

Research Methodology

Literature Review

Overview

- What is the literature review?
- Why literature review?
- How to conduct a literature review
- Conclusion

What is literature review

- The selection of available documents on the topic, which contain information, ideas, data and evidence
- Written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic

What is literature review

- How it is to be investigated
- The effective evaluation of these documents in relation to the research being proposed

Why literature review

- It provides theoretical background
- It enables you to refine research methodology
- It enables you to define your contribution to knowledge
- It enables you to contextualise your findings

Why literature review

- Distinguish what has been done from what needs to be done
- Discover important variables relevant to the topic
- Synthesise and gain a new perspective
- Identify relationships between ideas and practice

Why literature review

- Establish the context of a topic or problem
- Rationalise the significance of the problem
- Enhance and acquire the subject vocabulary
- Understand the structure of the subject
- Relate ideas and theory to applications

Why literature review

- Identify the main methodologies and research techniques that have been used
- Place the research in a historical context and show familiarity with up-to-date developments

Why literature review

- What are the major issues and debates?
- What are the epistemological grounds for the discipline?
- How is knowledge on the topic organised?
- What are the main questions addressed to date?
- What are the political standpoints?
- Are there important definitions or terms to clarify?

Why Literature Review

- Research theory and philosophy (intellectual context of your research)
- History of developments in your subject
- Latest research and development in your subject
- Research methods (practical techniques)

Literature Review

- Is literature review a linear process?
 - No
- Should literature review be written up as one chapter?
 - Not necessarily
- Should literature review include critical analysis?
 - yes

How to conduct

- Search for existing literature in your area of study (you need to have an idea or problem in mind)
- Review the literature selected
- Develop a theoretical framework
- Develop a conceptual framework

How to Conduct

- Find literature associated with the topic
- Search and analyze the literature
- Evaluate the paper before reading
- Cite literature properly
- Make a summary table of reviewed papers
- Avoid plagiarism
- Write a journal article based on literature review

How to Conduct

- In the review,
 - Note available theories and methodologies, as well as their criticisms
 - Notice where there are significant differences of opinions
 - Identify gaps in the body of knowledge
 - Clarify your understanding of the field

How to Conduct

- Explain the rationale for your research
- Place your research within a broader context
- Evaluate the results of previous research
- Define key concepts and ideas
- Identify research in related areas that are generalizable or transferable to your topic
- Identify relevant methodological issues

Systematic Review



Systematic Review

- Identification of research
- Selection of primary studies
- Study quality assessment
- Data extraction and monitoring
- Data synthesis
- **Reporting the review**

Reading a Review Paper

- What are the review's objectives?
- What sources were searched to identify primary studies?
- Were there any restrictions?
- What were the inclusion/exclusion criteria and how were they applied?

Reading a Review Paper

- What criteria were used to assess the quality of primary studies and how were they applied?
- How were the data extracted from the primary studies?
- How were the data synthesized?

Reading a Review Paper

- How were differences between studies investigated?
- How were the data combined?
- Was it reasonable to combine the studies?
- Do the conclusions flow from the evidence?

Reading a Review Paper (General)

- Can you find an important question, which the review addressed?
- Was a thorough search done of the appropriate databases and were other potentially important sources explored?
- Was methodological quality assessed and the trials weighted accordingly?

Reading a Review Paper (General)

- How sensitive are the results to the way that the review has been done?
- Have numerical results been interpreted with common sense and due regard to the broader aspects of the problem?

Evaluating

- Is the problem clearly articulated?
- Are the results new?
- Was the research influential?
- How large a sample was used?
- How convincing is the argument?
- How were the results analysed?
- What perspective are they coming from?

Evaluating

- Are the generalizations justified by the evidence?
- What is the significance of this research?
- What are the assumptions behind the research?
- Is the methodology well justified?
- Is the theoretical basis transparent?

