How to Conduct an Effective Literature Search and Manage the Results

BAE 815
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“The greatest part of a writer's time is spent in reading, in order to write: a man will turn over half a library to make one book.”

- Samuel Johnson
Research Lifecycle

Imitating  Analyzing  Innovating
Purpose of Literature Search

✓ Understand your topic
✓ Nurture good taste in research
✓ Develop critical thinking
Understand your topic

• Identify variations in definitions used by researchers and define your terminology.

• Identify appropriate research methodologies and validated instruments.
Nurture good taste in research

• Read selectively
  – Only abstraction < 20%
  – Introduction & conclusions ~ 50%
  – Methods, results and details > 80%
Develop critical thinking

• Identify general patterns in research.

• Identify main gaps in knowledge.

• Identify principal areas of dispute and uncertainty.

• Juxtapose studies with conflicting findings and explore explanations for discrepancies.
Sources of Search
Types of Literature

• Primary literature
  – Present new data and contains personal views of experimenters about the data
  – Peer reviewed

• Secondary literature
  – Derived from primary literature (reviews, textbooks)
  – Not peer reviewed, less reliable

• Tertiary literature
  – Index or textual condensation of primary and secondary sources (dictionaries, encyclopedias, Wikipedia...)

Biological and Agricultural Engineering

K-STATE Research and Extension
Sources of Search

- Library catalogues: Books
- Research databases: Journal articles
- Internet, Google Scholar...
Going Beyond Google

Convenient but has limitations

"If it is on the Internet then it must be true, and you can't question it."
- Abraham Lincoln
Research Databases

- Academic, reliable, and up to date.
- Each database has some unique searching features.
- The cost of databases are paid by the library, and you are allowed to access them without charges.
Searching strategies
Generating key words (search terms)

Creating a well-focused question

Breaking down your questions into concepts
Example

“The effects of television violence on children”

- Television/ TV /adverts / DVD etc
- Violence/aggression
- Children/teenagers/youth
- Parental control? Peer pressure?
- Crime? Psychological?
Run Your Search by Concepts

• Identify subject headings for each concept

• Think of alternative keywords or terms for each concept, and search each concept separately

• Combine terms for the same concept with “OR”

• Combining concepts using “AND”

• Put any “NOT” terms at the end.
Running your search(es)

Concept 1
Search #1 =
Search #2 =
Search #3 =
Search #4 =

Search #5 = #1 OR #2 OR #3 OR #4

Concept 2
Search #6 =
Search #7 =
Search #8 =
Search #9 =

Search #10 = #6 OR #7 OR #8 OR #9

Search #11 = #5 AND #10

Results
Controlled Vocabulary

A controlled vocabulary is a set of established terms
• every term represents a single concept
• only one term is used for that concept

Example: Many words can be used to represent the concept "people who teach."

- teachers
- faculty
- instructors
- professors
- tutors
- educators
- lecturers, etc.

In a controlled vocabulary, one of these will be chosen to represent the concept.

MeSH = Faculty
- Faculty, Dental
- Faculty, Medical
- Faculty, Nursing, etc.
Controlled vocabulary searching

- Find out what the controlled vocabulary term is for each concept.
- Can make your search more precise and easier.

Free-text (keyword) searching

- Have to think of every possible synonym or alternate spelling of your search terms and include all of them in your search.
Limitations with controlled vocabularies searching

- New concepts take time to be added
- There is often a lag phase during which the newest articles aren’t indexed
- NOT all databases use a controlled vocabulary
Test your searching strategy

• Checking to see if your “target articles” appear in the results.

• Judge not by what you have retrieved but by what you may have missed!
Citation Searching

• Find a key reference
  – Trace backward: follow its reference list
  – Trace forward: follow all references that cite it
  – Look at subject indexing for the key reference and use to modify your search terms

• A feature of Web of Science: citation map
Hand searching

• Identify key journals in your field and browse them cover to cover

• Identify important authors and leading research group in your field and follow their work
Keeping Up to Date

• It is an iterative process.
  – You must do it from time to time throughout your course of research.
  – Documenting your search.
Working with Your Results
Get Organized Early On!

• Combine search results from each database
• Remove duplicates
• Remove inappropriate studies
• Rank important studies
Manage Your References

• Specialist software (all owned by Thomson Scientific – who also own Web of Knowledge)
  – EndNote
  – ProCite
  – Reference manager
• Web-based services
  – EndNote Web
  – RefWorks
  – Zotero
What can they do?

• Manage references
  – Store, organize and share. May store links to documents or pdf files within database.
  – Search external databases from within the reference management software, and save references retrieved.

