposing interests	Interests of funding bodies	Interests of beneficiaries
	▪ Create a maximum of collective benefit ▪ Maximum contribution ▪ Risks preferably rest with beneficiary ▪ Utmost control of implementation ▪ Utmost visibility and transparency of funded projects ▪ Strong competition increases cost-benefit ratio	▪ Create a maximum individual benefit ▪ Maximum grant rate ▪ Risks preferably rest with funding body ▪ Utmost autonomy during implementation ▪ Visibility and transparency occasionally not intended ▪ Strong competition decreases cost-benefit ratio
Self-regulating mechanisms within the system	▪ The more the projects meet the interests of the funding bodies, the more funds for funding are available in a region. ▪ The more projects meet the interest of the funding recipients, the more projects will be developed and be successful.	

Challenge for teaching: Identifying and handling aporetic conflicts

Schwarz (2003) discusses different strategies to manage and "resolve" conflicts, in particular the following options: a) escape, b) destruction, c) subordination, d) delegation, **e) compromise, or f) consensus**.

Since aporetic conflicts intrinsically have a reciprocal relationship, options a) to d) cannot lead to a solution that is reasonable or provides more than, at best, temporary relief. A long-term solution to an aporetic conflict is therefore based on **e) compromise or f) consensus**. Notably, "a purpose of an organization is to manage aporetic contradictions" (Ossimitz & Lapp, 2007, p. 269).

Brief description	**The elective module offers an interdisciplinary view on the concepts of sustainability to students of all faculties. Students gain an overview of different facets of SD and the history of the concepts. The dilemmas, aporias and contradictions related to SD shall be identified. Methods to develop appropriate solutions are developed, presented and applied by students.** **The elective module experiments with innovative settings for training and education and places emphasis on linking to research and practical matters. Different concepts and methods of the four involved faculties (technical, economic, cultural, integral) are presented and applied. Students and lecturers have different scientific and disciplinary backgrounds, which is considered a unique asset for approaching the complex concepts of SD.**
Central topics	**1) Sustainability: History of idea and concepts; 2) Disciplinarity: working in multi-, inter- and transdisciplinary environments and contexts; 3) disciplinary perspectives by example of growth, development and self-fulfilment: ecology, economy, educational sciences; 4) disciplinary perspectives by example of norms, rules and patterns: jurisprudence, cultural sciences and sociology; 5) System theory: approaches, system-performance, models; 6) Elaboration of a transdisciplinary research project (field of practice, research question, research design, methods, implementation, presentation).**
Learning goals	**1) Theoretical and technical approaches towards SD of different disciplines; 2) Identification of contradictions and aporetic conflicts related to SD; 3) Applying different methods of inter- and transdisciplinary research.**
Didactic approaches	**The concept is characterised by 1.) „Concentric“ structure of lecturers: guiding team, core-team, enlarged team, partners from practical settings; 2) High diversity of inputs of different scientific disciplines and technical fields; 3) Concrete field of application: topic, actors´ transfer product; 4) Learning progress and evaluation: logbook, essay on research question, seminar paper.**
Formats of teaching and learning	**1.) Different presentation formats, e.g. „classical“ lecture, Pecha Kucha, presentation of summaries; 2.) Highly interactive formats for exchange, e.g. group work, mental connections, speed-dating, open space, world cafe, 3.) Software for simulation and visualisation, e.g. i-generator, simulation models; 4.) Experimental formats, e.g. peripatetic exercise, expedition, translocation.**

Results of EMSD: Selected aporetic conflicts at regional level

1. Funding authorities and beneficiaries.
2. Representative-democratic versus participatory decisions.
3. Users of nature versus conservationists


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