Reading and Writing

- To use context clues and a dictionary to understand new words
- To identify and mark important ideas
- To identify new words and phrases that describe the methods or patterns of organizing and developing ideas
- To apply comprehension skills to vocabulary and text material

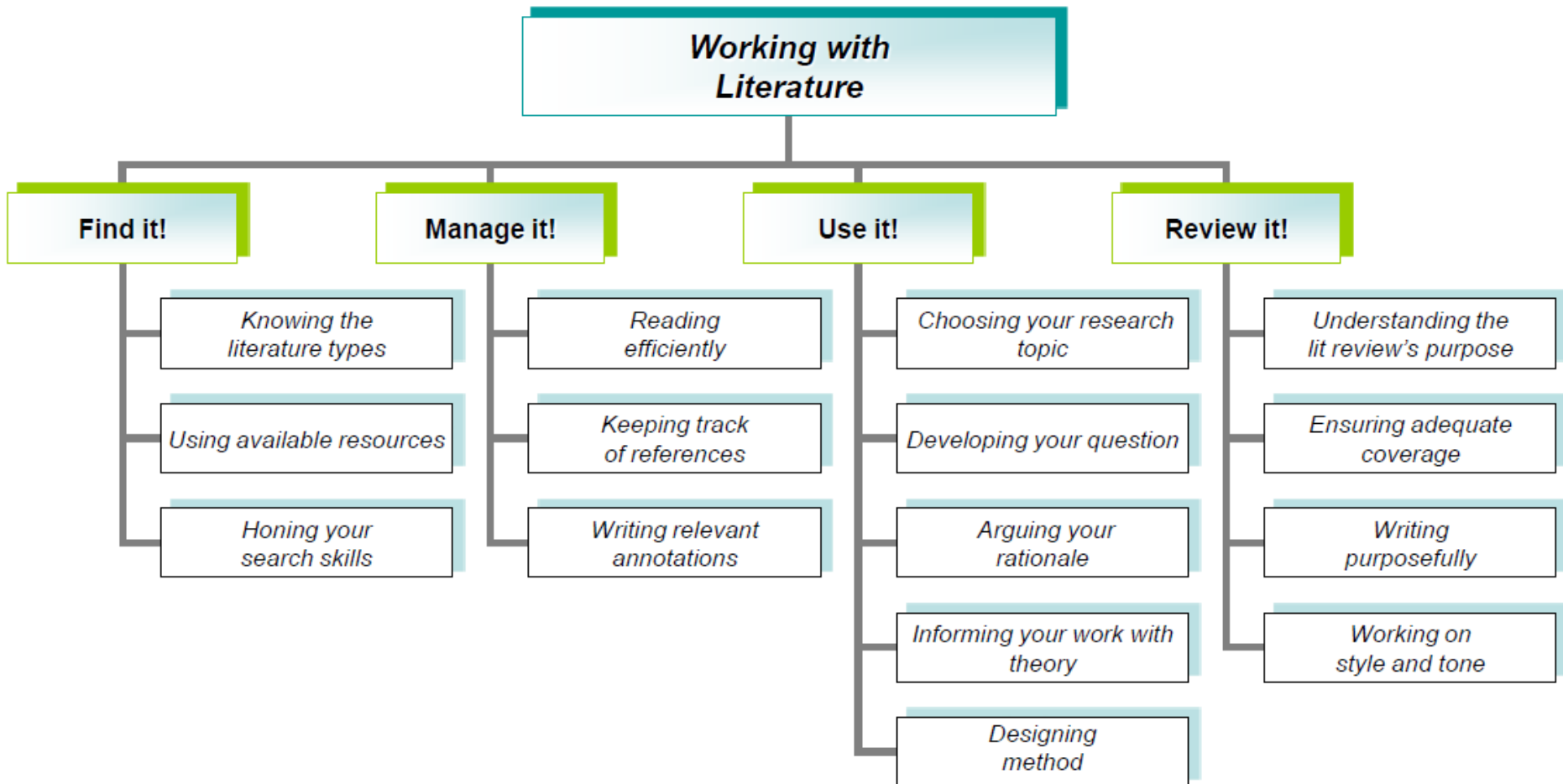
Reading and Writing

- Reading technique
 - Skimming
 - Scanning
 - Reading to understand
 - Word-by-word reading
 - Reading for pleasure

