Transdisciplinary Research Quality Assessment Framework

A Practical Tool for Planning, Implementing, Monitoring, and Evaluating Change-oriented Research

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What is the Quality Assessment Framework (QAF)?

The QAF provides a set of guiding principles and criteria to consider when planning, implementing, monitoring, and assessing transdisciplinary research. The QAF was developed from a systematic literature review (see Belcher et al., 2016[1]). This version improves upon the original QAF prototype based on applied testing in case studies.

What is it used for?

The QAF helps to guide research projects or programs aiming for impact, highlighting critical elements of transdisciplinarity that support successful research design and implementation. The tool can be used for research project and program **design**, **monitoring**, and **evaluation** to support learning and research effectiveness.

Why should I use it?

Use of this tool will help make research project or program design, implementation, and outputs more *relevant*, *credible, legitimate*, and better *positioned for use* by:

- Encouraging holistic and in-depth understanding of the problem context;
- Ensuring project/program alignment with conventional academic standards of research quality;
- Facilitating the integration of diverse perspectives and opportunities for a genuine collaborative research process, while ensuring transparency and ethical conduct ;
- Identifying opportunities to build knowledge, skills, and relationships for and influence the attitudes and behaviours of stakeholders of the project or program; and
- Tailoring outputs for uptake and use in the respective research/program context and beyond.

When used in planning, the QAF guides thinking for more intentional research project or program design and implementation. As a monitoring tool, the QAF supports adaptive management by prompting reflection on the extent of criteria fulfillment and opportunities to satisfy unmet criteria. When used for *ex post* assessment, the QAF provides a comprehensive set of research quality criteria upon which to evaluate research project or program design, implementation, and results. *Ex post* assessments can be useful analytics when comparing across cases to determine the extent of project or program transdisciplinarity.

How do I apply it?

In research planning, the QAF acts as a checklist to consider how to integrate transdisciplinary design and implementation elements into the project/program.

Evaluators can score how well a project/program satisfies each criterion against its purpose using a three-point Likert scale (0–2). A four-point scale can provide more precision to differentiate a strong 1 and weak 1.

Scoring with a Likert Scale

2	criterion is fully satisfied
1	criterion is partially satisfied
0	criterion is not at all satisfied

Overview of Principle and Criteria Definitions

Relevance — The importance, significance, and usefulness of the research problem(s), objectives, processes, and findings to the problem context.

- **Clearly defined problem context:** The context is well defined, described, and analyzed sufficiently to identify a research problem and corresponding entry points.
- **Socially relevant research problem:** The research problem is well defined and described, and considers application to the problem context and current academic discourse.
- **Engagement with the problem context:** Researchers demonstrate appropriate breadth and depth of understanding of and sufficient interaction with the problem context.
- **Explicit Theory of Change:** The research explicitly identifies its main intended outcomes, how they are expected to be realized, and how they are expected to contribute to longer term outcomes and impacts.
- **Relevance research objectives and design:** The research objectives are appropriate to the research problem, and the research design is aligned with the objectives.
- **Effective communication:** Communication during and after the research process is appropriate to the context and accessible to stakeholders, users, and other intended audiences.

1. Belcher, B. M., Rasmussen, K. E., Kemshaw, M. R., & Zornes, D. A. (2016). Defining and assessing research quality in a transdisciplinary context. *Research Evaluation, 25*(1): 1-17. https://doi.org/10.1093/reseval/rvv025

Credibility

The research findings are robust and the sources of knowledge are dependable. This includes clear demonstration of the adequacy of data and methods used to procure the results, including clearly presented and logical interpretation of findings.

- **Broad preparation:** The research is based on a strong integrated theoretical and empirical foundation.
- **Clear research problem definition:** The research problem is clearly stated and defined, researchable, and grounded in the academic literature and problem context.
- **Clear research question:** The research question(s) is clearly stated and defined, researchable, and justified as an appropriate way to address the research problem.
- **Comprehensive objectives:** Research objectives are clearly stated and sufficient to answer the research question(s).
- **Feasible research project:** The research design and resources are appropriate and sufficient to meet the objectives as stated, and adequately resilient to adapt to unexpected opportunities and challenges throughout the research process.
- **Adequate competencies:** The skills and competencies of the researcher(s), team, or collaboration (including academic and societal actors) are sufficient and in appropriate balance (without unnecessary complexity) to succeed.
- **Appropriate research framework:** Disciplines, perspectives, epistemologies, approaches, and theories are combined and/or integrated to meet stated objectives and answer the research question(s).
- **Appropriate methods:** Methods are fit to purpose and well suited to achieve the objectives and answer the research question(s).
- **Sound argument:** The logic from analysis through interpretation to conclusions is clearly described. Sufficient evidence is provided to clearly demonstrate the relationship between evidence and conclusions.
- **Transferability and/or generalizability of research findings:** The degree to which the research findings are applicable in other contexts is assessed and discussed. In cases that are too context-specific to be generalizable, aspects of the research process or findings that may be transferable to other contexts and/or used as learning cases are discussed.
- **Limitations stated:** An explanation is given regarding how the characteristics of the research design or method may have influence on the results or conclusions.
- **Ongoing monitoring and reflexivity:** Researchers engage in ongoing reflection and adaptation of the research process, making changes as new obstacles, opportunities, circumstances, and/or knowledge surface.

Legitimacy

The research process is perceived as fair and ethical. This encompasses the ethical and fair representation of all involved and the appropriate and genuine inclusion of diverse participants, values, interests, and perspectives.

- **Disclosure of perspective:** Actual, perceived, and potential bias is clearly stated and accounted for.
- **Effective collaboration:** Individuals involved in the research process pool their knowledge, experience, and skills together in a constructive atmosphere and in appropriate measure to produce new knowledge and/or social processes that contribute to a common goal.
- **Genuine and explicit inclusion:** The research offers authentic opportunities to involve relevant actors to share their perspectives, knowledge, and values, and/or participate in the research process.
- **Research is ethical:** The research adheres to standards of ethical conduct.

Positioning for Use

The research process is designed and managed to enhance sharing, uptake, and use of research outputs and stimulates actions that address the problem and contribute to solutions.

- **Strategic engagement:** The research process stimulates and/or engages with change opportunities.
- **New knowledge contribution:** The research generates new knowledge and understanding in academic and social realms in a timely, relevant, and significant way.
- **Influencing attitudes:** The research process and/or findings stimulates and supports system actors to reflect on and/or change their attitudes or perspectives on the problem and solutions to address it.
- **Capabilities:** System actors develop skills relevant to the problem context and/or skills to solve the social problem through the research process and/or findings.
- **Relationship-building:** The research process supports new or fortifies existing relationships, networks, and ways of working for solution-building in the problem context.
- **Practical application:** The findings, process, and/or products of research have high potential for use by system actors.
- **Significant results:** The research contributes to the solution of the targeted problem or provides unexpected solutions to other problems.

More detailed guidance on the criteria can be found in the following resource: https://bit.ly/QAFdefinitions

Questions? E-mail us. **Want to learn more?** Please visit our website: https://researcheffectiveness.ca