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Universidade de Lisboa

Research Methods and Masters Project

Literature Review II

Conducting a Review of the Literature II

Inês Faria

24/02/2026, 18:00-19:30

FRANCESINHAS 2, Room 203

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Literature Review II

Objectives:

- **Conducting a Systematic Bibliographic Search.**
- **The PRISMA protocol.**
- **Creating an Article Matrix as a tool for systematizing information.**

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Metodologia de Investigação (S73)

Literature Review II

LITERATURE REVIEW

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Literature Review II

What we want in a Literature Review (Bryman, 2012)

- **Relevant concepts and theories on the topic.**
- **Research strategies and methods commonly used to research similar topics.**
- **Assess facts with evidence (relative) in studies on the topic.**
- **Assess if there are methodological inconsistencies in produced evidence.**
- **Assess if there are research questions without an answer.**

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Literature Review II

- **A series of steps**

1. Exploratory Bibliographic Search
2. Annotated Bibliography
3. Systematic Bibliographic Search: Keywords
5. Systematic Bibliographic Search: Sources
6. Literature Review: Atricle Matrix
7. Literature Review: Report Results

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Systematic Bibliographic Search and Literature Review [SR]

SR's: *These approaches aim to gather and analyze all publications written in a specific scientific field. These methodologies facilitate the collection of datasets and publications to obtain comprehensive, transparent, and reproducible results in the related literature. While SR [systematic reviews] and MS [meta-synthesis analysis] conduct literature research on a given topic, their methods for evaluating the resulting dataset differ. In other words, SRs provide a general evaluation of primary studies conducted according to a clear and repeatable methodology, framed by research questions prepared in line with the structure of the study, and containing explicit objectives, materials, and methods in the relevant literature.* (Vovk et al. 2025, p.4)

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Systematic Bibliographic Search

Where should I start?

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Step 1: Keywords to guide your systematic Search

i. **Identifying key concepts for the Masters Project**

ii. **Look for synonyms, similar concepts and abbreviations in annotated bibliography**

	PART OF THE ANNOTATION	EXAMPLE
1	**Reference** Citation information in same format as required in Reference List	Griffiths, T. (1996). Hunters and collectors: The antiquarian imagination in Australia. Cambridge University Press.
2	**Statement** Short statement of author's viewpoint.	• *The authors describe...* • *The author's purpose is to challenge...*
3	**Describe** Short summary of theory, research findings or argument.	• *The main ideas expressed are...* • *The author's research focuses on...*
4	**Comment** Comment on usefulness/limitations of article/text for your research.	• *The writing style considers a range of audiences...* • *There is a lack of supporting evidence...* • *The main limitation of the website...*
5	**Evaluate** Evaluate the article/text, taking into account how it will fit into your research on a topic.	• *This article is useful for the research topic...* • *It is relevant to the thesis because...*

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ACTIVITY

Mentimeter

WHO: Individual

WHAT: Write down keywords that would fit your topic idea(s) for the MP (does not have to be a final idea)

Min: 6 / Max: 10

WHERE: Mentimeter

HOW LONG: 5 Minutes

5:00

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Step 2: Sources

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NON-SCIENTIFIC LITERATURE

i. Grey Literature;
ii. Newspapers and Magazines;
iii. Web;

SCIENTIFIC LITERATURE

- Primary Sources
  - Articles/Books with original empirical data/findings
- Secondary Sources
  - Articles/Books based on evidence from other sources:
    - Manuals;
    - Literature Reviews
    - Systematic Literature Reviews
    - Meta analysis

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Step 2: Sources

- **A systematic bibliographic search should be based exclusively on scientific literature and primary sources.**
- **However – there is non peer-reviewed scientific evidence that should not be used:**
  - **PhD theses;**
  - **Master dissertations;**
  - **Conference papers;**
  - **Unpublished papers even if posted in public repositories (SSRN, arXiv, etc.).**

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Step 3: Define further search parameters

- Search fields: ex. 'Title', 'Abstract', 'Title and Abstract', etc.;
- Methods
- Date: ex., '2000 – present';
- Language: ex., 'English' (according to preference/need);
- Area: ex., 'Management'; 'Sustainability'