Reading and Writing

- Taking notes
 - To help remember something
 - To keep a permanent record
 - To help in your planning
 - To reorder material
 - To help you understand what you are learning
 - To help you concentrate
 - To share knowledge with other people

Literature Review



Don'ts

- Read outdated version of a paper/book
- Read without writing
- Read unlinked papers
 - Detect as much of the relevant literature as possible

Don'ts

- Read before planning
 - Defining a review protocol that specifies the research question being addressed
- Start reading with few resources
- Language bias
- Publication bias

Selecting Keywords

- Title
- Abstract
 - Abstracts should include keywords that potential readers are likely to use in searches
 - The first sentence of the abstract is all that is likely to be displayed in the search page results
 - Make your first sentence one that will encourage readers to click the link

Finding Research Literature

- ISI web of knowledge
- Google Scholar

Analyzing Information Sources

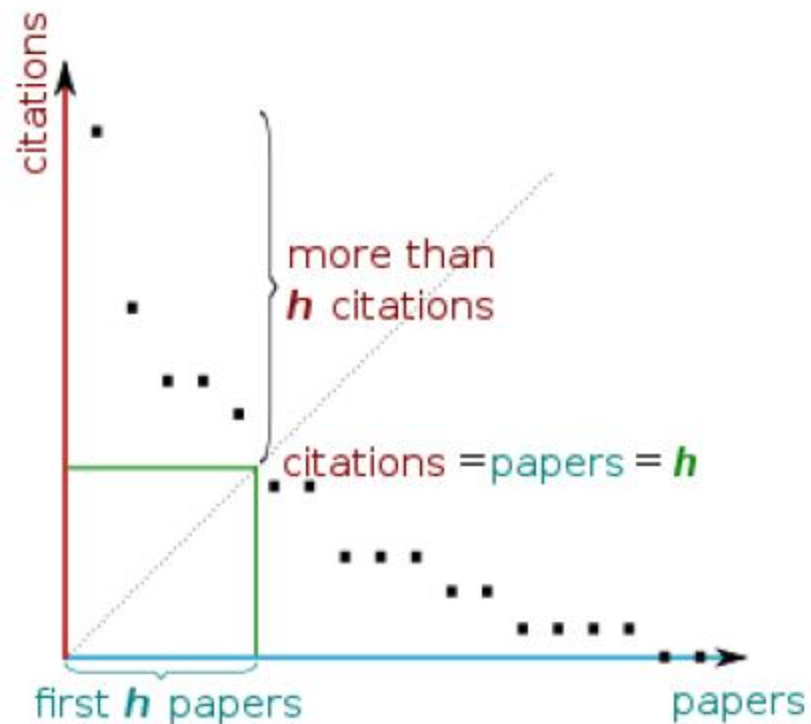
- Initial Appraisal:
 - Author
 - Date of Publication
 - Edition or Revision
 - Publisher
 - Title of Journal
 - Distinguishing Scholarly Journals from other Periodical

Analyzing Information Sources

- Content Analysis:
 - Intended Audience
 - Objective Reasoning
 - Coverage
 - Writing Style
 - Evaluative Reviews

