Would you believe that:

- Every two days we create as much information as we did from the dawn of civilization up until 2003 [according to Eric Schmidt, Google CEO (2010)]
- Every minute up to 300 hours of video are uploaded to YouTube alone [Statista, 2015]
- More data has been created in the past two years than in the entire previous history of the human race.
- Human knowledge is doubling every 13 months—until 1900 it doubled every century [Buckminster Fuller, 1982]


It is much, much, harder to research in today’s world, than the world that most of your professors studied in! There is so much to sift through. In this session, you will learn how to find good information more effectively.

<table>
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<tr>
<th>Learning Objectives</th>
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<tr>
<td>o identify the purpose of literature reviews</td>
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<td>o identify the process for conducting literature reviews</td>
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<tr>
<td>o identify criteria for quality sources</td>
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<tr>
<td>o list online databases used for quality literature</td>
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<tr>
<td>o outline the ethical issues and scientific integrity components to research/literature</td>
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<tr>
<td>o differentiate between primary and secondary sources</td>
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<td>o demonstrate novice critiquing skills</td>
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**Pre-Assessment**

Raise your hand if you have:

1. Been in the library
2. Used the library website
3. Cited a source for a paper
4. Heard of APA

**Materials**

- Laptop/shared computer
- Access to libguide
- Markers for whiteboard

**Participatory Learning**

**Time** | **Instructor Activities** | **Learner Activities**
--- | --- | ---
15 mins | **Warm up**
On whiteboard: Where does information come from? [in general, not just for class projects]

- Potential answers: books, Internet, journals,

**Activity**: Students provide answers verbally

- Responses recorded on whiteboard
- Discussion: information comes from a variety of sources; types of sources- magazines, peer-reviewed literature, media; Publication cycles

**Follow up questions: what do you want your information to be like?**
- Potential answers: truthful, accurate, authoritative, easy to understand, quick to find, brief
- Emphasize authoritative and accurate information

**What do you want that information to do for you?**
- Potential answers: give me examples, give me ideas, help support my opinion, make my writing better, and get me a good grade.
- Make the case that they use the skills of finding and evaluating information every day and that they just need to take those skills and apply it to the library’s resources.

Ethical Issues & scientific integrality issues

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<th>15 mins.</th>
<th>STRATEGIZE</th>
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<td><strong>Discuss Types of Sources</strong></td>
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In order to find the information they need, students must first be able to clearly define their information need and understand what resources are available to them.

- Primary (original documents, original research, right from the source), secondary (discussion or summarizing of primary source, published later), tertiary (collections of primary and secondary information, such as encyclopedias)
- Peer-reviewed journal article, magazine article, newspaper article, blog post, book, edited book, reference source. – Distinguishing characteristics, intended audiences. Based on your information need, when is it appropriate to select a certain type of source?
  - Trade pubs – written by and for industry

**Activity:** Demo [retraction watch](https://www.youtube.com/watch?v=...). Have students browse website.


**Activity:** In groups, provide an example of a primary and secondary source. See this page after: [https://www.uvic.ca/library/research/tips/primvsec/index.php](https://www.uvic.ca/library/research/tips/primvsec/index.php)
Professionals. Provide specific information from inside the field.
- Written by and for people working in industry,
- Usually requires professional knowledge to fully understand articles
- Published by professional or trade orgs
- May adapt information originally published in scholarly journals
- Rare to see full citations.
- May not include info about the writer

- News article – most current information, different newspapers may be more thoughtful insightful, or provide in-depth analysis (ie. NYT)

- Popular magazine articles – Help generate ideas about a topic, issues, controversies, unanswered questions, which you may want to explore further. Often refer to other sources you can track down for more information.
  - Usually written by professional writers or journalists for general audience
  - Easily understood language
  - Rare to see full source citations
  - May adapt information originally published elsewhere
  - Information about authors not always included
  - Shorter than academic articles, usually

- Scholarly journals – A collection of articles, published regularly throughout the year. Present recent research. Written by experts. Published online, in print, or both.

- Scholarly journal articles – go through peer-review process before publishing. Written by experts in the field, whose purpose is to advance the ongoing body of work within a discipline. PR articles present original research data and findings, or take a position on a key question within the field. Can be difficult to read, because their intended audience is other experts and academics, but they are considered the most authoritative information.

