

## COLLECTION OF MATERIALS SUPPLEMENTARY TO THE HANDBOOK „TRANSFORMATIVE INNOVATION LAB“

In this collection of materials, you will find further links, literature and manuals according to the structured modules of the Transformative Innovation Lab in the handbook starting on page 40. The listing and collection are rather illustrative than final. It serves as a suggestion to fill the corresponding modules with appropriate contents and methods.

The full handbook can be downloaded here:

[https://epub.wupperinst.org/frontdoor/deliver/index/docId/7685/file/7685\\_TIL\\_Handbook.pdf](https://epub.wupperinst.org/frontdoor/deliver/index/docId/7685/file/7685_TIL_Handbook.pdf)

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## **FROM EDUCATION FOR SUSTAINABLE DEVELOPMENT THROUGH TRANSFORMATIVE EDUCATION TO TRANSFORMATIVE LEARNING**

Grey marked references are unfortunately only available in German.

- BMBF - Bundesministerium für Bildung und Forschung. (2017). Nationaler Aktionsplan Bildung für nachhaltige Entwicklung. BMBF.
- BPB - Bundeszentrale für politische Bildung. (2011). Beutelsbacher Konsens. BPB - Bundeszentrale für politische Bildung. <https://www.bpb.de/die-bpb/51310/beutelsbacher-konsens>
- Brock, A., de Haan, G., Etzkorn, N., & Singer-Brodowski, M. (2018). Wegmarken zur Transformation: Nationales Monitoring von Bildung für Nachhaltige Entwicklung in Deutschland. Verlag Barbara Budrich.
- Getzin, S., & Singer-Brodowski, M. (2016). Transformatives Lernen in einer Degrowth-Gesellschaft. *Socience: Journal of Science-Society Interfaces*, 1(1), 33–46. <https://doi.org/10.5167/UZH-135963>
- Leicht, A., Heiss, J., Byun, W. J., & UNESCO. (2018). Issues and trends in education for sustainable development (Vol. 5). UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000261445>
- Maack, Lisa (2018): BNE – Hürden einer Bildung für nachhaltige Entwicklung. Akteurinnen und Akteure zwischen Immanenz und Reflexivität. Bad Heilbrunn: Verlag Julius Klinkhardt. ISBN 978-3-7815-2216-9.
- Rieckmann, M. (2016). Kompetenzentwicklungsprozesse in der Bildung für nachhaltige Entwicklung erfassen – Überblick über ein heterogenes Forschungsfeld. In *Empirische Forschung zur Bildung für nachhaltige Entwicklung - Themen, Methoden und Trends* (pp. 89–109). Barbara D.
- Singer-Brodowski, M. (2016a). Transformative Bildung durch transformatives Lernen. Zur Notwendigkeit der erziehungswissenschaftlichen Fundierung einer neuen Idee. *ZEP: Zeitschrift Für Internationale Bildungsforschung Und Entwicklungspädagogik*, 39(1), 13–17. <http://nbn-resolving.org/urn:nbn:de:0111-pedocs-154432>
- Singer-Brodowski, M. (2016b). Transformatives Lernen als neue Theorie-Perspektive in der BNE. *Jahrbuch BNE*.
- Singer-Brodowski, Mandy; Etzkorn, Nadine; Grapentin-Rimek, Theresa (2019): Pfade der Transformation. Die Verbreitung von Bildung für nachhaltige Entwicklung im deutschen Bildungssystem. Opladen/Berlin/Toronto: Verlag Barbara Budrich. ISBN 978-3-8474-2250-1, eISBN 978-3-8474-1322-6.
- UN - Vereinte Nationen. (2015). Nagoya Declaration in Higher Education for Sustainable Development. <https://sustainabledevelopment.un.org/content/documents/5864Declaration%20-%20Higher%20Education%20for%20Sustainable%20Development%20Nagoya%202014.pdf>

## **ORGANISATION AND PROCESSES OF TRANSDISCIPLINARY RESEARCH**

- (Basic information on transdisciplinary research) Lang, D.J., Wiek, A., Bergmann, M. et al. (2012): Transdisciplinary research in sustainability science: practice, principles, and challenges 7(Suppl 1): 25. <https://doi.org/10.1007/s11625-011-0149-x>.
- (Numerous good questions along the various steps) Scholz, R. W., & Steiner, G. (2015). The Real Type and Ideal Type of Transdisciplinary Processes: Part II - What Constraints and Obstacles Do We Meet in Practice? *Sustainability Science*, 10(4), 653–671. <https://doi.org/10.1007/s11625-015-0327-3>
- (Easy-to-use 10-point paper for starting transdisciplinary research projects) Pohl, C., Krütli, P., & Stauffacher, M. (2017). Ten Reflective Steps for Rendering Research Societally Relevant. *GAIA - Ecological Perspectives for Science and Society*, 26(1), 43–51. <https://doi.org/10.14512/gaia.26.1.10>