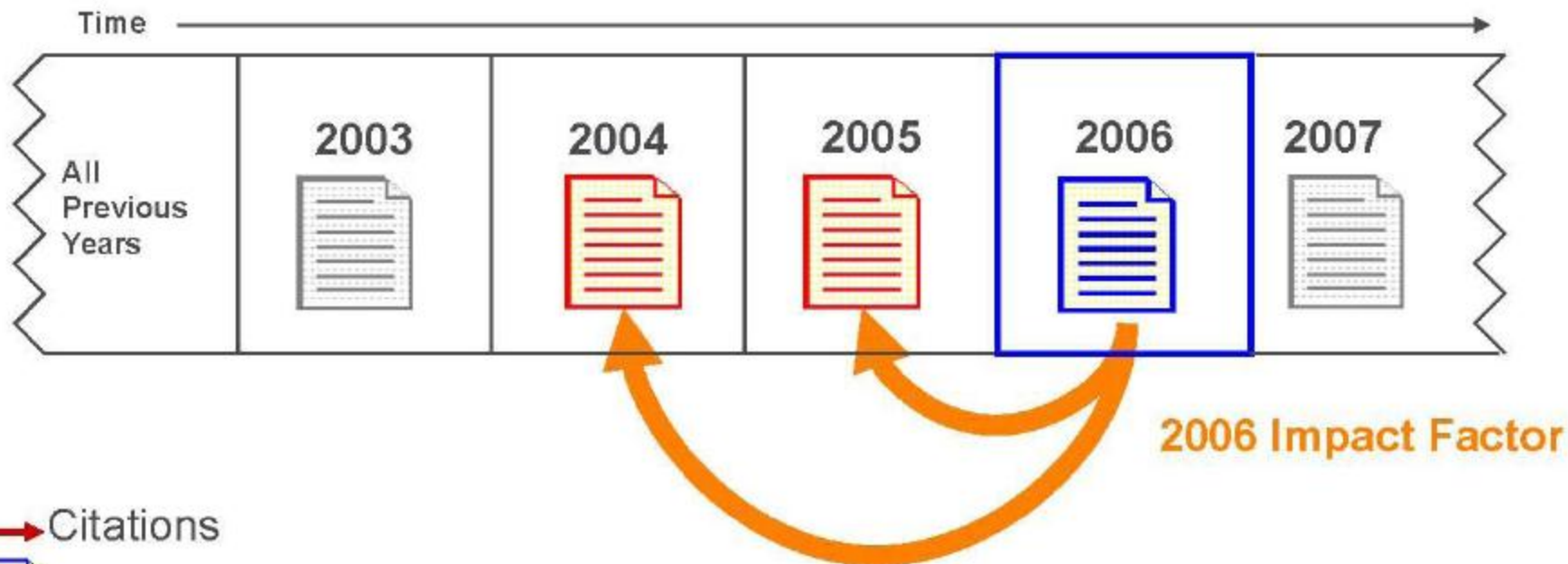
Analyzing Information Sources

- Author
 - h index
 - A scientist has index h if h of his/her N_p papers have at least h citations each, and the other $(N_p - h)$ papers have at most h citations each




Analyzing Information Sources

- Paper/Journal quality
 - Journal index/Impact factor
 - ISI offered bibliographic database services
 - ISI publishes annual Journal Citation Reports (JCR)
 - Relative Impact factor
 - Real Impact factor
 - Journal self cites
 - Journal source data



