

Open Synthesis Working Group

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Proposal and principles

We propose that a voluntary, cross-disciplinary group be established to discuss the acceptability, feasibility, barriers, facilitators and practicalities of Open Synthesis (<https://doi.org/10.1186/s13750-018-0140-4>): making data, methods, code, software, publications, education and peer-review freely accessible to all by authors and journals. This is in accordance with the growing Open Science movement that postulates that:

- research should involve transparent and reproducible methods (Open Methods),
- data should be made freely accessible for others to reuse and analyse (Open Data),
- code, models and tools used to analyse data should be made freely accessible for analysis and adaptation (Open Source)
- publications (i.e. articles) associated with a research study should be made freely accessible immediately upon publication (Open Access)
- opportunity to contribute to a research project should be open to researchers who meet minimum qualifications and are willing to make significant contributions (Open Collaboration)
- drafts, revisions and peer-review/editorial comments and responses should be published alongside final research articles (Open Peer-review)
- education materials should be made freely accessible to the public (Open Education)

We do not attempt to assign responsibility for these Open Science principles to any particular actor in the system, but it is implicit that authors are primarily responsible for ensuring their outputs conform to Open Science principles. Other stakeholders can facilitate this process, however, including: platforms for hosting Open Science materials; funders' policies to ensure Open Science; publisher support for Open Science; Institutional support for Open Science outputs (especially where income generation is emphasised).

Open Synthesis would involve the evidence synthesis community (i.e. review authors, editors, peer-reviewers, publishers, methodologists) embracing the above Open Science principles and has been proposed to have a range of benefits, including that it would:

1. Allow full transparency, providing a framework for ensuring and policing transparent approaches within reviews (see the central tenets of Open Science, above);
2. Permit verification of the results and conclusions of a review to maximise accountability;
3. Increase the reliability of evidence syntheses by improving trust in their methods and findings, and in turn trust in publishers of evidence syntheses (e.g. Cochrane);
4. Decrease the imbalance of access to resources between High and Low & Middle-Income Countries and thus ensure global and transnational access to information;
5. Allow for researchers to reuse data extracted during an evidence synthesis for novel purposes, such as meta-research activities investigating evidence synthesis practices themselves;
6. Increase the efficiency of the conduct of evidence syntheses and maps that have an overlap in subject with published reviews, by making use of extracted meta-data, data and coding from studies within a completed review with shared content;
7. Reduce effort associated with individual requests for information from corresponding authors of published reviews;

8. Improve primary and secondary research using detailed data relating to critical appraisal conducted within all evidence syntheses. By standardising meta-data extracted during critical appraisal, for example, some aspects of this assessment of internal validity could be performed across reviews;
9. Increase the impact of evidence syntheses by permitting reuse (and citation) and through increased trust.

Open Synthesis could take a variety of forms, and in practice may be achieved to varying degrees, particularly as institutional change may take considerable time and effort.

Aims and objectives

We propose that this group would consist of leading experts from across health, social welfare, international development, education, and environment, and would include key actors from the major organisations leading the coordination and development of systematic review and mapping guidelines, publication and methodology.

The provisional main aims of the group are as follows:

- To agree on a definition for Open Synthesis
- To draft a white paper on what the group believes Open Synthesis should look like in practical terms, this could extend to a list of minimum and ideal requirements (e.g. the range and format of additional files needed for repeatable methods and data). This paper should also propose institutional and individual changes needed to achieve Open Synthesis
- To discuss the relative benefits, costs, barriers and facilitators of moving towards Open Synthesis
- To survey the working group members and their colleagues about their knowledge of and attitudes towards Open Synthesis, and what challenges might exist
- To survey journal editors about their attitudes towards Open Synthesis and their readiness to integrate Open Synthesis
- To publish an academic paper highlighting this set of standards and discussing practical issues (individual and institutional) with achieving Open Synthesis
- To develop a plan for both research, training, and advocacy activities of the Open Synthesis group and the format for these activities in the future