

# Review of the Related Literature

*Organizing & Writing a Literature  
Review*

*Referencing*

# The role of research reviews

- What is research?
  - *‘The systematic investigation to develop theories, establish evidence and solve problems’* (Gough et al 2012 p.1)

Research can focus on:

- The creation of new knowledge through primary studies
- Creation of knowledge on the basis of previous research
- Knowledge should be cumulative (Oakley 2012)

‘If I have seen further it is by standing on the shoulders of giants’

Isaac Newton



# The Literature Review is...



- A discussion of your knowledge about the topic under study
- A discussion of your knowledge that is supported by the research literature
- A foundation for the study

# The Literature Review is not...

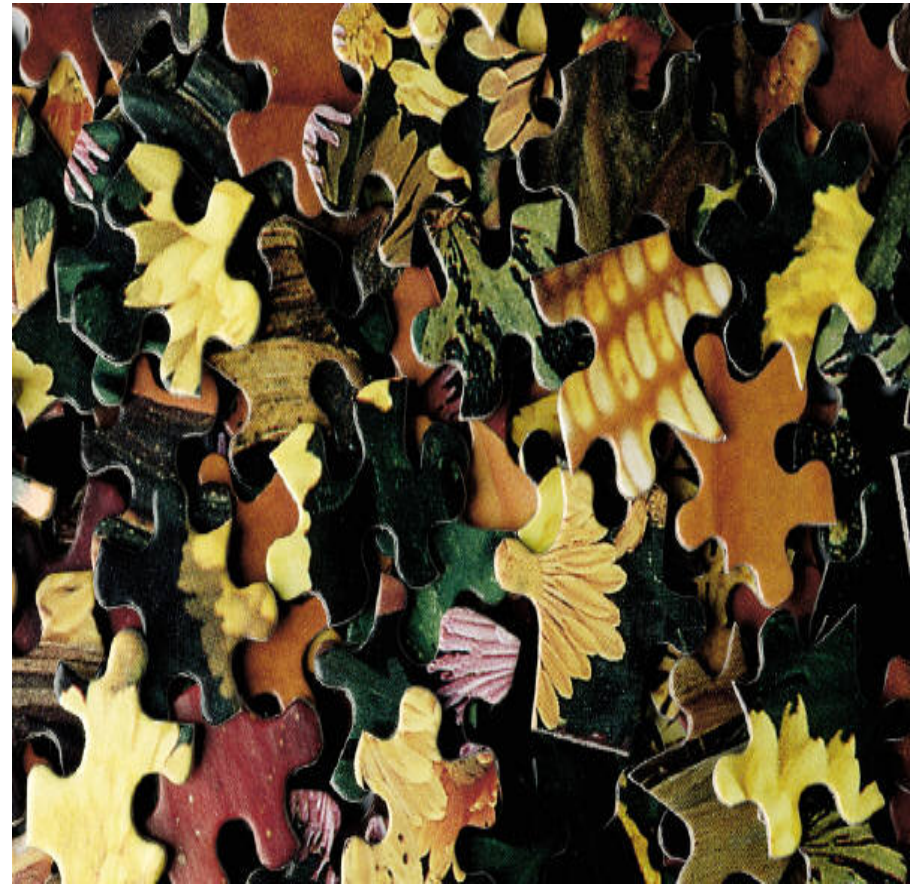
- A study-by-study, or article-by-article, description of studies previously done
- A re-statement of the studies previously done
- A brief overview of articles



# Why are reviews needed

‘Research information is like small jigsaw puzzle pieces in a box, where there are several pictures, several duplicates and several missing pieces’ (Sheldon 1998)

Individual studies use different methods, are of different quality and may present contradictory findings



# Reviewing the Literature

- Begin with a search of the available literature
- Critically analyze each article (study) you select
- Organize the review with an outline
- Write the review
- Summarize the review
- Using the literature, present a rationale for your study