- (Classic transdisciplinary case study) Scholz, R. W., Lang, D. J., Wiek, A., Walter, A. I., & Stauffacher, M. (2006). Transdisciplinary case studies as a means of sustainability learning: historical framework and theory. *International Journal of Sustainability in Higher Education*, 7(3), 226–251. <https://doi.org/10.1108/14676370610677829>
- Extensive TD method collection: <https://naturalsciences.ch/co-producing-knowledge-explained/methods>
- (Intersection between TD and real-world laboratories) Defila, Rico; Giulio Di, Antonietta (Hrsg.) (2018). *Transdisziplinär und transformativ forschen. Eine Methodensammlung*. Basel: Springer VS. ISBN 978-3-658-21529-3; ISBN 978-3-658-21530-9 (B-book), <https://doi.org/10.1007/978-3-658-21530-9>.
- Defila, Rico; Giulio Di, Antonietta (Hrsg.) (2019). *Transdisziplinär und transformativ forschen, Band 2. Eine Methodensammlung*. Basel: Springer VS. ISBN 978-3-658-27134-3; ISBN 978-3-658-27135-0 (B-book), <https://doi.org/10.1007/978-3-658-27135-0>.

#### **BACKGROUND TEXTS ON TRANSFORMATIVE RESEARCH AND SCIENCE**

- (An important source of the discussion) WBGU - German Advisory Council on Global Change. (2011). *World in Transition – A Social Contract for Sustainability*. WBGU.
- WBGU – German Advisory Council on Global Change. (2016). *Humanity on the move: Unlocking the transformative power of cities*. WBGU.
- Schneidewind, U., & Scheck, H. (2013). Die Stadt als „Reallabor“ für Systeminnovationen. In J. Rückert-John (Ed.), *Soziale Innovation und Nachhaltigkeit* (pp. 229–248). Springer Fachmedien.
- Schneidewind, U., & Singer-Brodowski, M. (2014). *Transformative Wissenschaft: Klimawandel im deutschen Wissenschafts- und Hochschulsystem* (2., verb. und aktualisierte Aufl). Metropolis-Verl.
- Schneidewind, U., Singer-Brodowski, M., Augenstein, K., & Stelzer, F. (2016). Pledge for a transformative science: A conceptual framework. *Wuppertal papers*. <http://nbn-resolving.de/urn:nbn:de:bsz:wup4-opus-64142>
- Singer-Brodowski, M., Wanner, M., & Schneidewind, U. (2018). Real-world laboratories as an institutionalisation of the new social contract between science and society. In M. Padmanabhan (Ed.), *Transdisciplinary Research and Sustainability*. Routledge.
- (On the ethics of transformative research): Meisch, S. (2019). *Der transformative Forschungsansatz des Institute for Advanced Sustainability Studies (IASS)*. IASS Discussion Paper. <https://doi.org/10.2312/iass.2019.044>.

#### **REAL-WORLD LABORATORIES: DEFINITIONS, PROCESS, STRUCTURE (TRANSDISCIPLINARY AND EXPLICITLY TRANSFORMATIVE RESEARCH)**

- Parodi, O., Beecroft, R., Albiez, M., Quint, A., Seebacher, A., Tamm, K., & Waitz, C. (2016). Von 'Aktionsforschung' bis 'Zielkonflikte'. *Schlüsselbegriffe der Reallaborforschung*. Institut für Technikfolgenabschätzung und Systemanalyse (ITAS). <https://doi.org/10.14512/tatup.25.3.9>
- (Overview) Rose, M., Wanner, M., & Hilger, A. (2019). Das Reallabor als Forschungsprozess und -infrastruktur für nachhaltige Entwicklung. *Wuppertal Papers*, 196, 38. <https://epub.wupperinst.org/frontdoor/deliver/index/docId/7433/file/WP196.pdf>
- (Overview) Schöpke, N., Stelzer, F., Caniglia, G., Bergmann, M., Wanner, M., Singer-Brodowski, M., Loorbach, D., Olsson, P., Baedeker, C., & Lang, D. J. (2018). Jointly Experimenting for Transformation? Shaping Real-World Laboratories by Comparing Them. *GAIA - Ecological Perspectives for Science and Society*, 27(S1), 85–96. <https://doi.org/10.14512/gaia.27.S1.16>
- (Concept for a transdisciplinary and transformative real-world lab process) Wanner, M., Hilger, A., Westerkowski, J., Rose, M., Stelzer, F., & Schöpke, N. (2018). *Towards a Cyclical Concept of Real-world Laboratories: A Transdisciplinary Research Practice for*

Sustainability Transitions. DisP - The Planning Review, 54(2), 94–114.

