Unlocking Academic Articles : Smart Database Search

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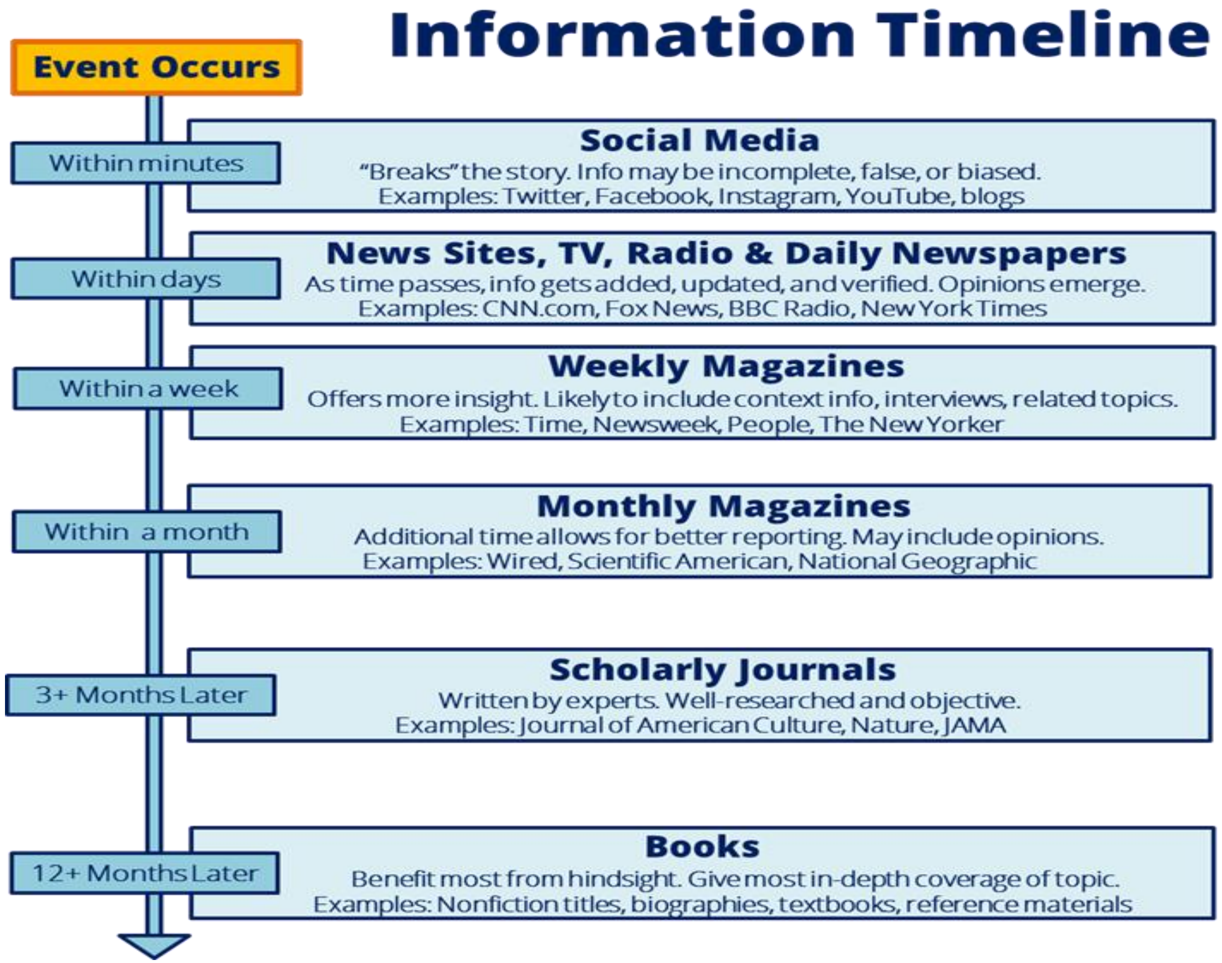
Learning objectives

- Identify relevant sources of information.
- Distinguish different types of information resources.
- Become familiar with criteria to evaluate information resources.
- Build a search strategy.
- Use the advanced search techniques for the most relevant search results.
- Locate the best information resources for an effective literature search.

Information timeline

- Information sources become available in the order in which an event occurs.
- The latest information can be a deciding factor in identifying the best source.
- The graphic shows an example of an event that occurs and the type of information sources that are then produced.