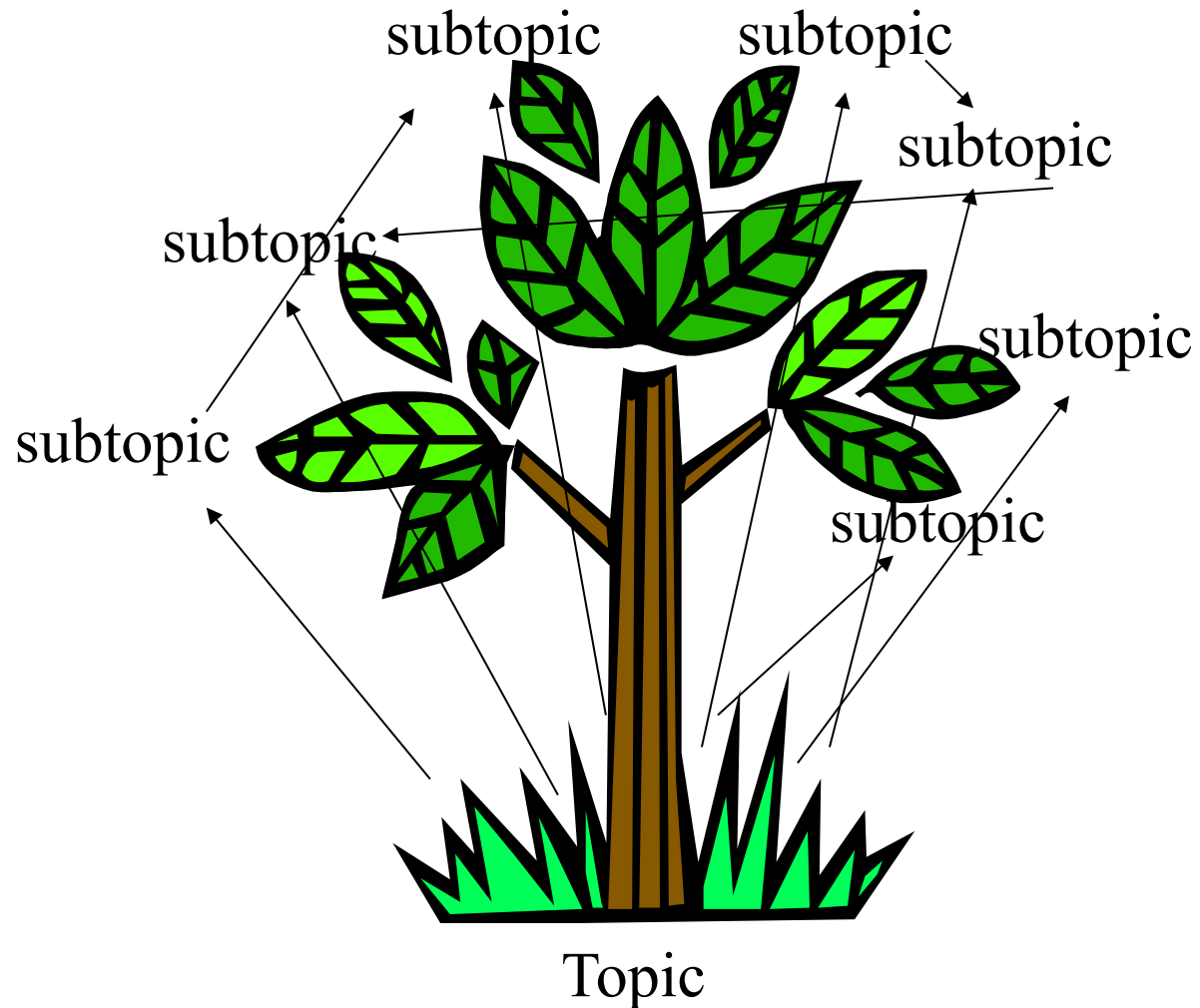


# What distinguishes a good quality literature review?

- Appropriate breadth and depth
- Rigour and consistency
- Clarity and brevity
- Effective analysis and synthesis
- Use of the literature to justify:
  - The particular approach to the topic
  - The selection of methods
  - That your research contributes something new



# Organizing the Literature Search: *the Tree Diagram*



# Writing the Literature Review

- Always begin with an introduction to the review & end with a summary
- Make the connection for the reader between the subtopics & the topic
- Use direct quotations infrequently
- Always cite your sources
- Present your knowledge on the topics & subtopics
- Summarize each subtopic
- Include a transition paragraph from one subtopic to the next

# Your literature review in context

- Your thesis must form a coherent whole
- Your literature review should be clearly linked to:
  - Your justification for carrying out the study
  - Your aims and objectives
  - Your choice of research design
  - The methods used to collect data
  - Your discussion of the results
  - Your conclusions and recommendations

# Purpose of Referencing

- Referencing systems are used for the following reasons:
  - To accurately identify source material for key concepts and ideas
  - To use the authority of a key source to support your ideas
  - To demonstrate broad understanding and familiarity with the field
  - To direct interested readers to the original sources.
  - To contrast different approaches or results from previous studies
  - To avoid plagiarism!