<https://doi.org/10.1080/02513625.2018.1487651>

- (Scientific framework) Wanner, M., & Stelzer, F. (2019). Reallabore - Perspektiven für ein Forschungsformat im Aufwind. In Brief - Wuppertaler Impulse Zur Nachhaltigkeit, 7. [https://epub.wupperinst.org/frontdoor/deliver/index/docId/7360/file/7360\\_Reallabore.pdf](https://epub.wupperinst.org/frontdoor/deliver/index/docId/7360/file/7360_Reallabore.pdf)
- (Overview and demands for real-world lab support) Wagner, F., & Grunwald, A. (2019). Reallabore zwischen Beliebtheit und Beliebtheit: Eine Bestandsaufnahme des transformativen Formats. *GAIA - Ecological Perspectives for Science and Society*, 28(3), 260–264. <https://doi.org/10.14512/gaia.28.3.5>.

## **FUTURES STUDIES AND ITS CONTRIBUTIONS TO TRANSFORMATIVE RESEARCH**

Basic overview of the field of Futures Studies

- Bell, Wendel (2009): Foundations of Futures Studies. History, Purposes, and Knowledge. Volume 1 and 2. Transac: on Publ.: New Brunswick.
- Gidley, Jennifer M. (2017): The Future. A very short introduction. Oxford University Press.
- Grunwald, A. (2009). Wovon ist die Zukunftsforschung eine Wissenschaft? In R. Popp & E. Schüll (Eds.), *Zukunftsforschung und Zukunftsgestaltung* (pp. 25–35). Springer Berlin Heidelberg. [https://doi.org/10.1007/978-3-540-78564-4\\_3](https://doi.org/10.1007/978-3-540-78564-4_3)
- Grunwald, A. (2014). Modes of orientation provided by futures studies: making sense of diversity and divergence. *European Journal of Futures Research*, 2(1). <https://doi.org/10.1007/s40309-013-0030-5>
- de Haan G. (2012) Der Masterstudiengang „Zukunftsforschung“ an der Freien Universität Berlin: Genese und Kontext. In: Popp R. (eds) *Zukunft und Wissenschaft. Zukunft und Wissenschaft*. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-642-28954-5\\_2](https://doi.org/10.1007/978-3-642-28954-5_2)

Direct references to transformative approaches:

- Ramos, J. (2017). Linking foresight and action: Toward a futures action research. In *The Palgrave international handbook of action research* (pp. 823–842). Springer.
- Candy, Stuart & Dunagan, Jake (2017): „Designing an Experiential Scenario: The People Who Vanished“ in *Futures* 86, p. 136-153 <https://doi.org/10.1016/j.futures.2016.05.006>
- Suggestions for smaller exercises and units to integrate 'Futures Thinking: Playbook of TeachTheFuture: <http://www.teachthefuture.org/new-page>

## **GUIDELINES FOR EXPERIMENTAL SETTINGS AND REAL-WORLD LABORATORY SITUATIONES**

- Westley, F. R., & Laban, S. (n.d.). Social innovation lab guide. University of Waterloo. [https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/sites/ca.waterloo-institute-for-social-innovation-and-resilience/files/uploads/files/10\\_silabguide\\_final.pdf](https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/sites/ca.waterloo-institute-for-social-innovation-and-resilience/files/uploads/files/10_silabguide_final.pdf)
- Transition Training (Transition Town Movement): <https://transitionnetwork.org/do-transition/training/>
- Impact Hub Network: <https://impacthub.net/programs/>
- Re.imagining Activism Toolkit: <https://smart-csos.org/tools-publications/toolkit-for-civil-society-activists>
- Transition Design Guide - Design für Nachhaltigkeit: Ein Guide für Gestaltung und Entwicklung in Unternehmen, Städten und Quartieren, Forschung und Lehre (2020) [https://epub.wupperinst.org/frontdoor/deliver/index/docId/7567/file/WS55\\_2ed.pdf](https://epub.wupperinst.org/frontdoor/deliver/index/docId/7567/file/WS55_2ed.pdf)
- Wuppertal Institute designguide : background information & tools (2013) <https://epub.wupperinst.org/frontdoor/index/index/docId/4893>

