

A Comprehensive Technical Analysis of Research Review Typologies: The 14 Methodologies and the SALSA Framework

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In the contemporary landscape of evidence-based practice and academic inquiry, the sheer volume of primary research has necessitated advanced methods of synthesis. As researchers, practitioners, and policymakers seek to make sense of vast datasets, the methodology chosen for a literature synthesis becomes the cornerstone of the study's validity. One of the most influential frameworks in this domain was established by Grant and Booth in 2009, providing a typology that distinguishes between 14 distinct review types. Understanding these nuances is not merely an academic exercise; it is a technical necessity for ensuring that the chosen review methodology aligns with the research question, available resources, and the required level of rigor.

The SALSA Framework: The Technical Foundation of Evidence Synthesis

To analyze and categorize different review types, Grant and Booth introduced the **SALSA framework**. This analytical lens breaks down the review process into four fundamental technical components: **Search, Appraisal, Synthesis, and Analysis**. By evaluating a review against these four pillars, one can determine its depth, breadth, and methodological strength.

1. Search (S)

The **Search** component refers to the technical strategy employed to identify relevant literature. It ranges from a **comprehensive search** (aiming to find every possible study on a topic) to a **representative search** (seeking a sufficient cross-section of data). Technical execution involves the use of Boolean operators (AND, OR, NOT), MeSH (Medical Subject Headings) terms, and searches across multiple bibliographic databases such as PubMed, Scopus, or Web of Science. A high-rigor search often includes **grey literature**—theses, technical reports, and conference proceedings—to mitigate publication bias.

2. Appraisal (A)

Appraisal (often termed Quality Assessment) is the process of evaluating the internal validity and risk of bias within the included studies. In technical reviews, this involves using standardized tools such as the **Cochrane Risk of Bias tool**, the **CASP (Critical Appraisal Skills Programme)** checklists, or the **JBIC (Joanna Briggs Institute)** appraisal instruments. The appraisal stage determines whether a study is robust enough to contribute to the final synthesis or if its findings should be weighted less due to methodological flaws.

3. Synthesis (S)

Synthesis involves the technical integration of data extracted from the included studies. This can be **quantitative** (pooling numerical data) or **qualitative** (thematic grouping). Methods include **narrative synthesis**, where findings are described in text, or **meta-analysis**, where statistical techniques are used to calculate an overall effect size. The choice of synthesis is dictated by the homogeneity of the data collected during the extraction phase.

4. Analysis (A)

The **Analysis** phase is the final interpretation of the synthesized data. It goes beyond mere summary to provide an

evaluative conclusion. Technical analysis might involve **sensitivity analysis** (to see how results change if certain studies are removed) or **subgroup analysis**. The goal is to identify patterns, gaps in the literature, or definitive answers to the research question.

Technical Breakdown: The 14 Review Typologies

Grant and Booth's analysis identified 14 distinct types of reviews. Each type possesses unique characteristics regarding the SALSA framework. Below is a detailed technical analysis of each.

1. Critical Review

A **Critical Review** aims to demonstrate that the writer has extensively researched the literature and critically evaluated its quality. Unlike a systematic review, it goes beyond description to include a degree of analysis and conceptual innovation. The **Search** is typically non-systematic, and the **Appraisal** is focused on the conceptual contribution rather than methodological rigor.

2. Literature Review

Often used as a generic term, the **Literature Review** in this typology refers to a descriptive summary of literature on a topic. It is often used to provide context for a new study. The **Search** is usually not exhaustive, and **Appraisal** is rarely formal or standardized.

3. Meta-Analysis

A **Meta-Analysis** is a statistical technique that combines the results of several independent studies. To be technically sound, a meta-analysis must follow a **Systematic Review** process. The **Analysis** component is the most rigorous, utilizing statistical models (Fixed Effects or Random Effects) to calculate weighted averages of effect sizes. It requires high levels of data **homogeneity**.