# Referencing Requirements

- Any material extracted directly from another source without alteration must be referenced
- This includes:
  - Quoted text or equations
  - Figures, schematics, tables
  - Source code (software or simulations)
  - Hardware details

# Referencing Requirements

- You must also reference any concept or idea discussed in the text which is:
  - Paraphrased but derived from a source, and
  - Not common knowledge
- Example:
  - Ohm's law would not need to be referenced
  - Kalman filtering should be referenced

# Referencing Systems

- There are two major classes of referencing system:
  - In Text Referencing (Example : Harvard or Author/Date)
  - Numeric Referencing (Example : IEEE)
- You are free to choose from these styles, but:
  - IEEE is the recommended style
  - You must be consistent throughout the document.

# IEEE Referencing System

- References are numbered according to the order that they are cited in the text
- Sources have the same number throughout the document
- Each citation number is enclosed by square brackets on the text line. E.g. “This is an IEEE reference [4].”
- Do not state “In reference [3]...”
- State “In [3] it was found...”



# IEEE Referencing System

- Author names need not be mentioned.
- If they are to be mentioned:
  - Up to six authors can be mentioned in the text
  - Only the first author is preferable - followed by:  
*et al.*
  - E.g. “Jones, Watson and Harris defined ... [4]”
  - E.g. “Clark *et al.* demonstrated that ... [3]”
- Do not include source titles, dates, etc. in the text.

# IEEE Referencing System

- To cite more than 1 source:
  - [1], [2], [6] or [1, 2, 6]
  - [6] – [15] or [6 – 15]
- Citations should be in plain font :-
  - No text formatting such as Superscript/  
Subscript/Italics

# IEEE Referencing System

- The Reference List:
  - In numerical order – i.e. the order of citation
  - Significant words in the source title must be capitalised
  - First word in article titles, papers, theses must be capitalised
- General Format:
  - Author, “Article or book title,” Source Title, Source information, Date, Pages.

# Examples

- Books

- [1] G. O. Young, “Synthetic structure of industrial plastics,” in *Plastics*, 2nd ed., vol. 3, J. Peters, Ed. New York, McGraw-Hill, 1964, pp. 15–64.
- [2] W.-K. Chen, *Linear Networks and Systems*. Belmont, CA: Wadsworth, 1993, pp. 123–135.

# Examples

- Journal Proceedings and Periodicals
  - [3] J. U. Duncombe, “Infrared navigation—Part I: An assessment of feasibility,” *IEEE Trans. Electron Devices*, vol. ED-11, pp. 34–39, Jan. 1959.
  - [4] E. P. Wigner, “Theory of travelling-wave optical laser,” *Phys. Rev.*, vol. 134, pp. A635–A646, Dec. 1965.
  - [5] A. Kurnia, H. Cherradi, D. M. Divan, “Impact of IGBT Behaviour on Design Optimisation of Soft Switching Inverter Topologies,” *IEEE Trans. Ind. Applicat.*, Vol. 31, No. 2, March/April 1995, pp. 280 – 286.

# Examples

- Conference Proceedings

- [6] D. B. Payne and J. R. Stern, “Wavelength-switched passively coupled single-mode optical network,” in *Proc. IOOC-ECOC*, 1985, pp. 585–590.
- [7] V. Agelidis and M. Calais, “Application Specific Harmonic Performance Evaluation of Multicarrier PWM Techniques,” in *Proc. IEEE Power Electronics Specialists Conference (PESC)*, 1998, Japan, pp. 172 – 178.
- [8] D. Ebehard and E. Voges, “Digital single sideband detection for interferometric sensors,” presented at the 2nd Int. Conf. Optical Fiber Sensors, Stuttgart, Germany, 1984.

# Examples

- Standards and Patents

[8] G. Brandli and M. Dick, “Alternating current fed power supply,” U.S. Patent 4 084 217, Nov. 4, 1978.

- Websites

[9] Computational, Optical, and Discharge Physics Group, University of Illinois at Urbana-Champaign, "Hybrid plasma equipment model: Inductively coupled plasma reactive ion etching reactors,"

<http://uigelz.ece.uiuc.edu/Projects/HPEM-ICP/index.html>. Last accessed: 11 December 2014

# Examples

- Application Notes and Data Sheets
  - [10] Hewlett-Packard, Appl. Note 935, pp. 25-29. May 14 2004.
  - [11] Fairchild Semiconductor. Data Sheet MM74HC74A, pp. 3 – 4, January 12, 2001, <http://www.fairchildsemi.com>.
- Thesis or Dissertation
  - [12] H. Zhang, "Delay-insensitive networks," M.S. thesis, University of Waterloo, Waterloo, ON, Canada, 1997.