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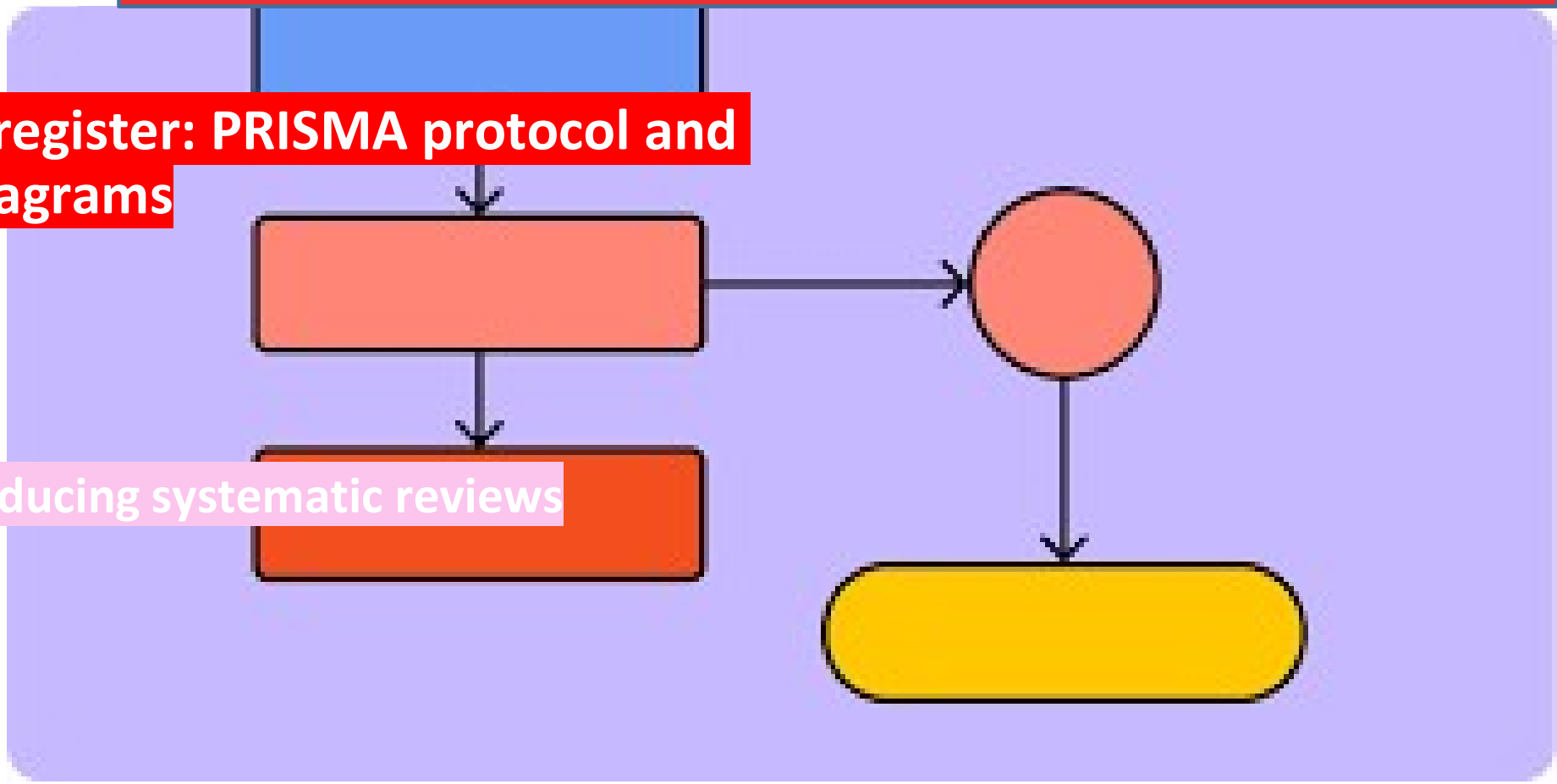
Step 4 register: PRISMA protocol and flow diagrams



Introducing systematic reviews

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Literature Review II

Useful for:

- **method and organization**
- **communication and transparency**

REFER TO:

Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, L. A. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis Campbell Systematic Reviews, 18, e1230. https://doi.org/10.1002/cl2.1230

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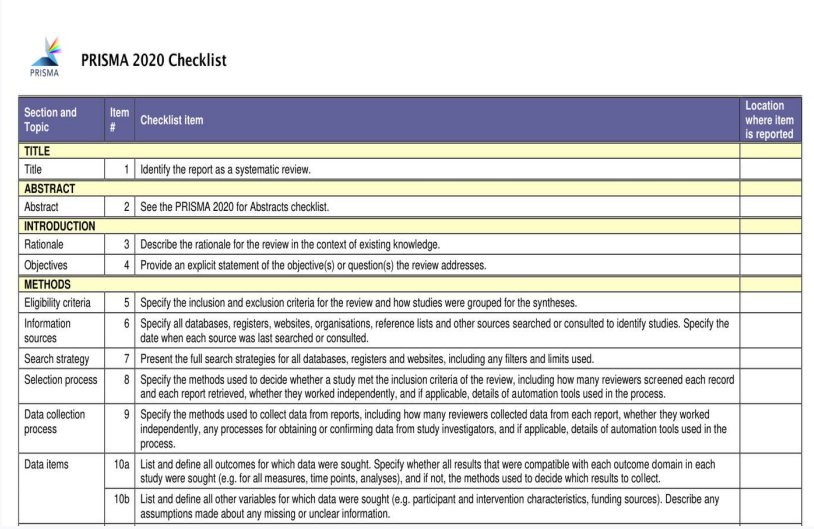
Report literature review transparently and systematically