Source: University of Michigan. n.d. "Step 2: Identifying Information Sources: Library Skills." Accessed June 25, 2021. https://umich.instructure.com/courses/83460/pages/step-2-identifying-information-sources.

Types of information sources

Primary sources	Secondary sources	Tertiary sources
• First formal appearance of results • Present the original idea • New research or theories are first revealed • Allow researchers to get as close as possible to original ideas, events, and first-hand research • **Examples**: Interviews, analyzed field data, original experiments or research	• Interpretations and evaluations of primary sources • Analyze, review, or summarize information in primary sources & other secondary sources • Rely on other secondary sources and standard disciplinary methods to reach results • **Examples**: Review articles, journal articles, academic books, dissertations	• Information based on both primary and secondary sources • Provide data within a context which can help the researcher interpret the information • Provide facts and brief descriptions of key information • Present summaries and general information • **Examples**: encyclopedias, textbooks, indexes, bibliographies

Advantages and Disadvantages

Type of source	**Advantages**	**Disadvantages**
Primary sources	· Original data · Unbiased information	· Large volume of data · Time consuming
Secondary sources	· Rapid access to primary literature · Generally high standard journals · The ability to perform complex searches · Routine updates on selected topics (alerts)	· Time lag · Command language varies · Proficient search skills are needed · Can be expensive
Tertiary sources	· Easy access · Easy to use · Concise · Relatively inexpensive	· Time lag · Outdated · Incomplete information · Incorrect interpretation

Information resources

- **Newspapers**: are a collection of articles about current events usually published daily.
- **Magazines:** are a collection of articles and images about different topics of popular interest and current events (e.g., ‘National Geographic’, ‘People’).
- **Trade journals:** are a collection of news, trends and articles for a specific industry written by professionals, and experts in that field. (e.g., ‘APA Monitor’, ‘Advertising Age’).
- **Academic (peer reviewed) journal** is a collection of articles written by scholars and peer reviewed by experts in the field.
- **Book (monograph):** can cover any topic, fact or fiction in a volume. For research purposes, it is better to use books which are subject specific.
- **Theses:** A thesis or dissertation is a document containing the author's research and findings and is submitted by a student for an academic degree or professional qualification.
- **Conference Proceedings:** are a collection of published papers presented at an academic conference.

Information resources cont.

- **Reference materials:** refer to encyclopedias, dictionaries and thesauri. They are a collection of short factual entries written by different contributors.
- **Report (working, technical):** is a separately published record of research findings, research in progress or other technical findings, usually classified with a report number and sometimes a grant number assigned by the funding agency.
- **Patent:** is a government authority or license giving a right or title for a set period of time, and the sole right to make, use or sell an invention.
- **Web sites:** are a set of related web pages typically served from a single web domain. All publicly accessible websites collectively constitute the World Wide Web.

What is an information access tool?

When starting a research project, it is important to know;

a. Where to find information,
b. What type of resources are offered in what kind of access service and platform.

- These services and platforms are called **access tools.** They are utilized to locate different types of information resources.
- **Please note,** not all access tools are free of charge!!!
- **Always** check your library for subscribed collections and tools available in your institution.

Types of access tools

1. Library catalogues & discovery tools – cover the library's collection including books, journals and any other material, allows one to search across all the subscribed content by library.

2. Databases - provided by the publishers for a fee or free of charge. They can cover articles, book chapters, proceedings and reports. They are particularly useful in finding academic content on specific subjects.

3. Repositories - consist of academic institutions' output including articles, proceedings, reports and research data e.g.

3. Indexes – these are bibliographic and citation indexes used for literature search as well as finding quality publications. They can be subject-specific or interdisciplinary, & sometimes include a full-text of the publications.

