




Research Projects: Literature Reviews, Posters & Presentations

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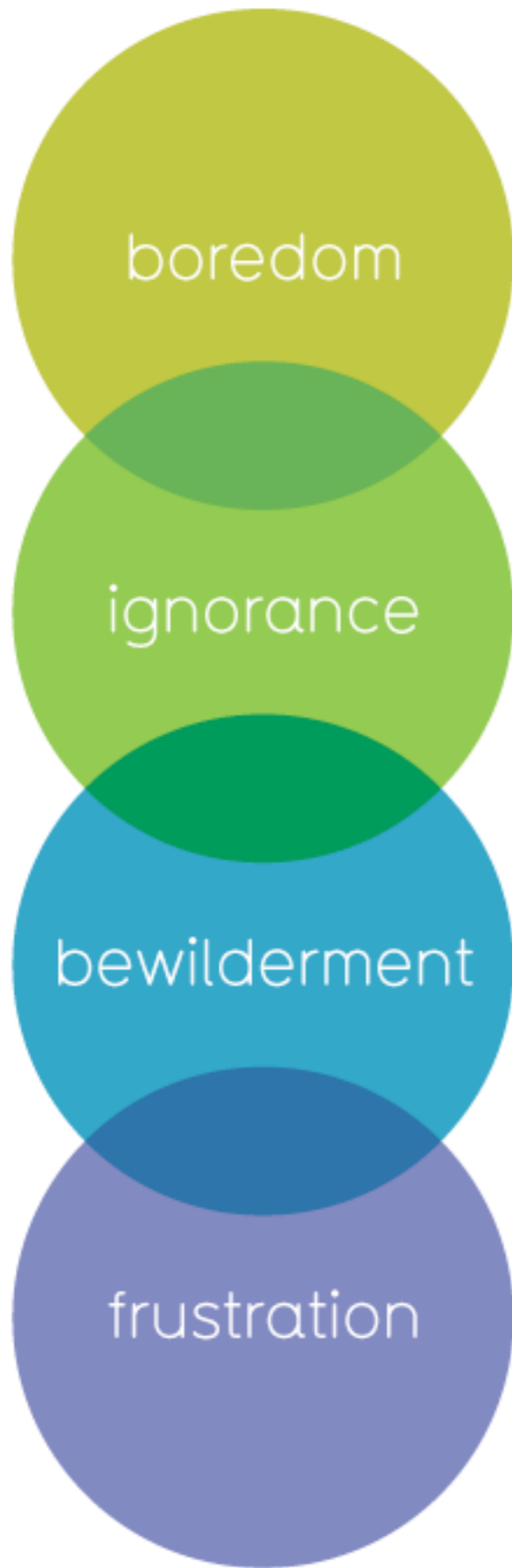


“Well-crafted questions guide the systematic planning of research. Formulating your questions precisely enables you to design a study with a good chance of answering them.”

Light, Singer, Willett, By Design (1990)

How do I find a topic?

- What are you interested in?
- What are you good at?
- What's going on in the world
- **Research question** = brief question that directs your efforts to collect, critically read, and evaluate your sources.



How can I make this interesting?

How can I find this out?

How can I understand this?

How can I make this work better?

What makes a good topic?

- **Open-Mind**: not too opinionated
- **"Narrow enough"** thorough research
 - Too broad > unfocused and superficial.
 - Too narrow > you won't find the information you need to proceed
- **Too broad**: optics, electromagnetism, waves
- **Just right** : "An investigation into the stability of blue polymer light emitting diodes"

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When do you start a literature review?

- Introduction to a **scientific paper** or **report**
- Chapter in a **thesis**
- Writing a **research proposal**
- Starting a **scientific poster**
- Applying for **funding**
- Applying for **conferences/ festivals**

How do you start a literature review?

- **A review** of everything you have read on the topic.
- **A list** of things such as methods/techniques, policies, ideas, opinions on a particular research topic.
- **A critical assessment** of the literature in a particular field/topic to **identify gaps/areas/weaknesses/controversy** for further research.
- Organise information to clarify your research question
 - Chronological, Thematic, Methodological

How do you start a literature review?

- **Define** the **problem/area** you are working on
- **Carry out** a literature search
- **Evaluate** the materials
- **Analyse** the findings
- **Write-up** literature review
- **KEEP REFERENCES**

Where can I look?

- Journals e.g. review articles
- Specialist journals
 - Directory of Open Access Journals
 - Frontiers In
- Text books
- Databases
- Conference proceedings
- Web-based documents
- Specialist magazines (Physics World, Education in Chemistry, Journal of Chemistry Education)
- Personal communication

Be critical!

