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# INTEGRATION IN INTER- & TRANSDISCIPLINARY RESEARCH

## Problem Statement

A fundamental transformation is necessary to tackle today's great societal challenges. To achieve such transformations we also need to transform the ways in which we do science (Schneidewind et al., 2016).

Transdisciplinary research is a growing field that aims for sustainability transformations (Jahn, Bergmann & Keil, 2012) and the transformation of traditional modes of doing science (Nowotny, Scott & Gibbons, 2003). One of its defining traits is bringing together actors from different areas with diverse ontologies, epistemologies and underlying values (Scholz & Steiner, 2015).

In this context, integration becomes a key challenge that needs to be actively supported (Stokols et al. 2013, Pohl et al. 2008). For such integration to be transformative, we require not only epistemic integration, but also the engagement of the cognitive (head), psychomotor (hands) and affective (heart) knowledge domains (Sipos, Battisti & Grimm, 2008).



## Joint Research Question

How can we foster knowledge integration in inter- and transdisciplinary research?

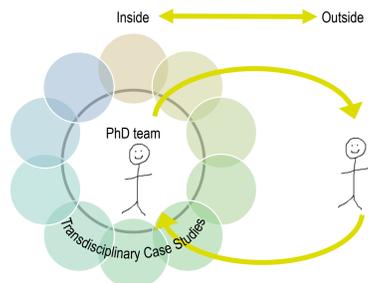
## Research Approach: Conducting Formative Accompanying Research (FAR)

"Learning with, for and about the research team" (Freeth & Vilsmaier, in review)

In order to address the integration and synthesis challenge in the "Processes for Sustainability Transformation" research team, two of the PhD positions are explicitly oriented towards developing methods and support mechanisms to foster collaboration and knowledge integration. This will be done at the levels of:

- The inter-disciplinary PhD team
- The transdisciplinary case studies in collaboration with the PhDs

Our roles as researchers: Participants | Facilitators | Observers



## PERSPECTIVES

## METHODS

## EXPECTED OUTCOMES

### A) Methods for Integration: From Freire to Art-Based Research

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#### Framing

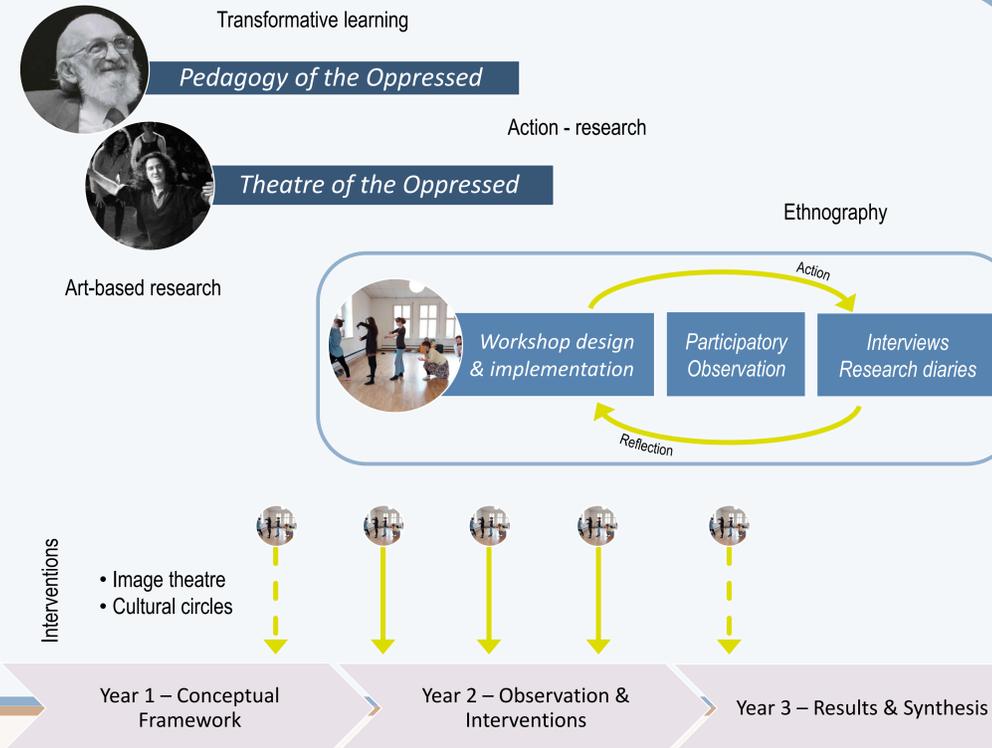
Paulo Freire's work on alphabetisation and liberation of the oppressed may offer valuable insights for the design of transdisciplinary research processes. His critical pedagogy, also known as "Pedagogy of the Oppressed", proposes the learning process not as an instrumental act of conveying information to a passive learner, but as a dialectical process in which learners themselves are seen as subjects with transformational agency over the political context that they inhabit (Freire, 1970; 1978). Likewise, Augusto Boal's "Theatre of the Oppressed" uses the stage as a laboratory for personal and social transformation (Boal, 1995).