- Checklist = what to include in Title/Abstract/Methods/Results/Discussion
- Flow diagram = how many records were identified, screened, excluded, and why
- It doesn't force you to use one method: you choose databases, appraisal tools, and synthesis approach



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	

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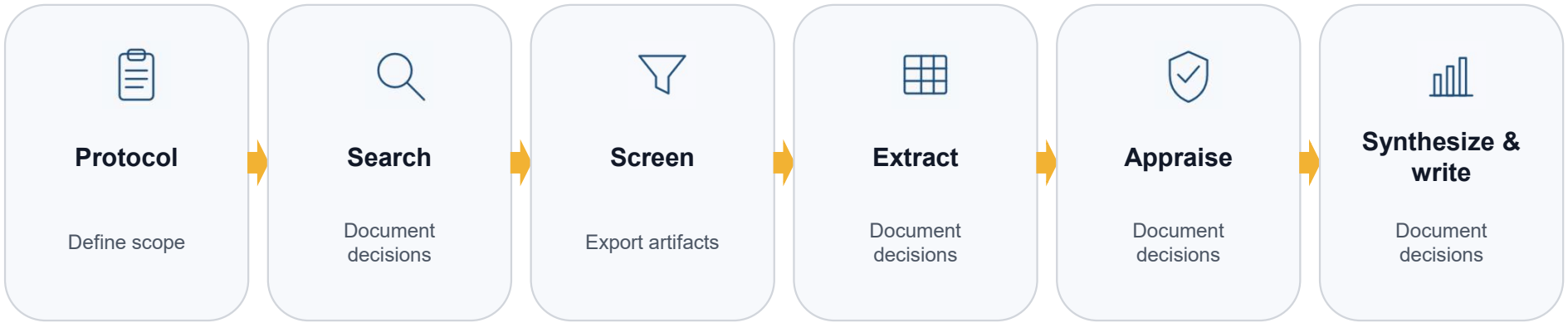
Think in 6 phases (each maps to PRISMA items)



PRISMA helps you report each phase. Keep a running audit trail, including search strings, screening decisions, and extraction sheets. From these the writing up of Methods/Results for the review is mechanical.
See example paper I shared: Vovk, V., Taşdöken, Ö., Bölük, G., Stratan, A. and Polcyn, J. (2025) 'Circular economy in the European Union: A PRISMA-based systematic review and meta-synthesis', Sustainability, 17, 1282. https://doi.org/10.3390/su17031282

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Identification

Start with a structured approach to inclusion criteria and data extraction (pick what fits your field):

- **PICO** (Population, Intervention, Comparator, Outcome) — common in health/education
- SPIDER (Sample, Phenomenon, Design, Evaluation, Research type) — qualitative/mixed methods
- PICo (Population, Interest, Context) — qualitative evidence synthesis

PICO example: Population: sport athletes; problem: hamstrings or ACL injury; prognostic factor: ipsilateral strength ratios; comparison: prospective comparison of injured and uninjured groups; and outcome: hamstrings or ACL injury and associated risk estimates. Kellis et al. 2023

Eligibility (include/exclude)

Population / setting	e.g., MA-relevant context
Study types	empirical / peer-reviewed
Years / language	justify limits
Outcomes / concepts	operational definitions
Exclusion reasons	define upfront

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Why a protocol matters in an MA thesis:

- Locks in scope and methods before results bias your decisions
- Makes supervisor feedback concrete (search plan, screening rules, extraction template)
- Gives you ready-made Methods section text

A protocol allows you to trace you steps and justify them.
It also allows you to describe the process better.