## SELF-REFLEXION, STRESS MANAGEMENT AND EMOTIONAL COPING

- e.g. with exercises from deep ecology: Macy, J., & Brown, M. Y. (1998). *Coming back to life: Practices to reconnect our lives, our world*. New Society Publishers Gabriola Island, BC (among others)
- Using "participatory video" to reflect on one's own points of view and to consider need for action or similar [https://en.wikipedia.org/wiki/Participatory\\_video](https://en.wikipedia.org/wiki/Participatory_video)
- Hunecke, M. (2013). *Psychologie der Nachhaltigkeit: psychische Ressourcen für Postwachstumsgesellschaften*. oekom-Verl.
- Kaluza, G. (2018). *Gelassen und sicher im Stress*. Springer Berlin Heidelberg. <https://doi.org/10.1007/978-3-662-55986-4> (there are also many of the exercises and tests online)
- Collection of Warm-Ups, e.g. <https://www.workshop-spiele.de/warm-ups-fuer-erwachsene-finden/>; otherwise also search the Internet with the game titles from the schedules (see <https://www.transformative-innovation-lab.de/en/handbuch/>)

## 1. UNDERSTANDING THE RESEARCH CONTEXT

- see above: basic information on transdisciplinary and transformative research, real-world laboratories and futures research

## SUSTAINABLE DEVELOPMENT AND SUSTAINABLE DEVELOPMENT GOALS

- Official Website: <https://sustainabledevelopment.un.org/>
- Website of the Federal Ministry of Education and Research (BMBF) on Education for Sustainable Development and the National Action Plan - Education for Sustainable Development 2030 In English: <https://www.bne-portal.de/en/index.html> <https://www.bne-portal.de/de/bildung-fuer-nachhaltige-entwicklung-bis-2030-1718.html>. (German)
- Website of the Federal Government on sustainability policy - global sustainability goals - explained in a comprehensible way, Germany's national sustainability strategies and their updates, indicator reports, etc. <https://www.bundesregierung.de/breg-en/issues/sustainability> Webseite der Bundesregierung zur Nachhaltigkeitspolitik – Globale Nachhaltigkeitsziele – verständlich erklärt, Nachhaltigkeitsstrategien und ihre Fortschreibungen, Indikatorenberichte u.a.: <https://www.bundesregierung.de/breg-de/themen/nachhaltigkeitspolitik/nachhaltigkeitsziele-verstaendlich-erklaert-232174>.
- An application perspective using the example of Mecklenburg-Vorpommern [https://www.nachhaltigkeitsforum.de/fileadmin/user\\_upload/pdfs/SDGs/SDG-Notizen\\_ANE-Boell-RENN\\_2019\\_Doppelseiten.pdf](https://www.nachhaltigkeitsforum.de/fileadmin/user_upload/pdfs/SDGs/SDG-Notizen_ANE-Boell-RENN_2019_Doppelseiten.pdf)
- Company-Check: Von Geibler, J., Piwowar, J., Greven, A. (2019): The SDG-Check: Guiding Open Innovation towards Sustainable Development Goals, *Technology Innovation Management Review* March 2019, 9:3 <https://timreview.ca/article/1222>
- "My Ecological Backpack"-Calculator of the Wuppertal Institut: In English: <https://www.ressourcen-rechner.de/?lang=en>
- WBGU publications and recommendations (German Advisory Council on Global Change) <https://www.wbgu.de/en/publications/all-publications> (also in comic formats and with videos)
- (Highly aggregated presentations of sustainability challenges) Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., & Ludwig, C. (2015). The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, 2(1), 81–98. <https://doi.org/10.1177/2053019614564785>
- Steffen, W., Richardson, K., Rockstrom, J., Cornell, S. E., Fetzer, I., Bennett, E. M., Biggs, R., Carpenter, S. R., de Vries, W., de Wit, C. A., Folke, C., Gerten, D., Heinke, J., Mace, G. M., Persson, L. M., Ramanathan, V., Reyers, B., & Sorlin, S. (2015). Planetary boundaries: Guiding

human development on a changing planet. *Science*, 347(6223), 1259855–1259855.  
<https://doi.org/10.1126/science.1259855>