• Format references
  – Get reference list generated automatically.
  – Allow you to change the reference style in few clicks.
Choose Your Tools

• EndNote
  – Must be purchased and installed on your machine
  – Doesn’t require a web connection to access your downloaded records

• EndNote Web, RefWorks
  – Free to members of university but may has limited feature
  – Web based – access your records anywhere

• Reference Manager
  – Best for group use
A Quick Look at EndNote Web

Organize / Share references

Format references

Manage your account

Manage references

Collect references

1. Collect
   Collect references from electronic and traditional sources.
   - Search online database
   - Create a reference manually
   - Import references

2. Organize
   Organize your references for your research topics and papers.
   - Create a new group
   - Share a group
   - Find duplicate references

3. Format
   Create a formatted bibliography for your paper or cite references while you write.
   - Create a formatted bibliography
   - Cite While You Write™ Plug-In
   - Format a paper
Add References

ISI Web of Knowledge®

Results Topic=(*post trauma* Stress*)

Results: 3,219

1. Title: Memory functioning following terror attack and the suggested immunization by religious faith
   Author(s): Gigi A, Papirniak M, Haggel N
   Source: STRESS AND HEALTH Volume: 23 Issue: 3 Pages: 199-204 Published: AUG 2007
   Times Cited: 0
   Link: Full Text

2. Title: Changes in cortisol and DHEA plasma levels after psychotherapy for PTSD
   Author(s): Olff M, de Vries OJ, Ouzelan Y, et al.
   Source: PSYCHONEUROENDOCRINOLOGY Volume: 32 Issue: 6 Pages: 619-626 Published: JUL 2007
   Times Cited: 0
   Link: Full Text

3. Title: Delayed recall of childhood sexual abuse memories and the awakening rise and diurnal pattern of cortisol
   Author(s): Smeets T, Obaerts E, Jelicic M, et al.
   Source: PSYCHIATRY Volume: 152 Issue: 2-3 Pages: 197-204 Published: AUG 30 2007
   Times Cited: 0
   Link: Full Text

4. Title: Comorbidty and personality traits in patients with different levels of posttraumatic stress disorder following myocardial infarction
   Author(s): Chung MC, Berger Z, Rued H
   Source: PSYCHIATRY Volume: 152 Issue: 2-3 Pages: 243-252 Published: AUG 30 2007
   Times Cited: 0
   Link: Full Text
Search from within EndNote Web

Online Search

Step 1

Select database or library catalog connection.

PubMed (NLM)

Connect

Access hundreds of external databases,
## Share References with Collaborators

### Manage My Groups

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Install the “Cite While You Write” Plug-in

Use the EndNote Web Plug-in to insert references, and format citations and bibliographies automatically while you write your papers in Word. The EndNote Web Plug-in also allows you to save online references to your library in Internet Explorer for Windows.

See Installation Instructions and System Requirements.

- Download Windows with Internet Explorer plug-in
- Download Macintosh
EndNote Web Tool-bar in Word

Locate the tool-bar and click “EN Pref” button to access your account
Inserting Citations While You Write

1. After typing the text, click in the tool-bar
2. Find and select the references
3. Click “Insert” button
The case study indicates that the hypothesis suggested is correct. (1-3)

References

Change the Reference Style

1. Click the button in the tool-bar

2. Select output style from the drop-down menu
The case study indicates that the hypothesis suggested is correct. (Balzer et al., 2008; Basham and Miracle, 1998; Belov et al., 2009)

References


Let’s do a little group work

- Write down your research question, break down your questions into concepts.

- Which database or search engine do you use for your literature search?

- What tools do you use to organize your literature? Share your experience.
Quick overview of EndNote

• Available on all networked PCs at LSE
• Using Version X.4
• Available off campus via the Remote desktop
• Imports records from Library Catalogue and some databases
A quick look at EndNote

• Now in version 13 – EndNote X3
• Good backwards compatibility with earlier versions
• Easy to import/export to other reference management software
• ALWAYS KEEP BACKUPS!
EndNote

• Offers sophisticated, flexible tools for organizing references and PDFs and for creating bibliographies
• Offers most comprehensive array of citation output styles
• Link EndNote records to PDFs and other types of documents saved on your hard drive
• In EndNote version X2 and higher: download article PDFs automatically
• Can add figures and tables to your EndNote library
• Use UC-eLinks to find the full text of the article from within EndNote
• EndNote software must be purchased and installed onto your computer
• Best option for large research projects
EndNote

http://www.endnote.com/

- Personal Bibliographic Database
- Imports from hundreds of reference formats
- Saves MeSH Terms and URLs of References
- Powerful Search and Sort Methods
- Connects directly to PubMed, Biosis and other sources
- Integrates directly with Word
- Automatically formats bibliographies and footnotes
- Formats citations & references for hundreds of journals
- Complete user control of formatting
RefWorks

• Web-based, so it can be used on all operating systems, at any computer connected to the Internet
• Format bibliographies in Word
• Direct import available from most article databases
• Import citations from RSS feeds
• Full-text access to most articles is easy: UC-eLinks works inside RefWorks
• Good for collaborative projects: share a citation database, or create a group logon
• Easy to learn and use