

Integration in Inter- and Transdisciplinary Research

PhD 06b: Learning in Communities of Practice

Inter- and Transdisciplinary Research as a Mode of Learning in Communities of Practice (Working Title)

Rationale

Within inter- and transdisciplinary research endeavors synthesis of findings is a key challenge. This is no different within the Robert Bosch research group as integration across perspectives, thematic contexts and scales is addressed in various steps of synthesis. Thus, research needs to find ways how such integration and synthesis can be best supported. In this PhD work the processes of integration and synthesis is addressed from a learning science perspective. It is informed by an understanding of inter- and transdisciplinary collaboration as a reciprocal learning process in a community of practice.

Background / State of Research

Collaboration across disciplines, knowledge areas and fields of action is a demanding task in sustainability science (Bergmann et al. 2012). Integration and synthesis of findings in all stages of the research process has been identified as a core challenge in inter- and transdisciplinary research and needs to be actively supported (Stokols et al. 2013, Pohl et al. 2008). Research into the management of such research processes provides insights into specific methods and instruments as well as evaluation tools to support such research (Loibl 2000, Blackstock et al. 2007). By considering such processes as learning situated in social practice, and by using the framework of 'Communities of Practice' for its analysis, educational science may offer an alternative contribution for an insight into the practice of inter- and transdisciplinary collaboration (Barth and Michelsen 2013). From that perspective the researcher's shared social practice is a sort of mini-culture that binds its members together, and learning takes place in this community both individually and collaboratively. Learning in that sense occurs as a form of 'legitimate peripheral participation' (Lave and Wenger 1991) and is understood as a constant exchange between novice and master or layman and expert. Based on the topic or specific problem that the research group deals with, an individual may be an expert in one topic but a layman in another. Thus, the community of practice approach offers a way to think and conceptualize such inter- and transdisciplinary collaboration as a specific form of learning.

Approach and Research Design

Research will be organized in two parts: In a first step, based on a systematic literature review, a robust framework for support mechanism for inter- and transdisciplinary collaboration is developed that conceptualizes collaboration among diverse research groups as learning in a community of practice. In a second step, support mechanisms are planned and implemented in an intervention study. By analyzing the impact and outcome of these support mechanism it is explored in depth how an environment can be created in which learning individually and collaboratively helps to overcome barriers and shortcomings in inter- and transdisciplinary collaboration.

Expected Results

Results from this PhD will support the integration process of the interdisciplinary PhD team and the transdisciplinary case studies conducted through the research group. It will also complement insights from the second PhD on methods for communicative, social, cultural and epistemic integration and will support a more robust understanding of how knowledge integration in such a research group can be achieved.

Supervisor

Prof. Dr. Matthias Barth

Institute of Integrative Studies

matthias.barth@leuphana.de