Literature Reviews and Search Strategies

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Session overview

- What is a literature review?
- How to formulate a search strategy
- Identifying resources
- Utilising resources effectively
What is a literature review?
• Reviews have always been part of Scientific Literature

• Experts have always sought to collate existing knowledge and publish summaries on specific topics.
A literature review is a critical, in-depth evaluation of research already undertaken on a specific topic by accredited scholars and researchers.
What a literature review is

- A literature review surveys scholarly articles, books and other sources (e.g. dissertations, conference proceedings) relevant to a particular issue, area of research or theory.

- It provides a description, summary and critical evaluation of each work.

- It’s overall purpose is to provide a critical evaluation of significant literature published on a topic.
N.B. A literature review itself, does not present any new primary scholarship.
Purpose of a literature review

• Assess the contribution of existing literature to the subject under review.

• Allows you to demonstrate your ability to identify relevant information and to outline existing knowledge.

• Allows you to identify any gap in the research thereby providing a rationale for your own.
What is a systematic literature review?

- A clearly formulated question
- Definition of methods that will be used to perform the review.
- Defined search strategy to identify all available research data relevant to a particular research question.
- Evaluates, appraises, selects and synthesizes the data by use of explicit methodology
Systematic Review Process

Records identified through database search: (n = 601)

Additional records identified through other sources: (n = 19)

Records after duplicates removed: (n = 533)

Abstracts reviewed (n = 124)

Records excluded (n = 991)

Full-text articles assessed for eligibility (n = 26)

Full-text articles with reasons in table 2 (n = 1)
Systematic Reviews

Includes both published and unpublished studies

STUDY 1

STUDY 2

STUDY 3

STUDY 4

Rigorous analysis and appraisal of individual studies

Systematic Review
Why is it important to be systematic?

- Summarises existing knowledge on topic effectively
- Peer reviewed protocol to establish
  - search strategy
  - selection criteria for resources to be included /excluded
- Findings can be replicated.
Famous Case

- **Single** research paper published in 1998, based on **12 children** suggested MMR vaccine could cause Autism.

- Worldwide scare – reduced uptake of vaccine, potentially very serious consequences for public health.

- Definitive systematic review by Demicheli et al disputed these findings.

- Example of where a systematic review helped clarify a vital public health issue.
Systematic Review

- Well defined methodology means results are less likely to be biased.

- If studies give consistent results systematic reviews provide evidence phenomenon is robust and transferable.

- Most needed when there is a substantive question and several primary studies.
How to formulate a search strategy
Prior to searching any resource, look at your topic and decide:

1. What are the component issues?
2. What are the primary keywords / phrases in my topic?
3. What alternative keywords or synonyms represent each of these key topics?
Remember, a well defined research question is central to an effective search strategy.
Ask yourself

Is your research question?

- Specific -
- Focused -
- Clearly formulated -
- Well defined -
Problem formulation

What do you need to find out?

What are the component issues?
Decide your keywords

Keywords

A list of primary keywords (incl synonyms)
Identifying resources
Where to Start?

Literature Search

What resources do you need to consult?
How do you identify all potential data?

- Search multiple bibliographic databases
- Scan bibliographies of existing reviews and eligible studies
- Scan conference proceedings
- Hand search key journals
- Forward citation search of seminal articles (WoS)
- Contact scholars working in the area
- Search Internet
Assessment of literature

- **Provenance** - What are the author’s credentials?

- Are the **arguments** supported by **evidence**
  (e.g. primary historical material, case studies, narratives, statistics, recent scientific findings)

- **Objectivity** – is author’s perspective even-handed?

- **Value** - Are the arguments and conclusions convincing? Does the work contribute in any significant way to an understanding of the subject?
Top 5 Science Journals (Impact Factor)

1. Nature
2. New England Journal of Medicine
3. Science
4. The Lancet
5. Cell
Evaluating the literature

Analysis & Interpretation

Evaluate findings and conclusions of pertinent literature.
Utilising resources effectively
Search Techniques

How to

- Understand how searches work in a database
- Create a broad or narrow search
- Maximise relevant results
DATABASES
are like scuba diving: They let you get deeper.
Searching Databases

200+ bibliographic, journal and e-book databases

Are listed by **name** and **subject** on library website

Identify databases relevant to your subject area
Database Searching

Using PubMed as an example
PubMed

- PubMed comprises more than 23 million citations for biomedical literature from MEDLINE, life science journals, and online books.

