

The definitions of disciplines

A glossary of terms

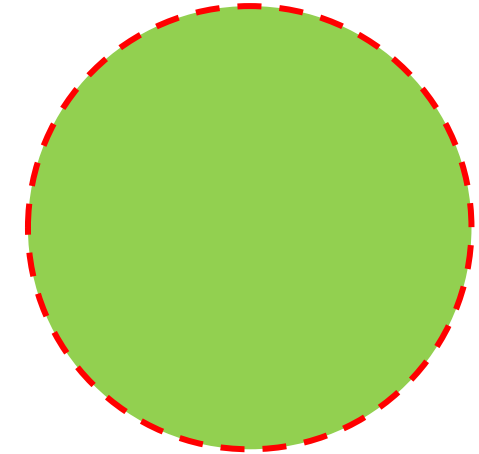
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Disciplin

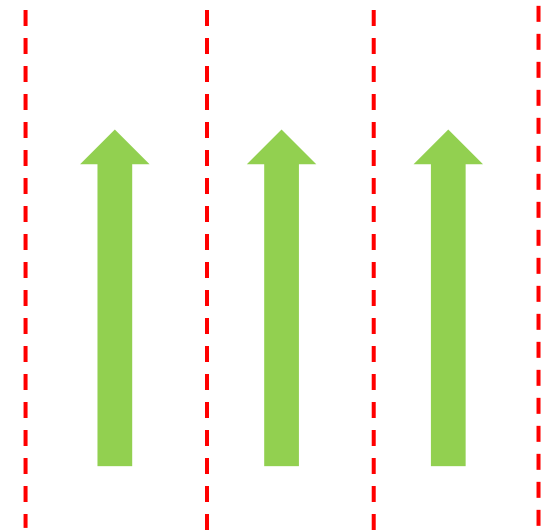
A specialization of knowledge.
common set of core metaphors and concepts defining the field of inquiry, a particular set of observational categories for structuring experience in the field, specialized methods for investigation, a specification of the means for determining the truth or justification for claims made within the field, and, perhaps most important of all, an idea of the purposes to be served in investigating the field (e.g., in physics, the desire to understand the nature of the physical world in which we find ourselves).

An organized grouping of people who study the discipline, train other practitioners, and form the social mechanism for arbitrating among varying truth claims within the discipline.”