Protocol checklist (minimum)

- Research question + eligibility rules
- Databases + full draft search strings
- Screening plan (2 reviewers? calibration?)
- Extraction fields + quality appraisal tool
- Planned synthesis (narrative/meta-analysis) + subgroups

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Build and document a reproducible search, include full search strategies per database

- Start broad; add concept blocks with OR, then combine blocks with AND
- Use controlled vocabulary when available + free-text synonyms
- Record: database name, platform, exact query, date run, limits/filters

```
("concept A" OR synonym* OR related term)
AND

("concept B" OR framework OR model)
AND

(population OR setting OR context)
```

Test: you may ask a librarian to review one draft strategy, then reuse the concept blocks across databases (adapting syntax).

Include search strategies in an appendix if they are too long for the Methods chapter

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Screening

Remove and register what and why :

- Duplicates (same record from multiple databases)
- Clearly ineligible records removed by automation/tools (if used)
- Other pre-screening removals (rare, document explicitly)

PRISMA 2020 records removed before screening

Keep exports: (1) raw database results, (2) deduplicated library, (3) screened set. These numbers populate the flow diagram automatically later.

Tools: Zotero/EndNote/Mendeley + a screening tool (e.g., Rayyan, Covidence) can track counts for PRISMA reporting.

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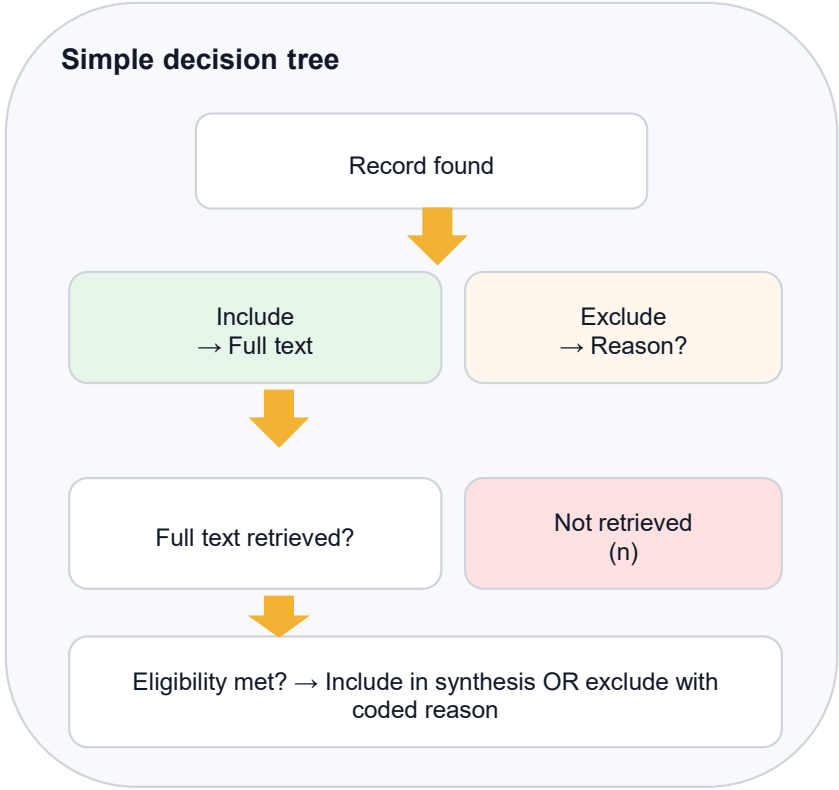
Eligibility and Inclusion

Screening for eligibility best practices – title, abstract, full-text

- Calibrate: reviewers screen the same 50 records, then resolve disagreements
- Use “maybe” sparingly and define crisp include/exclude rules
- Track reasons at full-text stage



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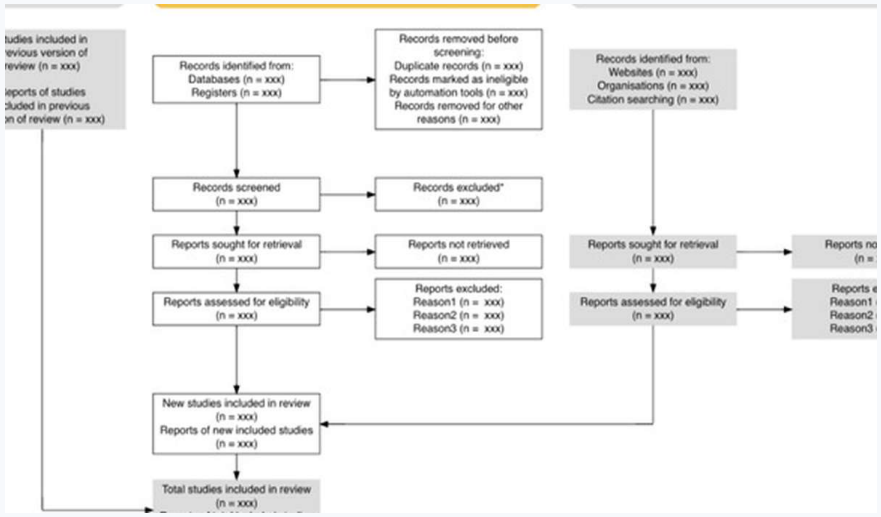
Describing the process with flows charts – putting things in numbers and reasons

