



Transdisciplinarity and universities: a path ahead

Matthias Kaiser

Senter for vitenskapsteori, UiB.

What is transdisciplinarity?

- ▶ Working definition of transdisciplinarity (TD):
 - ▶ ***Ab initio* commitment to the framing of the question by integrating different domains and disciplines of knowledge, even when this means working across different theoretical perspectives and methodological practices.**
 - ▶ **A focus on real-world problems, where context and complexity are recognised and confronted as part of the methodology.**
- ▶ It is distinguished from multi-disciplinarity (MD) and interdisciplinarity (ID):
 - ▶ MD = collaboration between different disciplines where experts use their traditional ways of addressing problems while maintaining their respective disciplinary perspectives.
 - ▶ ID = the interface between a small number of pre-defined disciplines as a collaboration of different experts, with the aim of developing the most appropriate – and *singular* – approach, reflecting the parent disciplines.
- ▶ NB: TD is typically called upon to address “wicked” problems.
 - ▶ Wicked problems = “problem understanding and problem resolution are concomitant to each other” (Rittel & Webber 1973), no algorithm for a single final solution; a dynamic process.



In other words:

- ▶ **TD challenges our conventional conceptions of “relevant expertise”!**
- 



Why move to transdisciplinarity?

- ▶ First, important to mention that TD is **not** meant to replace all of traditional disciplinary science, but to add to it.
- ▶ Second, society faces important complex (“wicked”) problems, where siloed knowledge cannot provide robust answers.
 - ▶ Climate change, pandemics, food crisis, biodiversity, sustainability, social cohesion, etc.
 - ▶ Reductionist approaches do typically not well with scalability, resilience, acceptance, variability and plurality etc.
 - ▶ Facts and values get intertwined in complexity (post-normal science).
- ▶ Third, problem framings are often biased by power and narrow disciplinary perspectives.
- ▶ Fourth, dialogue with users and affected parties crucial for ethical, responsible science.

What should we do to promote TD in universities?

- ▶ Currently, systems of training, reward and funding (internal and external to the university) work against TD.
 - ▶ universities, funders and government reinforce each other in a reductionist and compartmentalized approach.
- ▶ The result is an undermining of **public trust** and places scientific knowledge on the periphery **for policy**.
- ▶ Undergraduate training should expose students to a **broad range of epistemologies** and corresponding methodologies: comparing, contrasting and critiquing these.
- ▶ Start taking a small cadre of high-quality students who have **integrative thinking skills** and training them, at the upper undergraduate level, in TD thinking. This training would likely involve **problem-based teaching and project work**.
- ▶ At the **graduate level**, higher degrees in TD should be supported. However, transdisciplinary graduate training requires **university-wide centres/institutes** with TD skills to work to define projects and **supervisors across the University** suitable to provide training.
- ▶ **Faculty** involved must have a commitment to TD. This innovation requires a **central centre/unit of TD expertise to assess quality** and to work with faculty to achieve these goals.



Benefit for universities to move to TD?

- ▶ TD creates a genuine forum through which to gain **deeper and more well-rounded appreciation of problems and their solutions**. TD training for graduate students should therefore be a pinnacle programme for a research university.
- ▶ A further benefit will be that civil society and policy makers will see the societal role of the University in a fresher light. TD represents a kind of **“re-enlightenment”** through re-engagement and alignment with the core aspects of a research university as it emerged 200 years ago, and which have been somewhat lost since the mid-20th century (“Bildung”).



Thank you for your kind attention!

Matthias.Kaiser@uib.no