- Kate Raworths Doughnut Economics: <https://doughnuteconomics.org/>
- Liedtke, Christa Prof. Dr.; Welfens, Maria J. Dr.; Fink, Hanna (2016) Crashkurs Nachhaltigkeit. Eine multimediale Übersicht. Wuppertal: Wuppertal Institut für Klima, Umwelt, Energie gGmbH. Oktober 2016.  
[https://wupperinst.org/fa/redaktion/downloads/projects/CoR\\_Crashkurs\\_Nachhaltigkeit.pdf](https://wupperinst.org/fa/redaktion/downloads/projects/CoR_Crashkurs_Nachhaltigkeit.pdf)
- United Nations Development Programme (UNDP). Covid-19 and the SDGs. How the 2roadmap for humanity“ could be changed by a pandemic. [https://feature.undp.org/covid-19-and-the-sdgs/?utm\\_source=web&utm\\_medium=sdgs&utm\\_campaign=covid19-sdgs](https://feature.undp.org/covid-19-and-the-sdgs/?utm_source=web&utm_medium=sdgs&utm_campaign=covid19-sdgs).

#### PLAYFULLY EXPLORING COMPLEXITY

- Simulation “The World’s Future” (used in the Transformative Innovation Lab)  
<https://worldsfuture.socialsimulations.org/>
- Circular economy - strategy business game: Promotion of entrepreneurial understanding and knowledge about raw material challenges in schools through serious gaming  
<https://ecoceo.vito.be/en>
- Collection of simulation games: <https://www.umweltschulen.de/agenda/simulationsspiele-zur-bildung-fuer-nachhaltige-entwicklung.html>, e.g.
  - Keep Cool: a board game about climate change (Potsdam Institute for climate impact research)
  - Fishbanks Ltd; a role-plaxing board game based on the scenarios of Meadows
  - ecopolicy®: a classic by Frederic Vester, available as a board game and as a computer-based game
  - and much more
- Sustain2030 <https://icondu.de/sustain2030-sdg-simulation-game-deutschland-2/>
- 2030 SDGs Game: <https://2030sdgsgame.com/2030-sdgs-game/>

## 2. STARTING AN OWN RESEARCH PROJECT

- see above: basic information on transdisciplinary research, charts of real-world laboratory processes, action research and futures research
- Design Thinking for the development of ideas. <https://designthinking.ideo.com/>
- (On the ethics of transformative research): Meisch, S. (2019). Der transformative Forschungsansatz des Institute for Advanced Sustainability Studies (IASS). IASS Discussion Paper. <https://doi.org/10.2312/iass.2019.044>
- Structuring, visualization & storytelling of projects using „Canvas“  
<https://www.openpm.info/display/openPM/Canvas>

## 3. GETTING TOGETHER WITH PRACTITIONERS

#### REFLECTING ONE’S OWN ROLE IN REAL-WORLD LABORATORY RESEARCH

- Hilger, A., Rose, M., & Wanner, M. (2018). Changing Faces – Factors Influencing the Roles of Researchers in Real-world Laboratories. *GAIA - Ecological Perspectives for Science and Society*, 27(1), 138–145. <https://doi.org/10.14512/gaia.27.1.9>
- Pohl, C., Rist, S., Zimmermann, A., Fry, P., Gurung, G. S., Schneider, F., Speranza, C. I., Kiteme, B., Boillat, S., Serrano, E., Hadorn, G. H., & Wiesmann, U. (2010). Researchers’ Roles in Knowledge Co-production: Experience from Sustainability Research in Kenya, Switzerland,

Bolivia and Nepal. *Science and Public Policy*, 37(4), 267–281.

<https://doi.org/10.3152/030234210X496628>

- Scholz, R. W. (2017). The Normative Dimension in Transdisciplinarity, Transition Management, and Transformation Sciences: New Roles of Science and Universities in Sustainable Transitioning. *DisP - The Planning Review*, Special Issue on Transformative Research and Development in Urban and Regional Environments. <https://doi.org/10.3390/su9060991>
- Wittmayer, J. M., Avelino, F., van Steenberghe, F., & Loorbach, D. (2017). Actor Roles in Transition: Insights from Sociological Perspectives. *Environmental Innovation and Societal Transitions*, 24, 45–56. <https://doi.org/10.1016/j.eist.2016.10.003>