- Records identified (by database/register/other sources)
- Records removed before screening (duplicates/automation/other)
- Records screened → records excluded
- Reports sought for retrieval → not retrieved
- Reports assessed for eligibility → reports excluded (with reasons)
- Studies included (and number of reports)



Track these counts as you go, and the PRISMA flow diagram is easy

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Extraction

The full reading phase: define what you extract and how.

- Pilot your extraction form on 3 to 5 papers; revise once
- Extract study characteristics + results separately
- Pre-define outcomes/constructs and acceptable measures
- Record missing/unclear data and how you handled it

Example extraction columns

Citation	Design	Sample	Measure	Key finding
Author (Year)	Survey	n=…	Scale…	Effect / theme
Author (Year)	Qual.	n=…	Interview	Theme…
Author (Year)	Exp.	n=…	Task…	Outcome…
Author (Year)	Mixed	n=…	—	Synthesis-ready

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Bias assessment

Pick an appraisal tool that matches your study designs:

- Randomized trials → RoB 2
- Non-randomized intervention → ROBINS-I
- Qualitative → CASP (qual) or equivalent
- Mixed methods → MMAT

Reporting tip:

Show per-study judgments and explain how appraisal influenced synthesis (e.g., sensitivity analysis or weighting).

Simple visualization idea

Low risk

Some concerns

High risk

Table example:

Study	Domain 1	Domain 2	Overall
A (2021)			
B (2019)			

PRISMA 2020 also asks you to present risk-of-bias assessments for each included study.

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Reporting and results

- Explain which studies contributed to each synthesis
- Describe how you prepared data and how you displayed results
- If meta-analysis: model, heterogeneity, software
- If narrative synthesis: grouping logic and evidence strength
- Report certainty/confidence where relevant

Typical outputs

- Study characteristics table
- Risk of bias summary
- Synthesis (narrative or meta)
- PRISMA flow diagram + checklist

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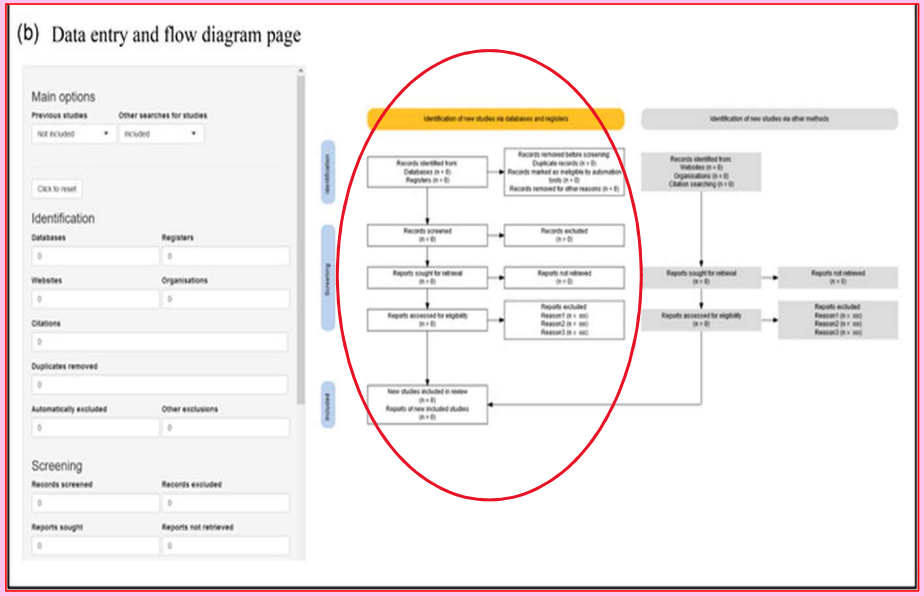
Build a flow diagram with the PRISMA2020 tool

Two ways to use it:

- Point-and-click (Shiny app): enter counts and download figure
- R package: script the diagram for reproducibility (optional)

Shiny app steps (fast path):

- Open the app from the ESHackathon PRISMA2020 page
- Choose whether you have previous studies and/or other sources arms
- Enter your counts (Identification → Screening → Included)
- Export as PNG/SVG/PDF for your thesis