While both of these pedagogues' work is rooted in a Latin American development context in the last century, the aim of this research project is to translate their approach to an academic context. The objective is to investigate how their body of work can inform the design of methods that a) support the integration of different dimensions of knowledge, and b) enhance the transformative nature of transdisciplinary research processes. Particular focus will be to understand and facilitate how normativity is uncovered, negotiated and rebuilt during processes of integration.

#### Individual Research Question(s)

How can Paulo Freire's critical pedagogy and associated methods inform the design of methods for knowledge integration in transdisciplinary research?

- How can Freire's method be translated into inter- and transdisciplinary research processes?
- How do Boal's performative methods assist in integrating different types and ways of knowing?
- How is normativity uncovered, negotiated and reconstructed when using these methods?



### B) Learning in Communities of Practice

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#### Framing

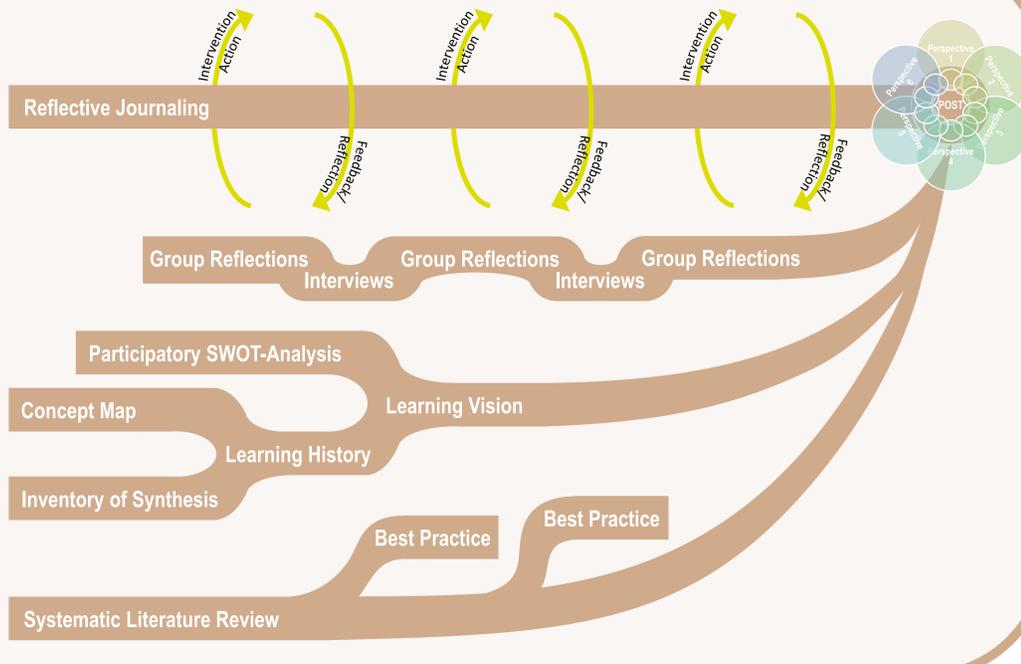
Transdisciplinary research aims for the integration of multiple disciplines and different types of knowledge (Defila & Di Giulio, 2015; Lang et al., 2012), to be solution-oriented (Lang et al., 2012) and at the same time reflexive (Popa, Guillermin & Dedeurwaerdere, 2015; Voß & Bornemann, 2011) as well as empowering for practitioners (Brandt et al., 2013) and participants (Popa et al., 2015).

Transdisciplinary research and the Communities of Practice concept share some common features as well as similar criticisms. They both focus on knowledge co-creation and learning processes between laymen and experts outside traditional formal education/research settings. They also point out the importance of power relations in these processes, but don't address them properly.

#### Individual Research Question(s)

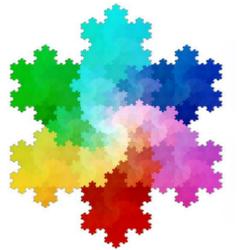
How can mutual learning processes in inter- and transdisciplinary Communities of Practice be best supported?

- What are the support mechanisms in inter- and transdisciplinary Communities of Practice that foster mutual learning?
- What is the relationship between mutual learning and knowledge integration?
- How do power relations shape these processes?
- What is the role of reflexivity for mutual learning?



- Adaptation of Freire and Boal's critical pedagogies to inter- and transdisciplinary research contexts
- Workshop-based methodology which integrates normative dimensions of sustainability into transformative research processes
- Further understanding of how the fields of transformative learning and critical pedagogy can inform research processes for sustainability transformations

Contributing towards a transformative methodology for integration in inter- and transdisciplinary research



- Contribute to a better understanding of the fields of social learning and knowledge integration and their support mechanisms → Framework development
- Fostering mutual learning and knowledge integration across diverse ontologies, epistemologies and underlying values
- Enhance/develop methodologies for the assessment of
  - Different knowledge types
  - Successful knowledge integration