

Three types of knowledge tool

A tool for tailoring research questions to (societal) knowledge demands.

What is the three types of knowledge tool?

The three types of knowledge tool serves to reformulate research questions in order to check what (societal) knowledge demands the questions meet. The tool aims to generate three versions of a research question, each version stressing a different type of knowledge:

- Knowledge about what is (systems knowledge)
- Knowledge about what should be (target knowledge)
- Knowledge about how we come from where we are to where we should be (transformation knowledge)

On the basis of the different versions of a research question, the most relevant one, with respect to the particular (societal) knowledge demand in question, can jointly be identified in group discussions.

Why should it be applied?

When formulating research questions, researchers generally follow the standards of their own thought style. Whether this answers relevant (societal) knowledge demands is unclear. The three types of knowledge tool reveals some of the implicitly (i.e. subconsciously) applied standards and promotes deliberation and reevaluation of the relevant question(s) to pose.

When should it be applied?

The three types of knowledge tool supports problem framing. It is typically used when discussing and fine-tuning research questions, but can be applied at any stage as an instrument of reflection.

How does it work?

Take as an example a joint project between a humanities and a medical researcher in medical humanities. The agreed topic of the project is: "Visualizing brain activities to improve the health of epilepsy patients". In the three types of knowledge this topic can be reformulated as follows:

- How do visualised brain activities relate to health of epilepsy patients? (Systems knowledge)
- What is an improved health of epilepsy patients? (Target knowledge)
- How will visualisation of brain activities improve the health of epilepsy patients? (Transformation knowledge)

How are thought-styles bridged?

When applied in heterogeneous teams, the three types of knowledge tool bridges thought styles by revealing their implicit assumptions about 'good' research questions. Perhaps the reformulation reveals that the humanities researcher is interested in how the concept of a healthy brain is influenced by visualisation technologies. Whereas the medical researcher is interested in using the visualisation to improve patients' health. Uncovering the assumptions allows for finding a joint question or for harmonizing the individual questions.

What's the output/outcome?	The output is an explicit deliberation and decision on the main research question(s), on how the questions relate to each other, and more clarity about what societal knowledge demand is met. The outcome is an increased understanding of each other and of joint research interests.
Who participates in what role?	A facilitator should lead the reformulation process. Participants should feel comfortable with formulating research questions. They may encompass academic and non-academic actors with various backgrounds.
What do I need to prepare?	The reformulation requires flipcharts and marker pens. Before using the method for the first time, the facilitator should practice reformulating research questions with a few examples and make sure that s/he has understood the distinction between the three types of knowledge.
When not to use this method?	When there is no flexibility in adapting the research questions and no follow-up project is planned.
Where can I learn more?	<p>Selected references:</p> <p>The three types of knowledge were first described in:</p> <ul style="list-style-type: none"> – ProClim 1997. Research on Sustainability and Global Change - Visions in Science Policy by Swiss Researchers. Berne: CASS/SANW. <p>The different research questions the three types of knowledge relate to are briefly discussed in:</p> <ul style="list-style-type: none"> – Pohl C, Hirsch Hadorn G 2008. Methodological Challenges of Transdisciplinary Research. Natures Sciences Sociétés, V16, N2, 111-121. – Pohl C, Hirsch Hadorn G 2007. Principles for Designing Transdisciplinary Research - proposed by the Swiss Academies of Arts and Sciences. München: oekom verlag, 36-39. <p>Check the online profile on www.transdisciplinarity.ch/toolbox for updated and commented resources (e.g. most recent publications, experience reports, videos, links).</p>

Suggested citation

Pohl C 2022. Three types of knowledge tool. td-net toolbox profile (19). Swiss Academies of Arts and Sciences: td-net toolbox for co-producing knowledge. transdisciplinarity.ch/toolbox. DOI 10.5281/zenodo.7015070

SDGs: The International Sustainable Development Goals of the UN

In this publication, the Swiss Academies of Arts and Sciences make most notably a contribution to SDGs 4, 16, 17:

> sustainabledevelopment.un.org

> eda.admin.ch/agenda2030/en/home/agenda-2030/die-17-ziele-fuer-eine-nachhaltige-entwicklung.html



IMPRESSUM

PUBLISHER

Swiss Academies of Arts and Sciences (a+) • Network for Transdisciplinary Research (td-net) • www.transdisciplinarity.ch • td-net@scnat.ch • @td-net
House of Academies • Laupenstrasse 7 • P.O. Box • 3001 Bern • Switzerland

AUTHOR

Prof. Dr. Christian Pohl • ETH Zurich · Transdisciplinarity Lab (TdLab)

ACKNOWLEDGMENTS

For quality assurance of this profile, the publisher thanks the editorial board of the td-net web portal which is elected by the scientific advisory board of td-net. The web portal and its toolbox profiles were initially developed in partnership with the Transdisciplinarity Lab (TdLab), ETH Zurich, and financed by Mercator Foundation Switzerland.

This publication is part of a series of tools and methods compiled in the td-net toolbox for co-producing knowledge. All profiles are identically structured and accessible online.