→ Citations

 Source paper – published in 2006

 Cited reference – published in 2004 or 2005

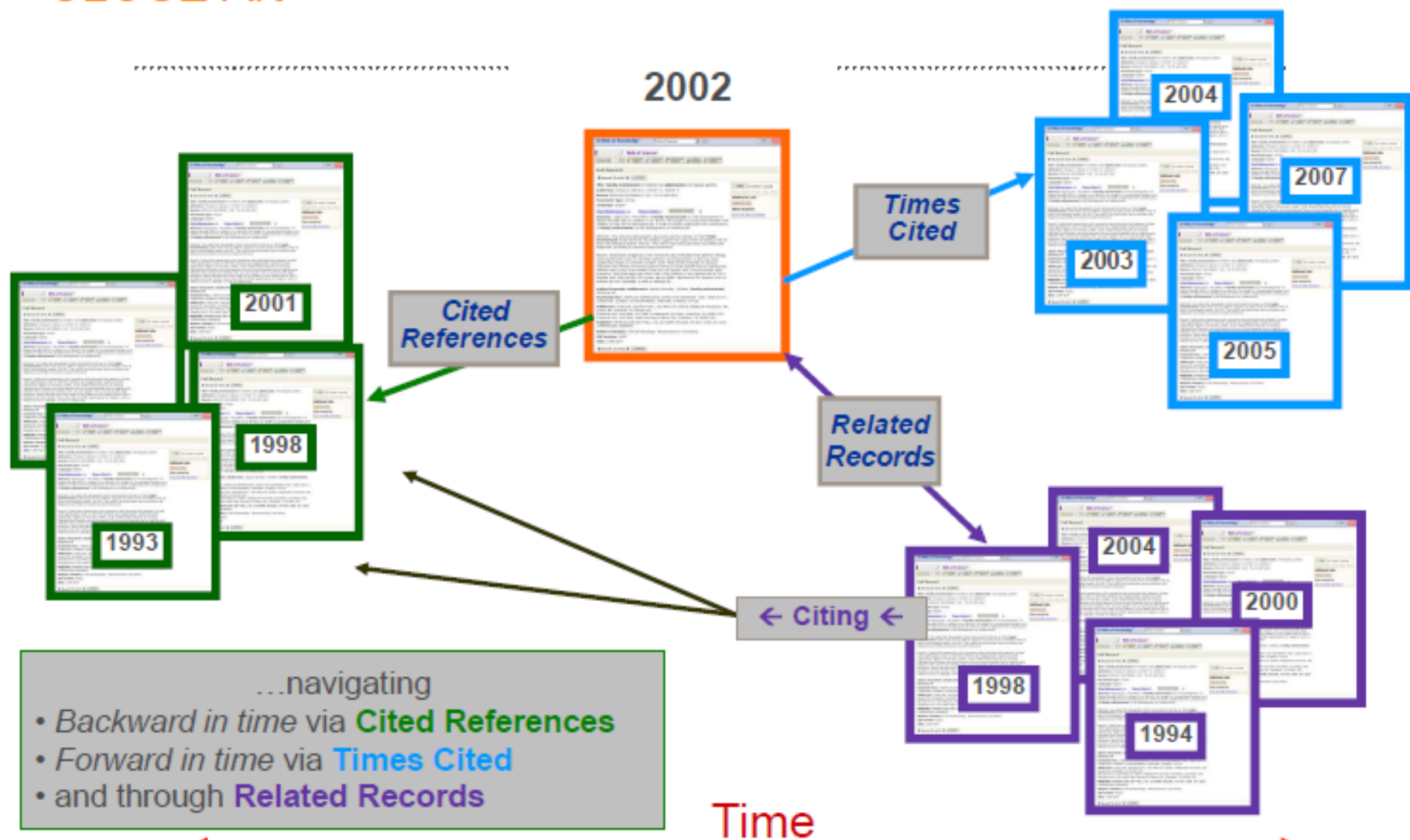
$$\text{Impact Factor} = \frac{\text{Cites in 2006 to 2004 and 2005 papers}}{\text{Papers published in 2004 and 2005}}$$

The average number of citations in 2006 to scholarly material that was published in the prior two years

Analyzing Information Sources

- General reputation of the association, society, or organization publishing the journal
- Leading professional associations such as APA and IEEE
- Citation tracking
 - Citation index
 - Determine the position of academic debate at any time in the past

Literature Citation Information – Driving Discovery of “CLOSE Art”



...navigating

- Backward in time via **Cited References**
- Forward in time via **Times Cited**
- and through **Related Records**

- Keeping up-to-date

Any Questions?

THANKS FOR YOUR ATTENTION