Handout - TR3CA: Evaluation of your (AI-assisted) literature search

Purpose: Use the Transparency & Reproducibility, Relevancy, Reliability, Coverage, Accuracy (TR3CA) framework to evaluate whether results from an (AI-assisted) literature search are trustworthy and appropriate for your research.

Prerequisites:
- Check your faculty/editorial guidelines
- Document your search
- Use AI responsibly

Additional checks:
- Repeat search in a scholarly database
- Consult a topic expert
- Consult a librarian

Steps for TR3CA: Evaluation of your (AI-assisted) literature search

0. Have you recently assessed the **transparency** and **reproducibility** of this tool for this purpose? Or can you cite a reliable source/library person who has done this?
1. Is the information returned by the tool **relevant** to your research question / goal?
2. Is the information returned by the tool **reliable**?
3. How is the **coverage** of all the information returned by the tool?
4. Is the information returned by the tool **accurate?**

Step 0 — Transparency & Reproducibility

Have you recently assessed the transparency and reproducibility of the tool(-s) you plan to use for this purpose? Or can you cite a reliable source/library person who has done this? ***This is a preliminary step (0), because once evaluated you do not have to do this for every search, if the tool has not changed.***

Transparency: Is it known how the information returned was obtained? **Reproducibility**: Is the output generated by the tool reproducible across different time and users?	Questions to consider: – How are the sources identified, selected, and listed by the tool? – Does the tool explain how it finds or ranks sources? – Can it provide a clear explanation when asked to do so? – Are search parameters or prompts visible and adjustable? – Are the sources clearly listed and traceable? – When the steps used to obtain the information returned by the tool are repeated, will the same result be obtained or will the information returned differ significantly?

Step 1 — Relevancy

Is the information returned by the tool relevant to your research question/goal?

Relevancy: How does the information relate to my research question?	Questions to consider: – Does the information directly address all parts of your research question? – Are the keywords, concepts, and variables aligned with your topic? – Does the information reflect the scope and purpose of your project? – Are irrelevant or loosely related sources dominating the results?

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Step 2 — Reliability

Is the information returned by the tool reliable?

Reliability: Can I trust the information returned by the tool?	Questions to consider: – Do the cited sources actually exist? – Are the sources described correctly? – What kind of sources are presented? – Are the sources peer-reviewed? – Are the sources still valid (e.g. not retracted)? – Does the tool provide complete and correct citations? – Are conflicts of interest or funding sources made transparent?

Step 3 — Coverage

How is the coverage of all of the information returned by the tool?

Coverage: How well does the (full set of) retrieved information cover different (relevant) source types, different viewpoints, publication times? Does there seem to be a bias towards specific (groups of) authors, time periods, or journals (or other relevant source types)?	Questions to consider: – Are there different source types (e.g., articles, reviews, reports)? – Are sources from different publication years included? – Does the result set appear biased toward certain authors, journals, or time periods? – Are multiple and opposing viewpoints represented? – Is it drawn from a limited number of journals, publishers, etc.? – Does the tool cite primary/original sources and/or secondary information sources? – Are important well-known authors or experts in the field missing? – Are important known sources missing?

Step 4 — Accuracy

Is the information returned by the tool accurate?

Accuracy: Is the returned information factual and correct?	Questions to consider: If the tool summarises sources: – Are the facts and claims correct when checked against the original sources? – Are the insights from different sources weighed appropriately? For individual sources: – Are the methods appropriate to address the research question? – Are the claims/conclusions of the study in line with the results presented? – Are claims/conclusions presented with an appropriate level of certainty?

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