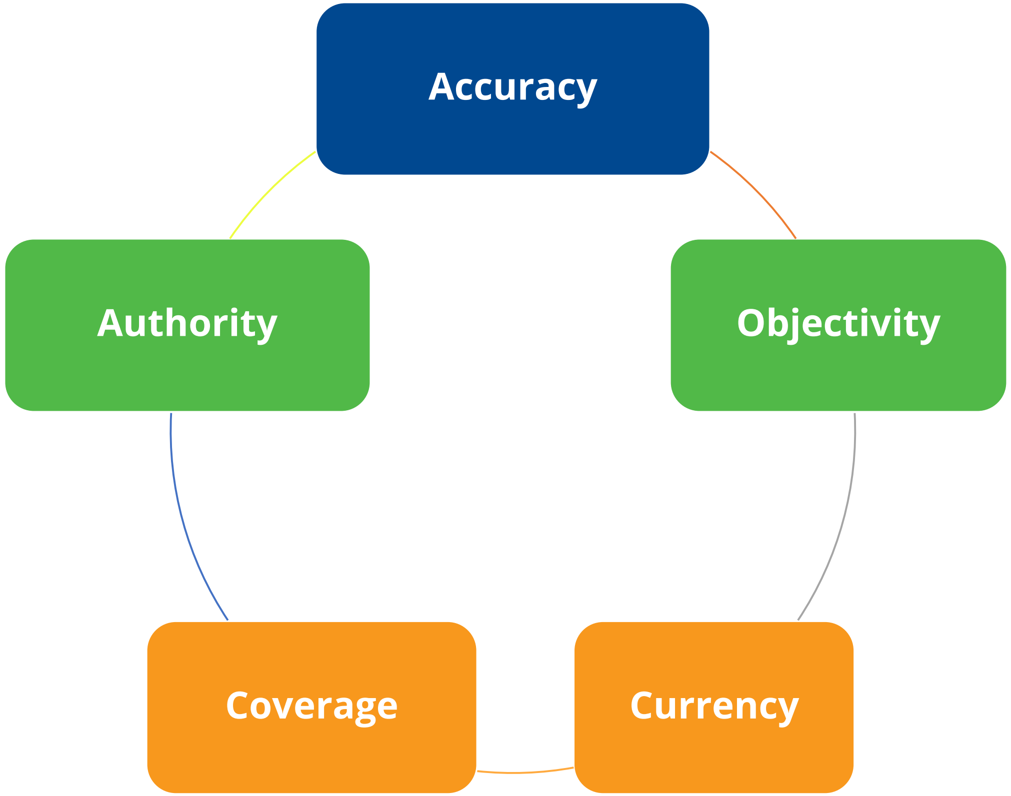
4. Search engines - they index any type of Internet source harvestable by the engines and provide information users with unlimited Internet sources. Google is the most used search engine in the world.

Evaluating information resources

In today's internet environment, anyone can be an author. As a result, not all information is reliable or true !

- Information resources should be evaluated accurately, particularly when online.
- Users must be able to critically evaluate the appropriateness of all types of information sources prior to relying on the information.

Key areas to consider when evaluating information resources



1. Authority

- Who is the author?
- Is the author affiliated to a reputable university or organization?
- What is the author's educational background or experience?
- What is their area of expertise?
- Has the author published in academic or peer reviewed publications?
- Does the author/Web Master provide contact information?

2. Accuracy

- Is the information provided based on proven facts?
- Is it published in an academic or peer-reviewed publication?
- Can you find when it was last updated?
- Is there an editor or someone who verifies/checks the information?
- Is the page free of spelling mistakes or other obvious problems?

3. Objectivity

- How objective is the information?
- What do you know about who is publishing the information?
- Is there a political, social or commercial agenda?
- Does the information try to inform or persuade in an inappropriate way?
- How balanced is the presentation in opposing perspectives?
- What is the tone of language used (angry, sarcastic, emotive, objective)?

4. Coverage.

- Does the information covered meet your information needs?
- Is the coverage basic or comprehensive?
- Is there an "About Us" link that explains subject coverage?
- Is the information relevant to your topic?
- Does this page have information that is not found elsewhere?
- How in-depth is the material?

5. Currency

- When was the information published?
- When was the web site last updated?
- Is timeliness important for your information needs?
- Are the links up to date and do they point to existing pages?

What is a literature search?

- A **literature search** involves finding out what other work has already been done in the field in which you focus.
    - It involves survey of publications and information on a specific topic.
- There are various **search strategies** for carrying out a literature search, mainly depends on the stage of your research.