Example: [https://www.lib.sfu.ca/help/research-assistance/format-type/what-journal-article](https://www.lib.sfu.ca/help/research-assistance/format-type/what-journal-article)
- Use scholarly/technical language.
- Articles tend to be long, detailed.
- Include full citations.
- Include information about authors.
- **Book reviews and editorials are not considered scholarly articles.

<table>
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<th>10 mins.</th>
<th>Identify Quality Sources</th>
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<td><strong>CRAAP, 5 Ws (Who, What, Where, When, Why), etc.</strong></td>
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**Authority:** The source of information. It is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required. Different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event). Ask yourself, who is the author/publisher/source/sponsor? Who wrote this? Are they trustworthy? What biases exist? What sources does the author use? What are the author’s qualifications to write on the topic? Is contact info provided? Is the person affiliated with an institution or organization? What does the URL indicate about the author or source? What are this author’s/publisher’s credentials? Can you find them? What is their reputation? What are other people saying about them?

**Currency:** timeliness of the information. Recently revised or updated? Are you looking for current or historical information?

**Relevance:** Suitability and appropriateness of the information. Is the level and depth of information appropriate? Who is the intended audience? Did you compare a variety of sources to determine which works best?

**Accuracy:** Reliability, truthfulness, correctness of the information. Is the information supported by evidence or sources you can verify? Is a reference list provided? Has the information been reviewed? Is the information free from spelling mistakes, poor grammar, typos, etc.? Is there evidence the resource may be biased? Does the page contain

- Peer-review process
- Types of articles - Literature review,
- What are databases? [https://youtu.be/Q2GMtIuaNzU](https://youtu.be/Q2GMtIuaNzU)

Activity: Do a search on ____ evaluate the page. Tell me what kind of a site it is, identify the information containers, discuss whether appropriate to cite.


PloS (relevance): [http://www.plos.org/ or Wikipedia](http://www.plos.org/ or Wikipedia)


AND


The purpose and objectivity should be clear. Is the information intended to teach, sell, entertain, inform, or persuade? Is it factual, propaganda, or opinion? Are there political, ideological, cultural, religious, institutional, or personal biases? Do the authors or sponsors make their intentions clear?

**Purpose/Scope:** What is a literature review?

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<th>40 mins</th>
<th><strong>GATHER &amp; ORGANIZE</strong></th>
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<tr>
<td></td>
<td>Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.</td>
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<td></td>
<td>Research process: <a href="https://www.youtube.com/watch?v=WB9pAZPJp_g">https://www.youtube.com/watch?v=WB9pAZPJp_g</a></td>
</tr>
<tr>
<td></td>
<td>Turn an interest into a research question: <a href="https://youtu.be/S_195zgQPkc">https://youtu.be/S_195zgQPkc</a></td>
</tr>
<tr>
<td></td>
<td>Experts see inquiry as a process that focuses on problems or questions in a discipline or between disciplines that are open or unresolved. Experts recognize the collaborative effort within a discipline to extend the knowledge in that field. Many times, this process includes points of disagreement where debate and dialogue work to deepen the conversations around knowledge. This process of inquiry extends beyond the academic world to the community at large, and the process of inquiry may focus upon personal, professional, or societal needs.</td>
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|         | Research in scholarly and professional fields is a discursive practice in which ideas are formulated, debated, and weighed against one another over extended periods of time. Experts understand that a given issue may be characterized by several competing perspectives as part of an ongoing conversation in which information users and creators come together and negotiate meaning. Experts understand that, while some topics have established answers through this
process, a query may not have a single uncontested answer. Experts are therefore inclined to seek out many perspectives, not merely the ones with which they are familiar. These perspectives might be in their own discipline or profession or may be in other fields. While novice learners and experts at all levels can take part in the conversation, established power and authority structures may influence their ability to participate and can privilege certain voices and information.

- Effectively search, modify search. Seek sources from diverse perspectives to broaden your POV.

**Library website and Octopus Overview**

Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops.