- Citations may include links to full-text content from PubMed Central and publisher web sites.
To facilitate search retrieval by eliminating (or accounting for) the use of variant terminology for the same concept.
MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

For example when searching for German Measles it recommends you use the term Rubella.
Boolean Operators

AND
OR
NOT

These three Boolean operators allow you to combine terms to narrow or broaden your search.
Boolean Operators

AND - **narrows** (combines)
Boolean Operators

OR - broadens (either /or)
Boolean Operators

NOT- narrows (excludes)
Tips to narrow search

To narrow

- Combine by using **And** operator
- Phrase Searching

Limit your search by
- language
- date range
- type of publication etc.

**Example**

- “drug addiction” **AND** teenager, english language only
Tips to broaden search

To Broaden

- Use the operator Or
- Remove some search terms, or use more general terms
- Truncate your search term
- Think of alternative spellings
- Wild card operators
Search Techniques

Examples

• “back pain” OR “back ache”

• **Truncation**: \( \text{therap}^* \); therapy; therapies; therapeutic; therapeutics;

• Organisation or organization, connexion or connexion, defence or defense, theatre or theater

• Wildcard operator behavio?r = behaviour or behavior
What causes some children to be bullies?

What causes some children to be bullies?

- Decide keywords
- Look at synonyms
  - Truncation
  - Combine Terms
Help Available

- Always useful to check out the help section on the database
- Will tell you what wildcard and truncation symbols are
- Give sample searches.
Elements of a literature review

• Overview of the topic

• Objectives of the review itself.

• Categorise positions taken – in favour, against and alternative viewpoints

• Compare and contrast them.

• Which arguments are the most convincing and why?
- **Stella Catalogue** – works like a search engine – shows entries with search terms weighted by relevance

- **Classic Catalogue** - A-Z index

Coverage same in both
Trinity College Catalogues

- Stella
- Classic
- Accessions (1872-1964) (80% of this catalogue also in Stella/Classic)
- 1872 Catalogue online (pre 1872)
- Marloc – 20,000 manuscripts & archives from 13 C
- Digital Collections - books, maps, paintings, manuscripts & photographs.
Database providers linked to Stella

- EBSCO
- JSTOR
- ProQuest
- ISI

Chosen for multidisciplinary coverage
- Area Studies (586 titles)
- Arts (1548 titles)
- Business & Economics (1924 titles)
- History (7510 titles)
- Humanities (7725 titles)
- Law (785 titles)
- Medicine & Allied Health (579 titles)
- Science & Maths (2731 titles)
- Social Sciences (10592 titles)
• Dissertation & Theses

• Historical Newspapers
  • Guardian (1821-2003)
  • Observer (1791 – 2003)
  • Irish Times (1859 – 2007)
  • Times of India (1838- 2007)

• ProQuest Nursing & Allied Health Source
• Science Citation Index (1945-)
• Social Science Citation Index (1956-)
• Arts & Humanities (1975-)

Access to current & retrospective information from approximately 8,700 research journals.
Library Website

- Library catalogues
- Library e-resources (books, journals & databases)
- Subject Guides

[www.tcd.ie/Library](http://www.tcd.ie/Library)

* Can be accessed off campus
Trinity & Beyond

- Inter-library loans

Other Libraries

- ALCID Card
- Letters of Introduction
- MusicPAL
ALCID Research Card

Academic Libraries Co-operating in Ireland

ALCID Scheme is open to Masters and Doctoral Students
Home Institution - TCD

Name:

ID Number:

Signature:

Valid Until September 30th 2014

This card is only valid with Institutional/Library ID

See reverse for details of participating libraries
This card gives admission without borrowing rights to the libraries of DCU, TCD, UCD, NUI Maynooth, Royal College of Surgeons in Ireland, Royal Irish Academy, Mater Dei Institute, St. Patrick’s College Drumcondra, UL, NUI Galway, UCC, DIT, Mary Immaculate College, St. Angela’s College Sligo, NCAD, DIAS and University of Ulster.

*It is advised that your first visit should be during office hours.*
Duty Librarian Service (BLU)

### Berkeley Lecky Ussher

**Hilary and Trinity Terms: Thursday 2 January 2014 - Saturday 24 May 2014**

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**All Libraries Closed:**

- St. Patrick’s Day: Monday 17 March 2014
- Easter: Friday 18 April - Monday 21 April 2014
- May Bank Holiday: Monday 5 May 2014
### Opening Hours

#### Hamilton

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Further Support:

- Find out who your subject Librarian is
- Duty Librarian service
- Library website.