disciplinary problems



disciplinary research



disciplinary boundaries are not crossed

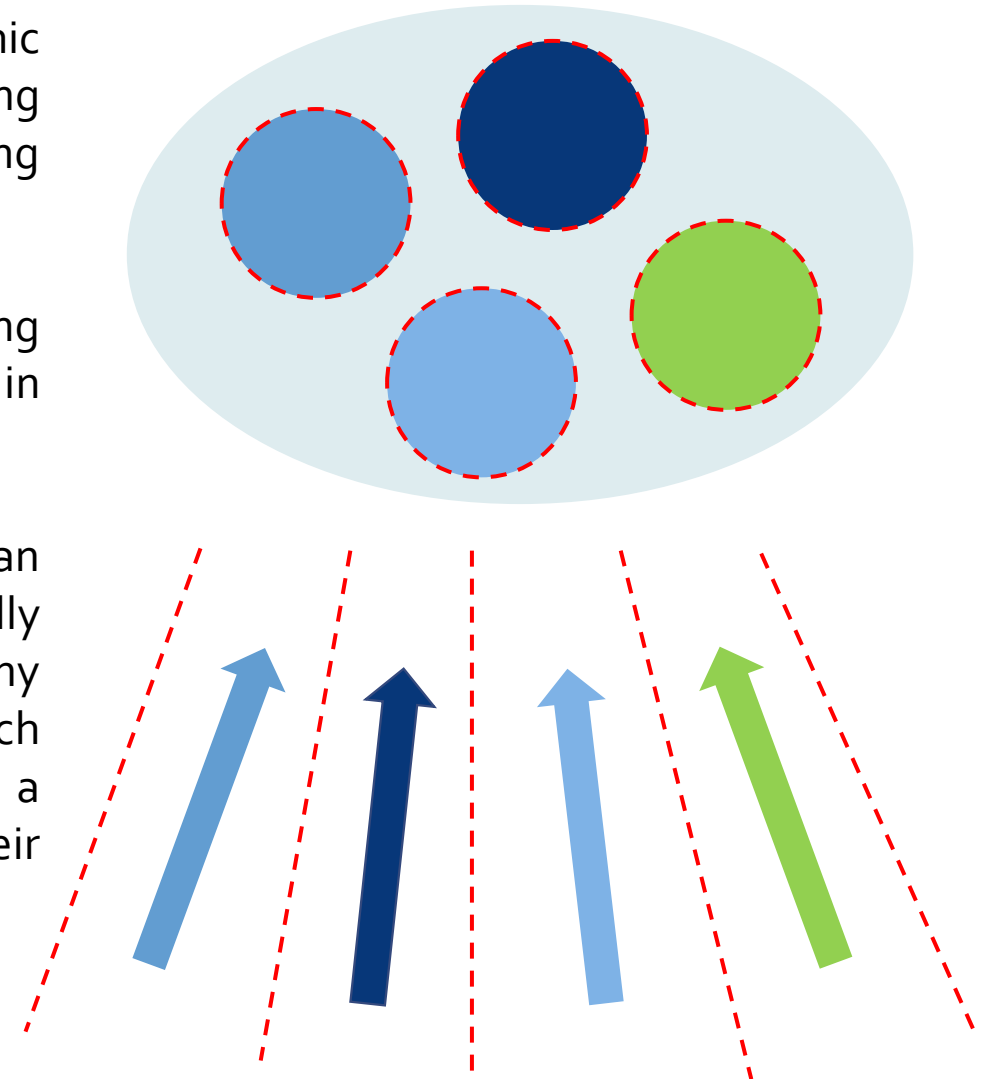
Multidisciplinarity

People from different academic disciplines and professions working together on a problem, each drawing on their disciplinary knowledge.

These people are engaged in working together as equal stakeholders in addressing a common challenge.

The effect is additive rather than integrative. The project is usually short-lived, and there is seldom any long-term change in the ways in which the disciplinary participants in a multidisciplinary project view their own work.

problems with "broad" subject of investigation



disciplinary boundaries are not crossed

Interdisciplinary

Interdisciplinary Research describes a collaboration of various disciplines by keeping their own autonomy. The research is based upon a conceptual model that links or integrates knowledge and methods from different disciplines.

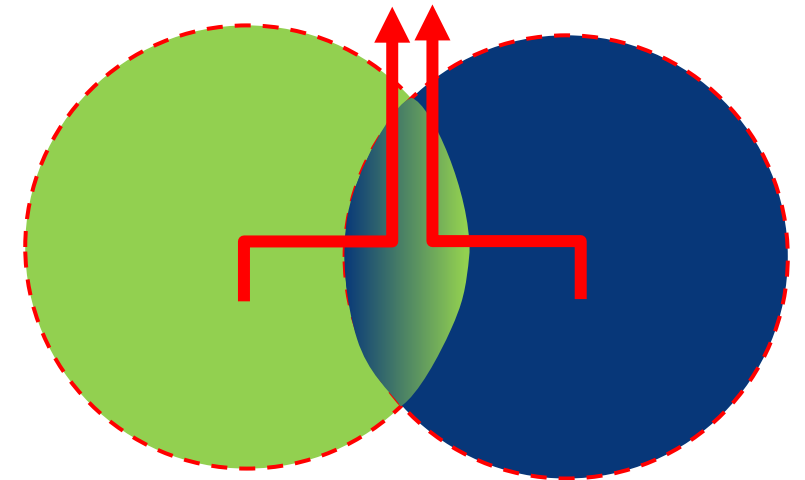
Interdisciplinary research requires the use of perspectives and skills of the involved disciplines throughout multiple phases of the research process.

Characteristic is that methodologies are not limited to any one field (example Ultrasound technology)