4. Mixed Studies Review (Mixed Methods Review)

This review type integrates both **qualitative and quantitative** evidence. Technically, this is one of the most complex reviews to perform as it requires a "quantitizing" of qualitative data or a "qualitizing" of quantitative data to allow for **triangulation**. It is essential for addressing complex interventions where both effectiveness (numbers) and experience (narrative) are relevant.

5. Overview

An **Overview** (often called a 'Review of Reviews') provides a summary of evidence from multiple existing systematic reviews. This allows for a high-level map of a broad field. The technical challenge here is **overlapping primary studies**—ensuring that the same original study included in two different reviews isn't double-counted in the final analysis.

6. Qualitative Systematic Review (Evidence Synthesis)

This method focuses on the synthesis of qualitative research (interviews, ethnographies). Techniques such as **Meta-ethnography** or **Thematic Synthesis** are used. The **Appraisal** focuses on the depth of the data and the transparency of the qualitative methods used by the original researchers.

7. Rapid Review

A **Rapid Review** is a form of knowledge synthesis that accelerates the process of a systematic review by simplifying or omitting specific steps (e.g., searching only one database or having only one reviewer perform the screening). It is technically useful for urgent policy decisions but carries a higher risk of bias due to the non-

exhaustive **Search** and **Appraisal**.

8. Scoping Review

The primary goal of a **Scoping Review** is to map the extent, range, and nature of research activity in a particular field. It is often a precursor to a systematic review. Unlike a systematic review, a scoping review usually does not involve a formal **Appraisal** of the quality of the studies.

9. State-of-the-Art Review

These reviews focus on the most recent literature. They are **time-bound** and aim to provide a snapshot of current thinking or contemporary advancements. The **Analysis** often highlights new trends or emerging technologies rather than historical developments.

10. Systematic Review

The **Systematic Review** is the "gold standard" of evidence. It follows a strict, pre-defined protocol (e.g., **PRISMA**). Every step of the SALSA framework is maximized: the **Search** is exhaustive, **Appraisal** is rigorous using standardized tools, **Synthesis** is comprehensive, and **Analysis** is objective. It is designed to be **reproducible**.

11. Systematic Search and Review

This type combines a systematic search of the literature with a less rigorous approach to appraisal and synthesis. It is often used for shorter-term projects where a full systematic review is not feasible, but a transparent search strategy is still required.

12. Systematized Review

Usually conducted by students or single researchers, a **Systematized Review** attempts to include elements of the systematic review process but lacks the resources for a full, multi-reviewer execution. It is a technical "hybrid" that provides more rigor than a literature review but less than a full systematic review.

13. Umbrella Review

Similar to an overview, an **Umbrella Review** specifically synthesizes multiple systematic reviews on a specific topic into one accessible document. It is highly technical in its **Search** strategy, as it must identify all relevant systematic reviews within a specific domain.

14. Mapping Review (Systematic Map)

A **Mapping Review** categorizes the existing literature into a visual or tabular format. It identifies where research exists and, more importantly, where **research gaps** are. The **Synthesis** is often purely descriptive, focusing on the frequency of study types or topics rather than the results of the studies themselves.

Comparative Matrix of Review Types

The following table provides a technical comparison of the most common review types based on the SALSA framework requirements.

Review Type	Search Rigor	Appraisal (Quality Assessment)	Synthesis Type	Primary Goal
Systematic Review	Exhaustive / Systematic	Mandatory / Formal	Comprehensive / Integrative	Provide definitive answer
Scoping Review	Systematic / Broad	Optional / Minimal	Descriptive / Mapping	Identify scope of research
Meta-Analysis	Exhaustive / Systematic	Mandatory / Statistical	Quantitative / Statistical	Measure effect size
Rapid Review	Limited / Targeted	Time-limited / Brief	Narrative / Summary	Quick decision making
Critical Review	Not necessarily exhaustive	Conceptual / Subjective	Interpretive / Analytical	Conceptual innovation
Umbrella Review	Systematic (for reviews)	Mandatory (of reviews)	Integrative / Summary	High-level evidence map