- Keep your **Research Question** in mind
- Skim read- date, abstract, headings, conclusions
- How current is the material? Were the methods appropriate?
- Are the arguments logical, evidence?
- Keep summaries of each paper/ reference
- Highlight and look up words

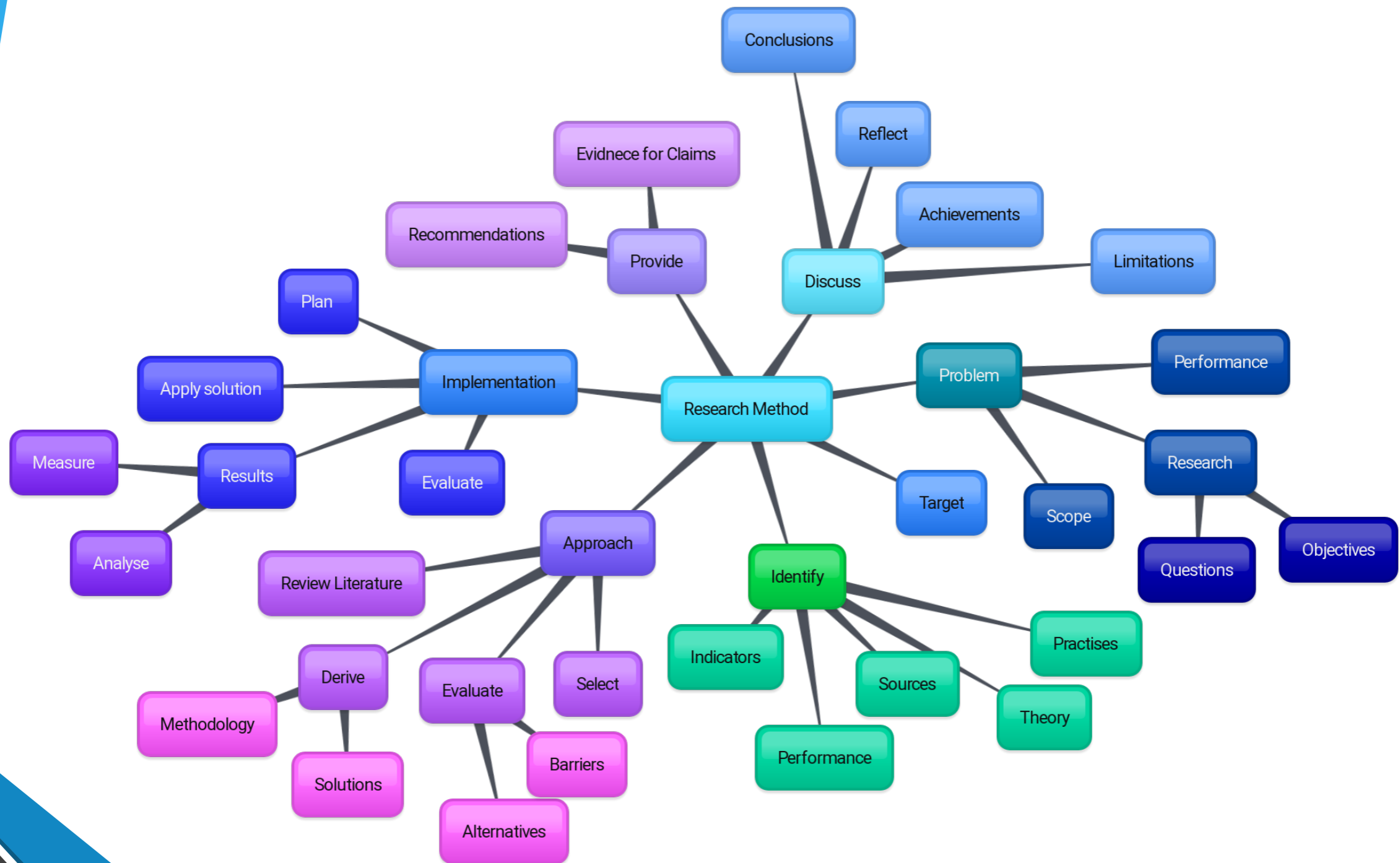
Be wary of google!

- Author's credentials / qualifications ?
- Perspective (e.g. cultural context)
- Why does the website exist? affiliations/bias?
Intended audience?
- Referenced or linked material?
- URL - check type of organisation
(.gov/.com/.ac.uk/.edu)

Keeping References

- The library (librarians, online and workshops)
- Endnote
- Refworks
- Reference manager on Word
- Mendeley

Mind Maps



Avoid Plagiarism

- Did I know this before?
- Did I think this before?
- Organisation, note taking, referencing help
- **Paraphrase with book closed** – and cite
- Find out the style required
- Enclose all quotes in your notes
- Get your work reviewed
- When in doubt – **seek advice**:
 - <http://www3.imperial.ac.uk/library/researchers/plagiarism>
 - <http://www3.imperial.ac.uk/library/researchers/plagiarismdetection>

Parts of Review:

- **Introduction**

- Guides the reader
- The research question
- Establish scope and importance of topic
- Summary of previous attempts to answer it

- **Content**

- Include headings
- Synthesise and summarise concepts, facts, theories
- Identify, analyse and evaluate

- **Summary**

- Summarises key ideas, gaps, inconsistencies
- Why are gaps worth filling?
- Who has made the best attempts to fill them?
- How you intend to fill the gaps