1. Simple search - basic search

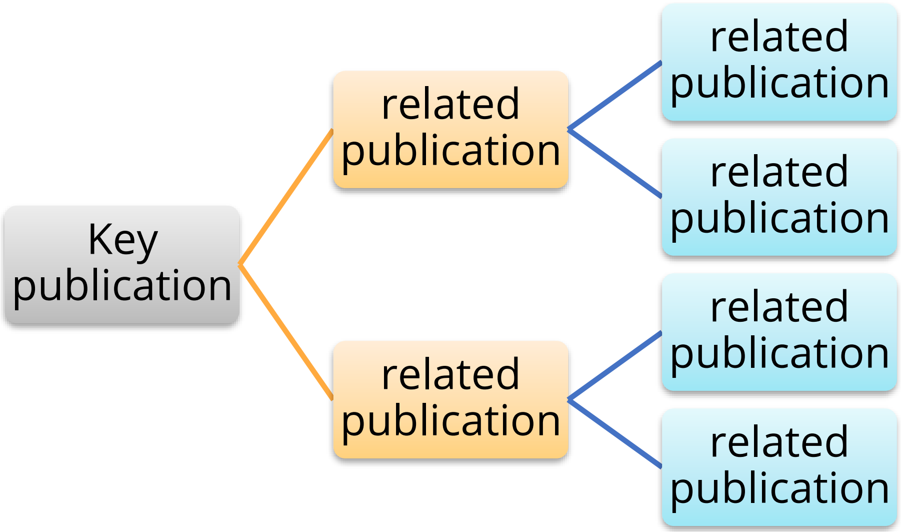
- This is a quick and first step search for online resources.
- Usually done through university library's databases or Google Scholar.
    - One can search by typing in a **single search term** or **phrase**
    - One can also search by typing part of bibliographic record e.g., title or journal name into the search engines to get the full bibliographic information.

2. Systematic search - building a query

- Requires a more comprehensive search strategy.
- Usually done for a complex piece of research which aims to identify, select and synthesize all research published on a particular question or topic.
- A systematic research consists of identifying search items, using **boolean operators**, advanced search techniques and building a query.

3. Following a thread - snowballing

- Snowballing involves using a key publications on your subject as a starting point.
- The references listed in your relevant publications lead you to other relevant publications.
- The snowball method helps to find a lot of literature about a subject quickly and easily.



What you should do!

- Collect background information in order to get an overview on the topic.
  - An encyclopedia provides a good start.
  - Newspapers & professional journals are useful for familiarizing yourself with current developments and opinions.
  - Books & review articles provide an introduction and overview of various aspects of the topic.
- Narrow your focus.
  - Turn your research focus into a question
  - The 4W+H questions are a great way to start: **What ? Where? Who? Why? How?**

The 4W+H questions

The given example topic is **“environmental issues and agriculture”**

For this example topic, drag each list of examples to the appropriate question.

Example topic: "Environmental issues and agriculture"

4W + H questions	Examples of answers
What? What environmental issues are related to agriculture?	
Where? Where are environmental issues most threatening to agriculture?	
Who? Who are affected by environmental issues in agriculture?	
Why? Why does the EU subsidise agriculture that promotes environmental issues?	
How? How do environmental issues impact agriculture?	