#### METHODICAL APPROACHES AND EXAMPLES OF CO-DESIGN

- Collection of transdisciplinary methods for the co-design phases <https://naturalsciences.ch/co-producing-knowledge-explained/methods/phases>
- Methods for "problem constitution" <https://td-academy.org/problemkonstitution> and "participation" <https://td-academy.org/partizipation> (free registration required)
- Backcasting: Löchtfeld S. (2009) Backcasting – Ein Instrument zur Zukunftsgestaltung. In: Rietmann S., Hensen G. (eds) *Werkstattbuch Familienzentrum*. VS Verlag für Sozialwissenschaften. [https://doi.org/10.1007/978-3-531-91640-8\\_9](https://doi.org/10.1007/978-3-531-91640-8_9)
- Haslauer E., Strobl J. (2016) GIS-basiertes Backcasting: Ein Instrument zur effektiven Raumplanung und für ein nachhaltiges Ressourcenmanagement. In: Bachleitner R., Weichbold M., Pausch M. (eds) *Empirische Prognoseverfahren in den Sozialwissenschaften. Zukunft und Forschung*, vol 5. Springer VS, Wiesbaden. [https://doi.org/10.1007/978-3-658-11932-4\\_12](https://doi.org/10.1007/978-3-658-11932-4_12)
- Larsson, J., & Holmberg, J. (2018). Learning while creating value for sustainability transitions: The case of Challenge Lab at Chalmers University of Technology. *Journal of Cleaner Production*, 172, 4411–4420. <https://doi.org/10.1016/j.jclepro.2017.03.072>
- Constellation Analysis
  - Schön, S., Kruse, S., Meister, M., Nölting, B., & Ohlhorst, D. (2007). *Handbuch Konstellationsanalyse: ein interdisziplinäres Brückenkonzept für die Nachhaltigkeits-, Technik- und Innovationsforschung*. Oekom.
  - Schön, S., Nölting, B., & Meister, M. (2004). *Konstellationsanalyse. Ein interdisziplinäres Brückenkonzept für die Technik-, Nachhaltigkeits- und Innovationsforschung*. Zentrum Technik Und Gesellschaft. Technische Universität Berlin. Berlin; Juni 2004, 12/04. [http://www.tu-berlin.de/fileadmin/f27/PDFs/Discussion\\_Papers/Konstellationsana.pdf](http://www.tu-berlin.de/fileadmin/f27/PDFs/Discussion_Papers/Konstellationsana.pdf)
- Problem- and Actor mapping z.B. Zimmermann, Artur (2006): *Instrumente zur AkteursAnalyse. 10 Bausteine für die partizipative Gestaltung von Kooperationssystemen*. Hrsg: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. Eschborn. <http://star-www.giz.de/dokumente/bib/06-0488.pdf>

#### 4. PLANNING AND EXECUTING REAL-WORLD EXPERIMENTS

- Methods for the integration of knowledge <https://td-academy.org/wissensintegration>
- Cyclical ideas of action - reflection - adaptation: Kemmis, S., & McTaggart, R. (2000). *Participatory action research*. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed). Sage Publications.
- Transition Design Guide - Design für Nachhaltigkeit: Ein Guide für Gestaltung und Entwicklung in Unternehmen, Städten und Quartieren, Forschung und Lehre [https://epub.wupperinst.org/frontdoor/deliver/index/docId/7567/file/WS55\\_2ed.pdf](https://epub.wupperinst.org/frontdoor/deliver/index/docId/7567/file/WS55_2ed.pdf)
- Structuring, visualization & storytelling of projects using „Canvas“ <https://www.openpm.info/display/openPM/Canvas>

## 5. EVALUATING RESULTS

### EVALUATION APPROACHES

- Collection of methods : <https://naturalsciences.ch/co-producing-knowledge-explained/methods/phases>
- Bergmann, M., Brohmann, B., Hoffmann, E., Loibl, M. C., Rehaag, R., Schramm, E., & Voß, J.-P. (2005). Qualitätskriterien transdisziplinärer Forschung. Ein Leitfaden für die formative Evaluation von Forschungsprojekten. ISOE-Studientexte Nr. 13. [https://www.researchgate.net/publication/308914652\\_Qualitätskriterien\\_transdisziplinärer\\_Forschung](https://www.researchgate.net/publication/308914652_Qualitätskriterien_transdisziplinärer_Forschung)
- Carew, A. L., & Wickson, F. (2010). The TD Wheel: A heuristic to shape, support and evaluate transdisciplinary research. *Futures*, 42(10), 1146–1155. <https://doi.org/10.1016/j.futures.2010.04.025>
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