Technical Workflow: Selecting the Right Review Type

Choosing the correct methodology is a procedural decision that impacts the validity of your conclusions. Engineers and researchers should follow this technical workflow to determine the optimal review type:

1. Define the Research Question: Is it a specific question about effectiveness (Systematic Review), a broad question about research volume (Scoping Review), or a question about the latest trends (State-of-the-Art)?
2. Assess Available Resources: Do you have a team of at least two independent reviewers? If not, a full Systematic Review may be technically impossible, necessitating a Systematized Review instead.
3. Evaluate Data Type: Is the data primarily numerical? (Meta-analysis). Is it experiential? (Qualitative Systematic Review). Is it both? (Mixed Studies Review).
4. Determine Time Constraints: Is a result needed in weeks (Rapid Review) or months/years (Systematic Review)?
5. Establish Appraisal Necessity: Do you need to know if the research is "good" or just that the research "exists"? If the latter, a Mapping Review is sufficient.

Case Study: Addressing Challenges in Evidence Synthesis

Problem: High Heterogeneity in Meta-Analysis

One common failure mode in technical synthesis is attempting a meta-analysis on data that is too diverse (heterogeneous). Technically, if the **I² statistic**(which measures heterogeneity) is too high (e.g., > 75%), the synthesis may be misleading.

Solution: Shifting to a Narrative or Scoping Approach

When quantitative synthesis fails due to data variance, the technical solution is to revert to a **Narrative Synthesis** or a **Scoping Review**. This allows the researcher to describe why the data is diverse—perhaps due to different populations, interventions, or measurement tools—rather than forcing an inaccurate numerical average.

Practical Implementation Checklist

- **Protocol Registration:** Have you registered your review on PROSPERO or Open Science Framework (OSF) to prevent duplication?
- **Search Strategy Documentation:** Have you saved the exact Boolean strings and filters used for each database?
- **Deduplication:** Have you used software like EndNote, Mendeley, or Rayyan to remove duplicate entries?
- **Inter-rater Reliability:** If using two reviewers, have you calculated Cohen's Kappa to ensure screening consistency?
- **Reporting Standards:** Are you following PRISMA (for Systematic Reviews) or PRISMA-ScR (for Scoping Reviews)?

Broader Implications of Review Typologies

The selection of a review type has profound implications for how knowledge is consumed. In technical and medical fields, a **Systematic Review** can change clinical guidelines, whereas a **Scoping Review** might simply redirect funding toward neglected areas of study. By utilizing the **SALSA framework**, researchers can ensure transparency and reproducibility—the hallmarks of scientific integrity.

Ultimately, the diversity of review types reflects the diversity of research needs. Whether one is conducting a high-speed **Rapid Review** for an emergency response or an **Umbrella Review** to synthesize decades of meta-analyses, the objective remains the same: to convert a chaotic volume of individual studies into actionable, high-quality knowledge. Mastering these 14 typologies allows for a more surgical approach to literature synthesis, ensuring that the method matches the mission.

Baca Juga (Artikel Terkait)

- [Comprehensive Guide to Ethnographic Research: Methodology, Data Analysis, and Cultural Systems](http://alghafgolden.com/comprehensive-guide-ethnographic-research-methodology.pdf)

URL: <http://alghafgolden.com/comprehensive-guide-ethnographic-research-methodology.pdf>

- [The Comprehensive Technical Guide to Research Proposal Assessment Instruments: Methodology, Validation, and Systematic Evaluation](http://alghafgolden.com/research-proposal-assessment-instruments-methodology-validation.pdf)

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- [A Comprehensive Guide to Qualitative Research Paradigms, Methodologies, and Technical Frameworks](http://alghafgolden.com/comprehensive-guide-qualitative-research-paradigms-methodologies.pdf)

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- [Comprehensive Guide to Mixed Methods Research: Design, Implementation, and Methodological Rigor](http://alghafgolden.com/comprehensive-guide-mixed-methods-research-design-implementation.pdf)

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