- Monocultures and biodiversity
- Medication in waste water

- Foreign pressure
- Industrial lobby

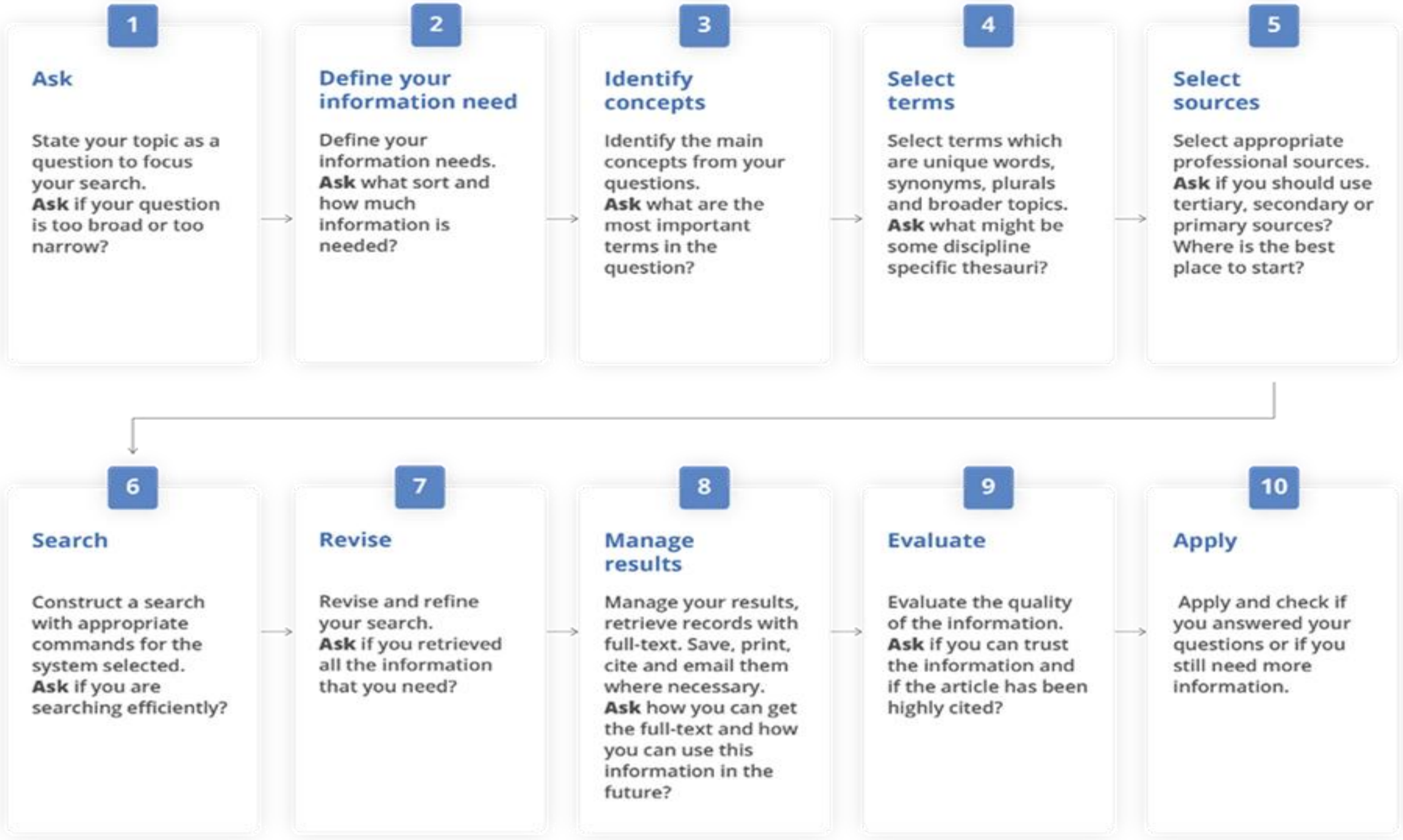
- Food Safety
- Pesticides
- Genetically Modified Food

- Consumers
- Farmers

- United States
- Developing Nations
- European Union

Source: https://library.wur.nl/infoboard/module_2/page14872.html Accessed, 27 June 2021

Developing a search strategy: Process overview



Source: https://www.who.int/hinari/training/Basic_Course/en/ Accessed 27 June 2021

Refining a search

"There is no such thing as the perfect search…"

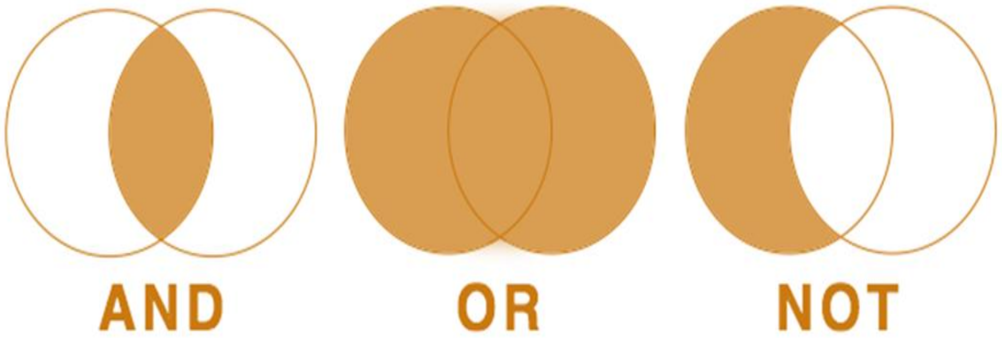
- **Think critically** and **judge** what information is relevant and appropriate for your purpose.
- A **filter** enables you to refine your search criteria further, by adding some additional search criteria.
- A filter can be applied before running a search or it can be used to refine search results after the initial search has been executed.

Search filters

- **Search filters** are used to evaluate & improve search queries appropriate information is retrieved.
- A simple search retrieves thousands of records, try different search strategies to get pertinent results.
  - E.g. A search on a broad topic such as “***globalization”*** or “***organisational behaviour***”, will receive too many results. Use a connected string words to retrieve a more manageable list.
  - Repeat the process to find the best match.
- Remember that all search strategies do not function the same way in all databases.