New knowlegde / new discipline



Solving of problems which cannot be solved by one discipline alone

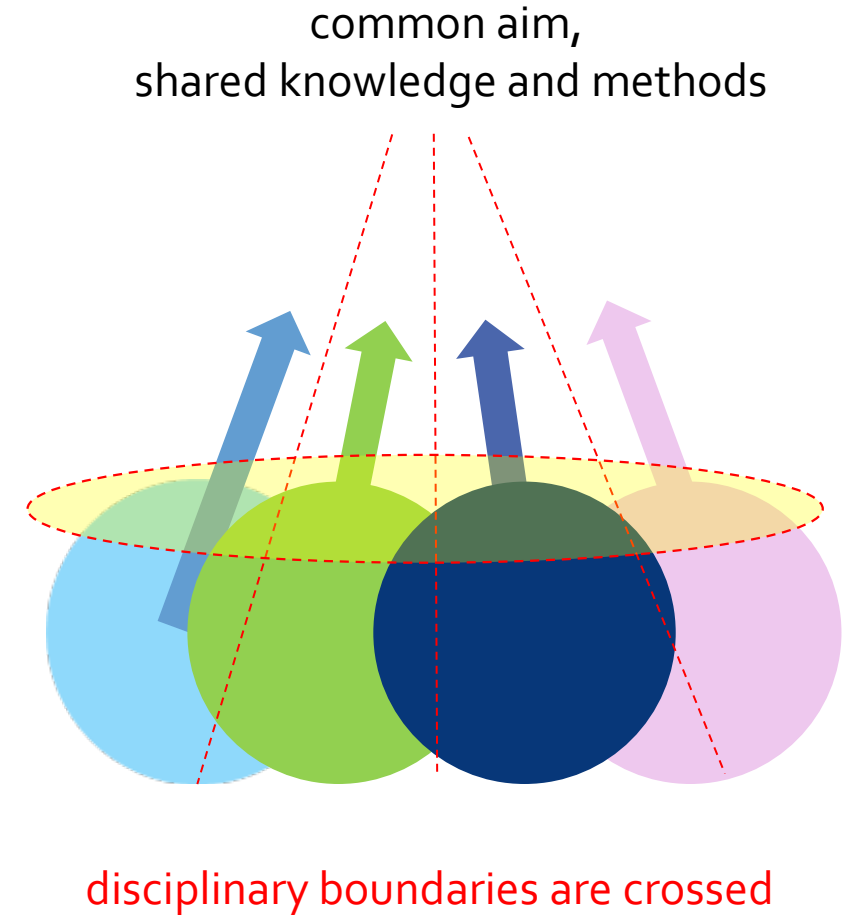


disciplinary boundaries are crossed

Transdisciplinarity

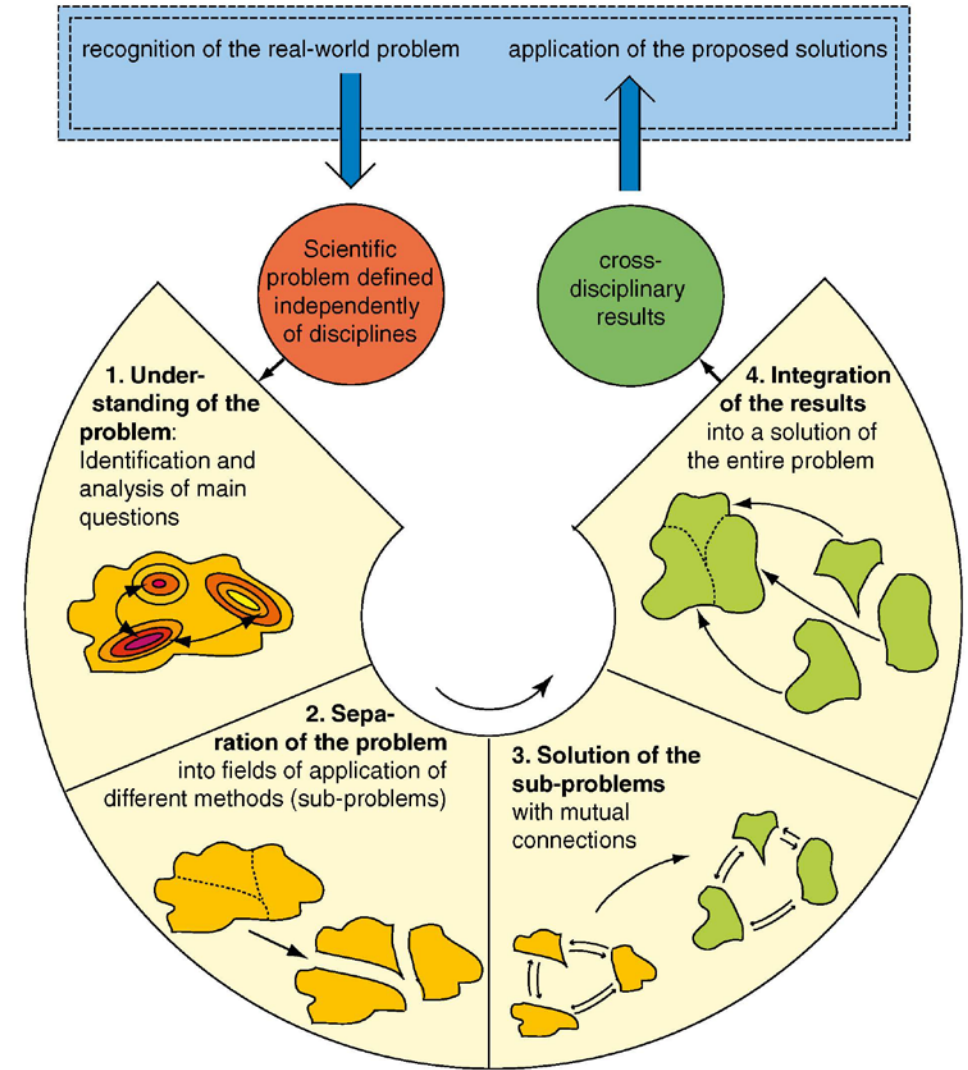
Transdisciplinarity describes a research strategy that crosses many disciplinary boundaries to create a holistic (integrated) approach. It applies to research efforts focused on problems that cross the boundaries of two or more disciplines, such as research on effective information systems for biomedical research (eg. bioinformatics) or Traditional Chinese Medicine.