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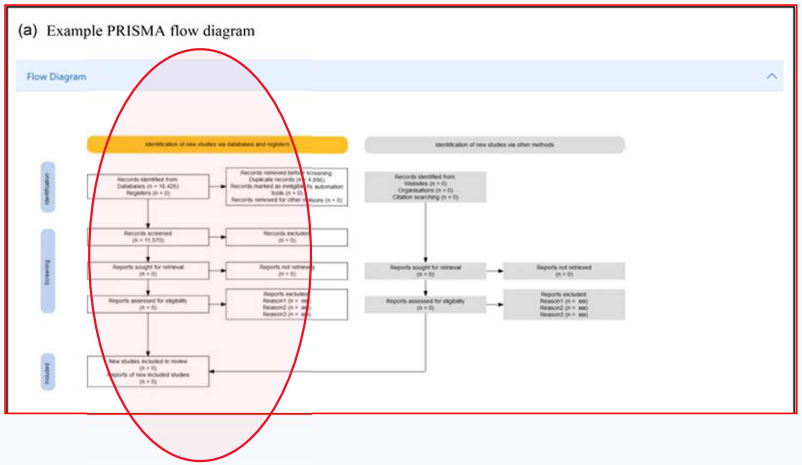
Results

- Protocol + change log (appendix or OSF link)
- Full database search strategies (appendix)
- PRISMA 2020 flow diagram (figure in Results)
- Completed PRISMA checklist with locations
- Extraction sheet + risk-of-bias table (supplement or appendix)

Optional: interactive flow diagram



Avoid

- Not saving exact search strings + dates
- No coded reasons for full-text exclusions
- Checklist completed at the end (too late to fix gaps)

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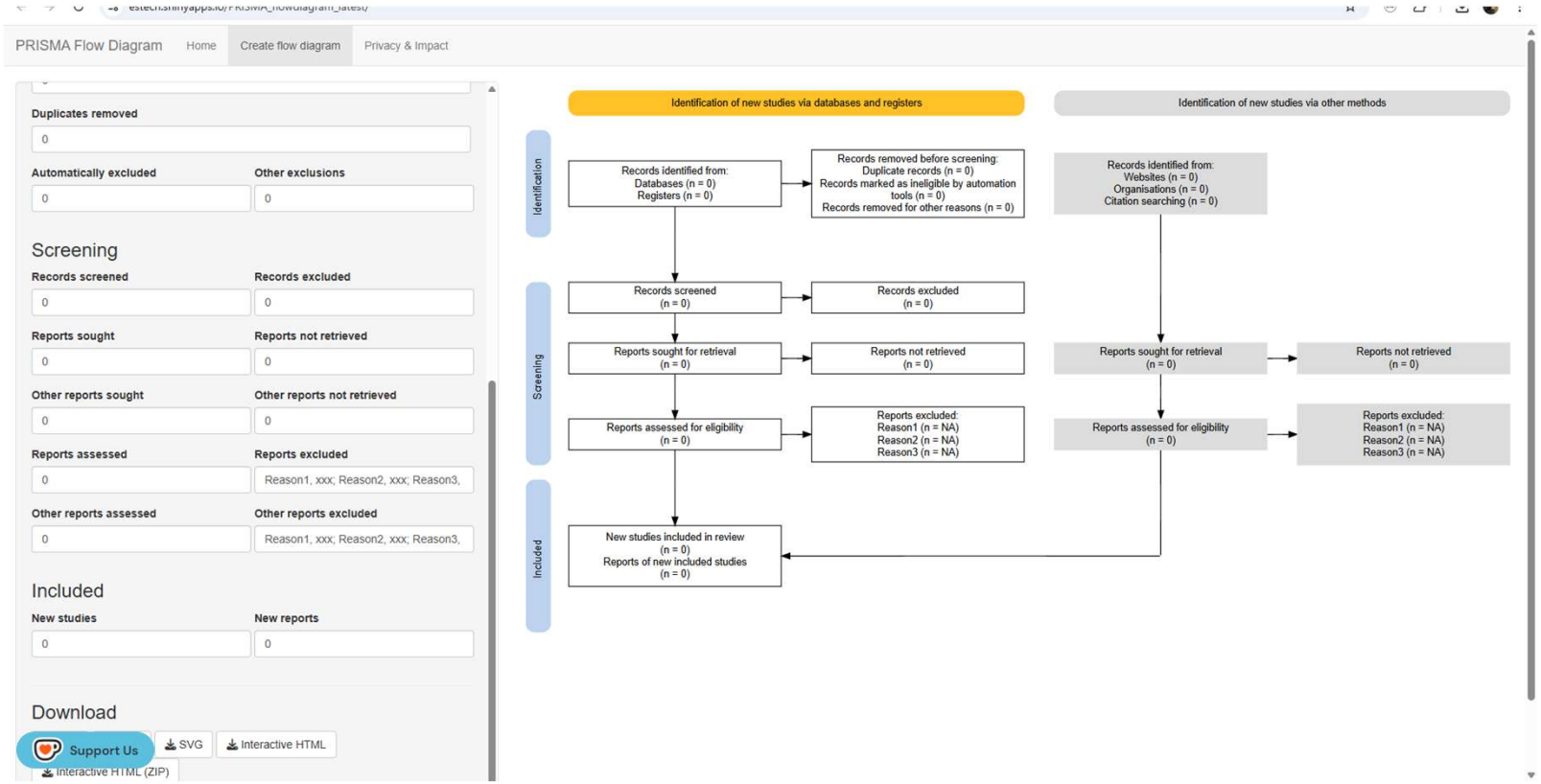