**Gathering**

- Do some background research to help understand context.
- Tip – Write your topic in the form of a question
- Selecting a database – BSN research & library guide, or database listing (by nursing or A-Z)
- Identify & use search language:
  - Search terms- keywords not sentences
  - Controlled vocabulary: SUBJECT searches
    - MESH
- Limiters:
  - Types of publications- limit to journals, etc.
  - Date – Last 5 years
  - Quotation marks and truncation symbols
  - Adding terms
  - Demographics
  - Database (if using OCtopus)
  - Citation tool
- Strategies to persist to overcome roadblocks
  - Broadening or narrowing search
    - Truncate to find variations of a term (ie. Crim* for crimes, criminal, crime)
    - Search for synonyms and variant spellings

**OCTOPUS activity: in groups**

Activity: find an article in Octopus

a) 1 minute brainstorm: write down as many words as possible related to hand washing. (ie. Sanitary, clean, germ prevention, children, seniors, soap)

b) 1 minute research question: can you take the terms and come up with a research question? (ie. How effective is hand washing at controlling the spread of germs vs. Is hand washing an effective method of controlling the spread of germs in seniors)

c) 10 minutes to find ONE ARTICLE about _______________. Doesn’t have to a be a perfect article, but an example of one that might be good

- Pick some keywords
- Write down:
  - the number of results you got with your first search
  - The subjects listed with some articles
  - Try using limiters on the left side: journal articles, peer-reiviewed, dates etc. Which ones did you try, and how did that effect the numbers?
  - Once you find a relatively good article- try out the tools on the right side of the page. Which
- Try broader or more general terms (ie. Canada instead of Alberta)
- Add more concepts to narrow a search
  - Modifying research topic based on results
  - Reviewing reference lists, using pointers to additional information (ie. Authors, footnotes, references, controlled vocabularies, etc.)
  - Utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best source) thinking when searching
  - Understand how information systems (i.e., collections of recorded information) are organized in order to access relevant information
  - Leave out words like compare, contrast, or provide. Stick to words that deal with your topic, not what you’re trying to do with your topic.
    - Select resources from diverse perspectives to broaden frame of reference
    - Appropriately record or save relevant sources
    - Understand that first attempts at searching do not always produce adequate results
    - Beware of ‘filter bubbles’

Debrief

- What are the features and contents of different research tools? (databases, catalogues, websites)
- What worked and what did not in your searches?
- What type of resource is your article? Journal, news etc.
- ones do you see yourself using?

Ask students to keep the article open

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<tr>
<th>Post-assessment</th>
<th>What are some ways to get fewer results?</th>
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**20 mins**

**ANALYZE & EVALUATE**

You need to be able to critically evaluate information sources for relevancy, accuracy, clarity, timeliness, authority, and context, and ensure there is sufficient support for the argument. As an informed member of the nursing community, and the broader society, you need to be able to critically evaluate information when presented to you.

- Review a work’s citation and abstract to determine relevancy
- Examine sources for depth of coverage, quality, and

- Understand and recognize the cultural, physical, social, and historical contexts of information sources to understand how they influence the content.

**USING INFORMATION ETHICALLY**

*Demonstrate ethical behaviour through your use of and creation of information. Your social responsibility.*

- Recognize implications for privacy, ethics, intellectual property and copyright.
- Provide proper attribution using a specific documentation style to acknowledge the research sources used.
- Apply author’s intended meaning when quoting or paraphrasing to accurately represent the content.

**APA basics:**

NRSU courses require APA citation.

**Questions:**

1. How many of you have cited before?
2. How many of you have cited with APA?
3. How many of you have cited with another citation style?

Simplest way to think about citations:

1. In-text: author, date [who, when]
2. Reference list: author, date, title, how to find it-publication information or URL [who, when, what, where]

Show library’s APA guide and discuss briefly how to use it

- Find different types of sources (book, article etc.)
- Different numbers of authors
- No date, no title, etc.
- Both in-text and reference list examples
- Becomes a little trickier with things like images.

**Activity:**

With the Octopus article you found, create an in-text and reference list citation (5 mins)

a) Write down the who when what where of the citation

b) Use the APA guide to figure out the right sentence case, punctuation etc.

If time permits: Exchange with another group. Check for errors
<table>
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<th>Hints:</th>
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<tbody>
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<td>- Use permalinks</td>
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**Post-Assessment**
What two elements do you need for an in-text citation?
What four elements do you need for a reference list citation?
How are reference lists organized?

**Summary**