Cooperation between scientists & practitioners. E.g. User involvement. A transdisciplinary approach is enabling inputs and scoping across scientific and non-scientific stakeholder communities and facilitating a systemic way of addressing a challenge.



Transdisciplinary research is always problem oriented and the research questions are derived from "real-world" problems.

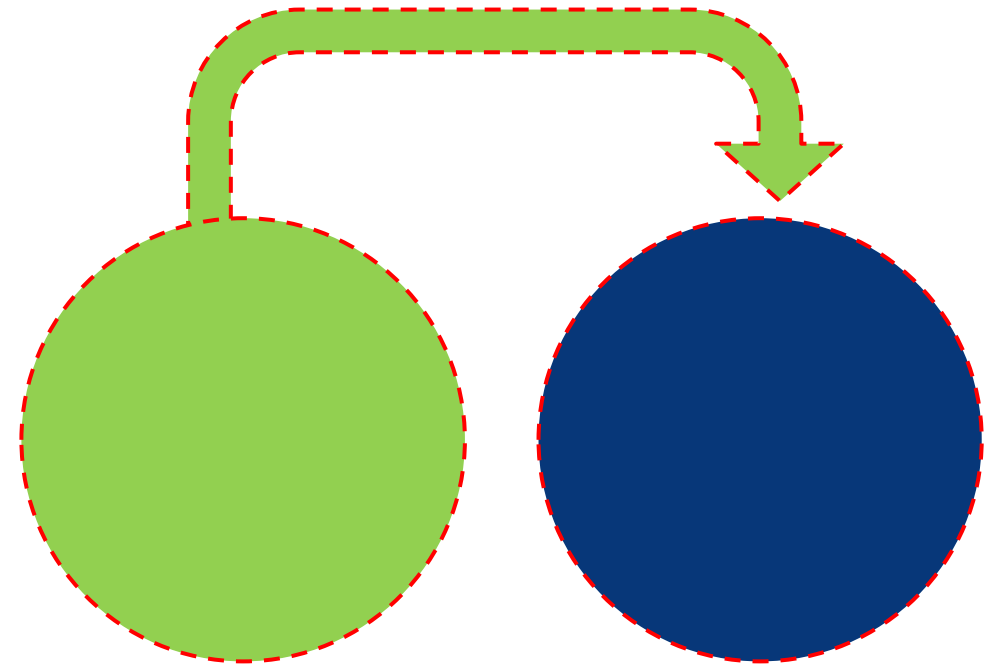
- suitable definition of sub-problems as a prerequisite for the integration of the results.
- free choice of scientific methods adequate for each of the sub-problems.
- close relations between the sub-problems for the development of an overall solution.



Cross-disciplinary

Cross-disciplinary knowledge is that which explains aspects of one discipline in terms of another. The view to a discipline from another. Any form of scientific cooperation between disciplines without further explication of shared methods, goals or mutual interest. Common examples of cross-disciplinary approaches are studies of the **physics of music** or the **politics of literature**.

Viewing one discipline from the perspective of another



disciplinary boundaries are not crossed

The difference between

*Inter-
Multi-
Trans-
Intra-
Cross-*

Disciplinarity

	shared methods / knowledge	Cross borders	integrative	Diciplinary problems	Broader problems
Disciplinary	yes	no	no	yes	no
Inter-disciplinary	yes	yes	yes	rather not	yes
Multi-disciplinary	no	no	additive	yes	rather not
Trans-disciplinary	yes	yes	yes	no	yes
Intra-disciplinary	yes	no	no	yes	no
Cross-disciplinary	no	no	no	no	yes

Disciplinarity in H2020

- **Intra-disciplinarity:** working within a single discipline
- **Cross-disciplinarity:** viewing one discipline in the perspective of another
- **Multi-disciplinarity:** people from different disciplines working together, each drawing on their disciplinary knowledge
- **Interdisciplinarity:** integrating knowledge and methods from different disciplines, using a real synthesis of approaches

EU speak: “break-down of silos of science disciplines and stimulate integration to maximize impact and generate best solutions”

- **Transdisciplinarity:** creating a unity of intellectual frameworks beyond the disciplinary perspectives

EU speak: “integrating also non-disciplinary knowledge (i.e. Science with and for Society)”

Referencies

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- Personal conversation