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Try:

Toolkit – Shiny app Prisma2020

Use the Kellis et al., 2023 paper to complete a **PRISMA 2020 flow diagram** (Identification → Screening → Eligibility → Included).

- **Records after duplicates removed** = _____
- **Records screened** = _____
- **Reports sought for retrieval** = _____
- **Reports assessed for eligibility** = _____
- **Studies included in the review** = _____

Suggestion: try to do this with the **text in the methods + results section** so you can get and idea of the connection between PRISMA flowchart and description

URL

GITHUB: https://github.com/prisma-flowdiagram/PRISMA2020

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Literature Review II

Try:

Toolkit – Shiny app Prisma2020

Use the Kellis et al., 2023 paper to complete a **PRISMA 2020 flow diagram** (Identification → Screening → Eligibility → Included).

- **Records after duplicates removed** = 6124 from 10154
- **Records screened** = 6124 (after removal of 4032 duplicates)
- **Reports sought for retrieval** = 41 (6083 removed after after title/abstract screening)
- **Reports assessed for eligibility** = 41
- **Studies included in the review** = 23 (18 excluded after full-text review)

Suggestion: try to do this with the **text in the methods + results section** so you can get and idea of the connection between PRISMA flowchart and description

URL

GITHUB: https://github.com/prisma-flowdiagram/PRISMA2020

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Scopus at ISEG – use this for the systematic bibliographic search

URL:
https://www.scopus.com/pages/home#basic

Note: you need to login with you ISEG account

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From topic to literature review

Step 6: Systematize evidence

- **Using an Article Matrix** (you can adapt the PRISMA extraction table)

Table 3.1: Summary table

Author/ Year	Research Design	Participants or Population Studied	Comparison	Outcome
Smith/2010	Mixed methods	Undergraduates	Graduates	Improved access
King/2016	Survey	Females	Males	Increased representation
Miller/ 2011	Content analysis	Nurses	Doctors	New procedure

Mauldin e DeCarlo, SD

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From topic to literature review

You will have a lot of very diverse articles to use so it is useful to systematize the information:

Article Matrix

Table 3.1: Summary table

Author/ Year	Research Design	Participants or Population Studied	Comparison	Outcome
Smith/2010	Mixed methods	Undergraduates	Graduates	Improved access
King/2016	Survey	Females	Males	Increased representation
Miller/ 2011	Content analysis	Nurses	Doctors	New procedure

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From topic to literature review

Article Matrix Items (minimum):

- Author(s);
- Publication Year;
- Main objective of article;
- Methods/research design;
- Topic and research object (case study, sample, etc.);
- Findings.

Table 3.1: Summary table

Author/ Year	Research Design	Participants or Population Studied	Comparison	Outcome
Smith/2010	Mixed methods	Undergraduates	Graduates	Improved access
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Miller/ 2011	Content analysis	Nurses	Doctors	New procedure

Mauldin e DeCarlo, SD

Once you systematize the information in the same way you can create the article matrix by:

- Publication year;
- Research Object;
- Methods (Qualitative, quantitative, mixed, participatory, etc.);
- Results;
- Other relevant organization priorities.