Boolean operators

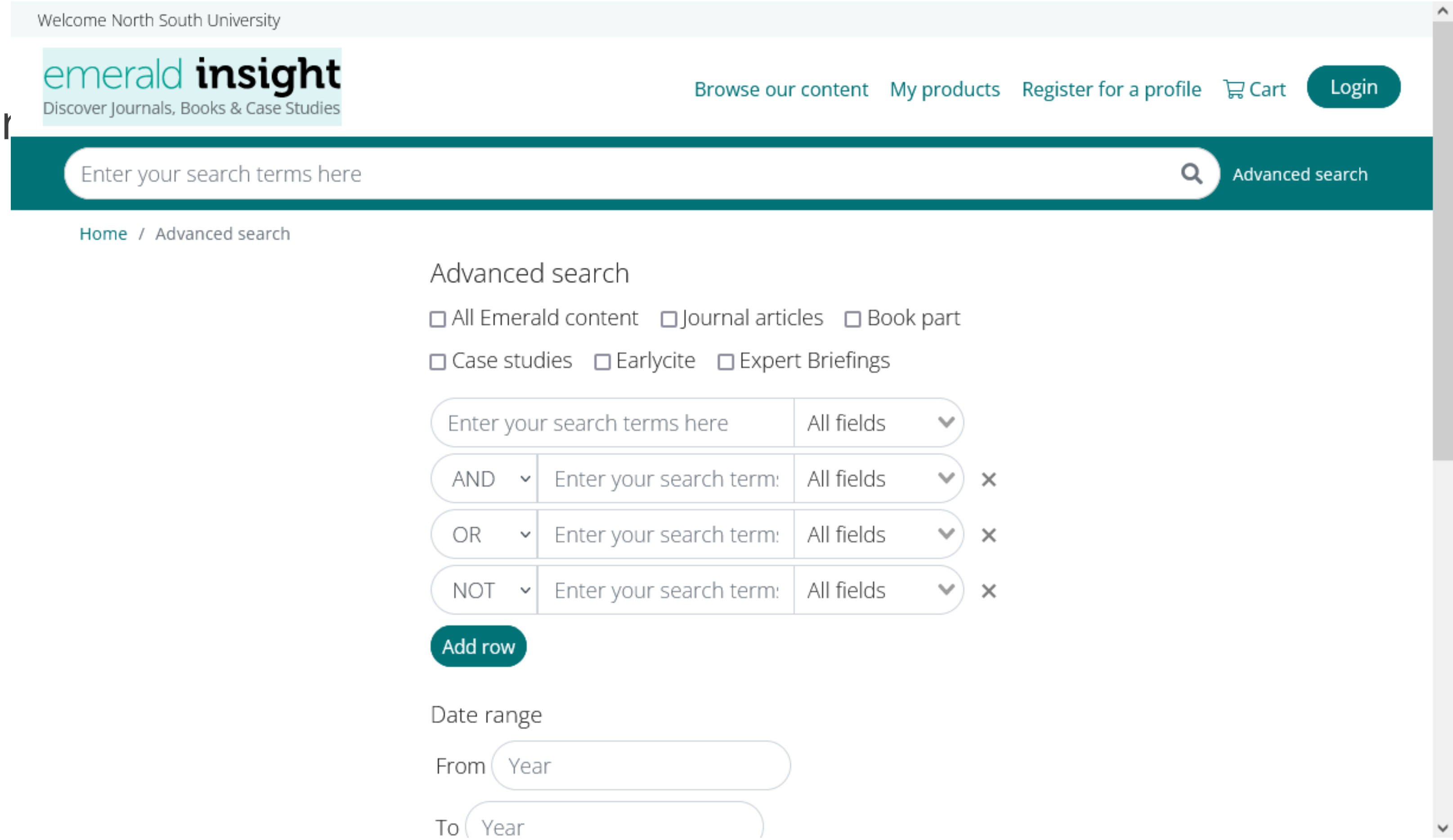
- Boolean search operators **(AND, OR, NOT)** connect terms and locate records containing matching terms.
- They strengthen the relevancy ranking in your search results.
- Booleans Operators can allow you to either narrow, broaden or exclude search results.
  - **AND** operator is used to combine two or more concepts and narrows a search.
  - **OR** operator is used to contain one or other terms and broadens a search.
  - **NOT** operator is used to exclude one or other terms and narrows a search.



Source: https://courses.lumenlearning.com/suny-fmcc-researchsuccess/chapter/search-statements/ Accessed April 6th, 2020.

Boolean operators example

- Visit https://www.emerald.com/insight/advanced-search
- Perform an Advanced Search
- use **(AND, OR, NOT)** operator
- Explore all the combinations
- See the results



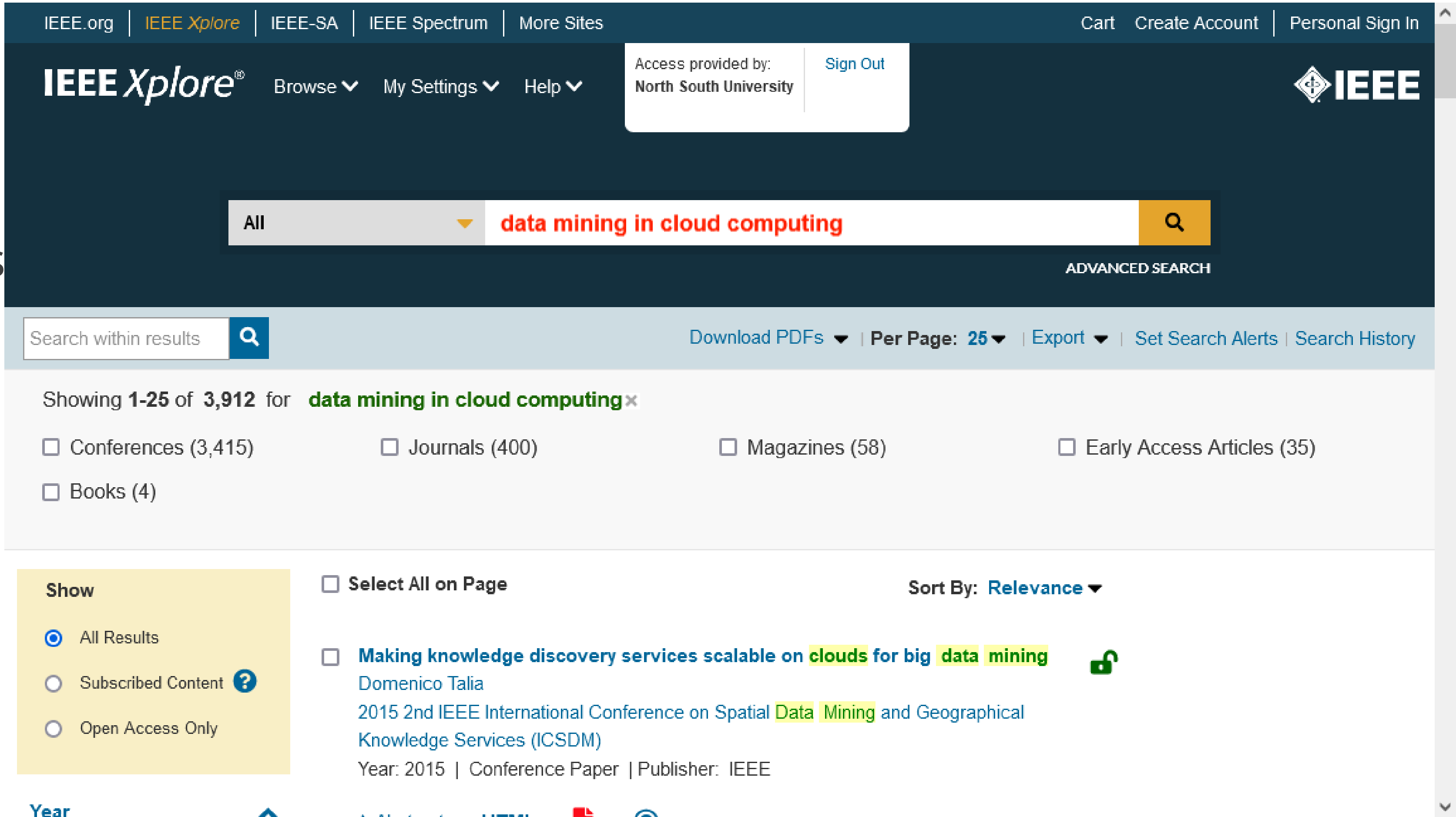
Parentheses and wildcards

These help to narrow your results and make your search more specific.