ARTICLE MATRIX

AUTHOR	YEAR	OBJECTIVE/ RESEARCH QUESTION	HYPOTHESI S	DEPENDENT VARIABLE (definition, measurement)	DEPENDENT VARIABLE (definition, measurement)	METHODS (Qualitative vs. Quantitative)	MAIN REUSLTS

You can adapt the Article Matrix to the Methods:

- **In quantitative research matrix should be more detailed - information about hypothesis, sample, variables, method and analysis.**

- **In qualitative research categorization is more flexible - same basic matrix structure, without the details about the variable but with details about the qualitative data collection (ethnography, interviews, focus groups, etc.) and analysis (content analysis, discourse analysis, mapping, etc.)**

ARTICLE MATRIX

AUTHOR	YEAR	OBJECTIVE/ RESEARCH QUESTION	HYPOTHESIS	DEPENDENT VARIABLE (definition, measurement)	DEPENDENT VARIABLE (definition, measurement)	METHODS (Qualitative vs. Quantitative)	MAIN REUSLTS

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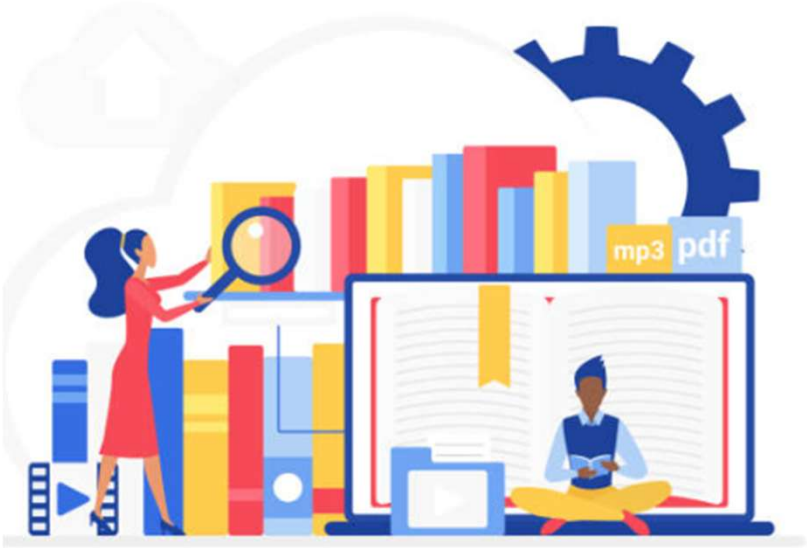
From topic to literature review

The literature review:

- With all the information systematized you can write the literature review
- It is a narrative, where you tell the story of what has been said about the topic and how it relates to your research question/hypothesis or argument (gap in the literature, further inquiry on a topic, specific line of study, etc.)
- The literature review set the background for the development of your work on the topic you choose in any of the modalities of Masters' Project you Choose.



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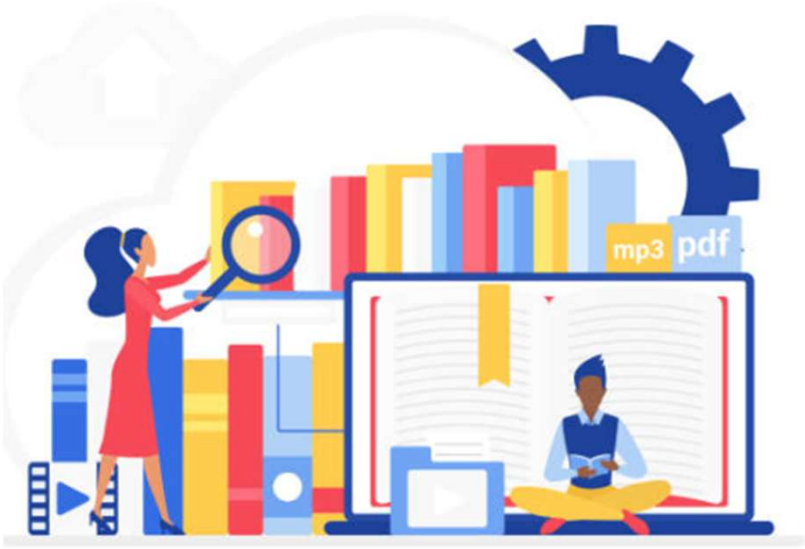
From topic to literature review

The literature review:

- Overview and your topic
- Research question/objective of review
- Organize literature (dates, subject, concepts, etc. - remember article matrix)
- Identify gaps, inconsistencies and contradictions (remember the annotated bibliography and the critical reading)
- Identify weaknesses or limits of studies used
- Summarize and conclude – implications, gaps, further research…
- Your MP's place within this literature configuration – what literature/conceptual challenge are you responding to?

More details here:

- Galvan et al. 2017: Reporting
- Zemach and Rumisek 2005: Academic Writing



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From topic to literature review

Task 2

WHO: Individual

WHAT: Systematic Bibliographic Search (Scopus) + PRISMA protocol (flow diagram + checklist) use Harvard referencing style

WHERE: MsTeams

HOW LONG: new date on teams