Phrase or proximity searching	**"…"** or **(…)** allows you to search for **an exact phrase** "crop plantation" and (soil condition)
Truncation/wildcards	***** or **$** allow you to search for alternative **spellings** child* for child OR childs OR children parasite* for parasite OR parasites
Alternate spellings	**?** can be used to substitute for characters anywhere in a word wom**?**n would search for "woman" and "women"

Parentheses and wildcards example

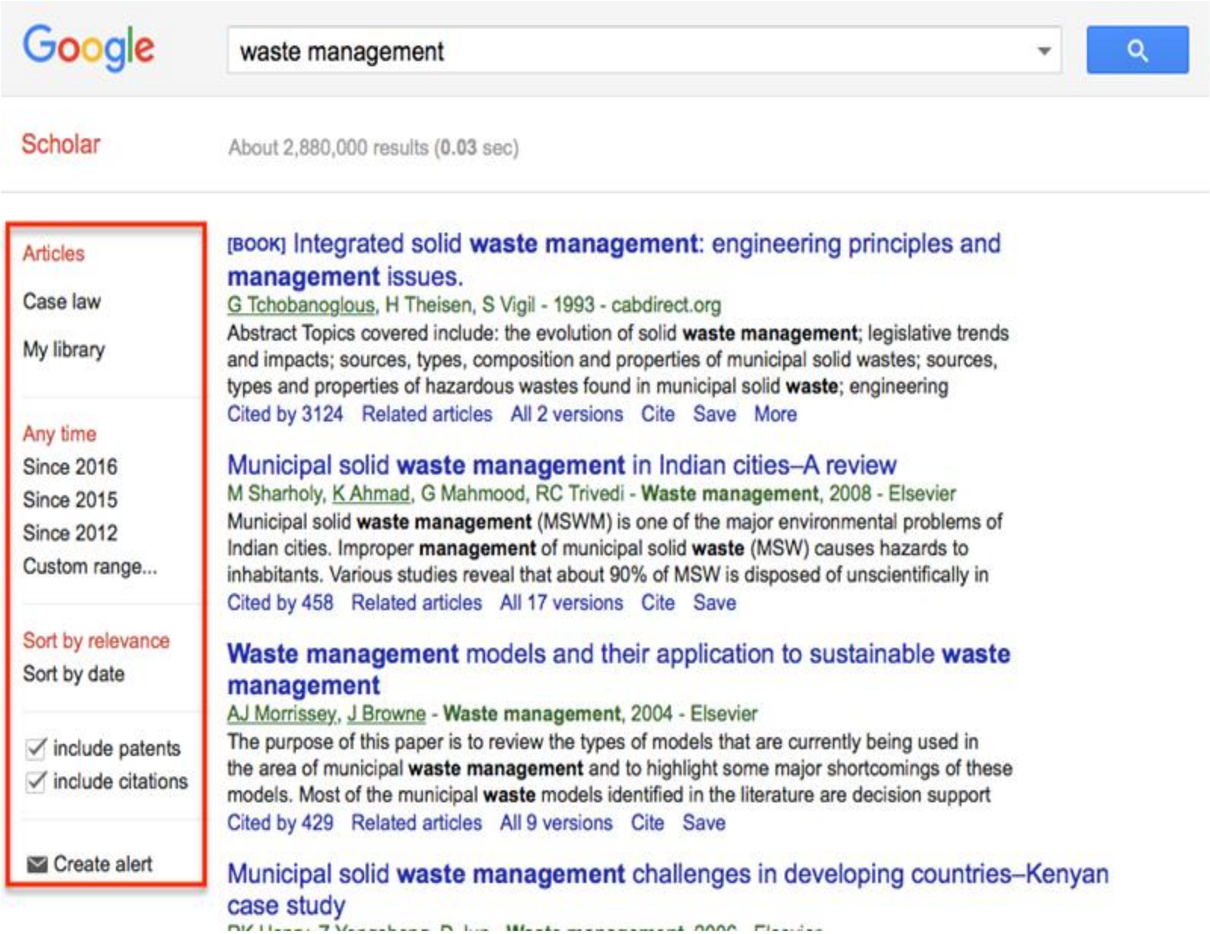
- Visit https://ieeexplore.ieee.org/Xplore/home.jsp
- Perform a Basic search
- Use parentheses
- Use wildcards
- Explore all the combinations
- See the results



Search limits

Most databases & search platforms allow you to limit a search by author, title, journal, date, and language etc

- You can use an advance search and refine your options on a search platform.
- Drop down menus are available.



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