February 24th, 2016: Defining and Creating Search Terms, Criteria, Search Strategies

When starting to search for articles on a topic new to you, selection of terms is the toughest part by far. 95% of your time, with my reasoning, is spent on selecting the search terms, creating the search strategy, and lastly applying the criteria required for the outcome. This webinar will discuss some tips to consider at each stage and then examples from the audience, submitted pre-webinar or at the webinar, will be explored as the ideas are put into action.

Search Terms: Importance, Brain Storming, Experimentation, Breaks

This is a fancy way of discussing what words (terms) are necessary to put in the database for retrieving the information needed. To select these terms, it is important to consider key words or concepts from assigned readings, terminology used in the professional literature or work place, and lastly everyday language. This sounds easy, right? It’s not and here is why.

Databases, as discussed previously, each have a specific terminology or index they use. Searching only one database can lull searchers (myself included) into thinking perhaps this terminology will be consistent, particularly if databases such as PubMed and CINAHL (Cumulative Index of Nursing and Allied Health Literature) are used. Ah hah – so both of these databases discuss medical subjects, but PubMed focuses on biomedical, clinical, and research leading up to clinical trials. CINAHL, by contrast, incorporates articles written by social workers, doctors, nurses, psychiatrists, and other professionals in health care settings.

This begs the question. How does one find these illusive search terms? How does one know what words will work in each database? The answer is simple and frustrating. One doesn’t without conducting searches to see how these all relate. Before starting this, though, try the following exercise.

*Brainstorming Exercise:*

1) Put the search topic as the heading of a sheet of paper, word document, Dry-Erase Board, Chalk Board, or something on which edits can easily be made.

2) For about 2-3 minutes, select the most important concepts or outcomes from the topic. Next, think of any terms that could potentially be relevant for each of the topic terms.

3) Group the words together that have something in common (anatomy, age range, etc). These terms are your search terms.

*Experimentation* – the key to success is trial and error within relevant databases. Which databases are relevant? Search a database and pay attention to the results that come up using the chosen search terms. After each attempt ask the following:

- Are any of the articles relevant?
- Are the search terms coming up in places besides the title without making adjustments?
• Of the articles (if any) that most closely relate to what the outcome should be, what subject terms (located within the article record) are similar to the inputted search terms?

Another idea, if the above questions remain murky, is to search the Index, Subject Headings, or Thesaurus of the database. **Note:** This only works when searching the databases individually. If using Still One Search, try to choose terms that will work for multiple databases covering many different subject areas.

**Breaks** – for some, breaks are not essential to being productive. Studies have shown, though, that everyone needs a break after about 30 minutes. So – take those breaks and here are some ideas that might help:

• Switch to another task – it could be a writing component based upon the articles already retrieved.
• Walk the length of the house, hallway, or apartment and back to the work area.
• Read a post by a blogger or watch a short YouTube Clip

**Search Criteria**

Depending on the subject or topic and what the expectations are for the outcome, the criteria of the search will be established. It sounds theoretical and so think of it by some of the following areas:

**Population** – School (College, K-12, Pre-School, Graduate, Post Graduate, etc)

**Year Range** – Typically, this will be in the past 3-5 years for medical topics and within the past 5-8 years for education.

**Gender** – Sometimes it matters and other times it does not, but keep it in mind for sure.

**Article or Study Type** – Controlled trial, clinical trial, systematic, peer reviewed, randomized controlled trial, etc.

**Geography** – Standards for study protocols, what is accepted, how to recruit, and many other factors are influenced

**Language** – English is the most commonly selected language, but having the ability to read, translate, and write articles comfortably in multiple languages is fantastic!

**Search Strategies and Organizational Tips**

Search Strategies are a combination of all the searches needed to reach the “final” outcome or goal. Oftentimes – especially in the beginning – the strategy twists, turns, and does backflips before the actual one appears. Some ideas for organizing terms and tweaking the database and search are available below.
**Boolean Operators** – this is the library standard and really could better be described by AND, OR, and NOT. When placed between word(s), these tell the database to expand, narrow, or drastically reduce results.

- **AND** – requires the database to find terms on either side of AND in an article or not to retrieve anything at all. It automatically narrows the search results for this reason.
  - Ex. health AND education
- **OR** – allows the database to find one of the terms on either side of OR in an article. This naturally expands the search results.
  - Ex. strength OR power
- **NOT** – this term is used sparsely. Whatever term comes after NOT is ignored by the database. Hence, this really narrows that search. For my own searching, this is used a couple times a year at most.

**Parentheses** – When considering a search, sometimes it takes more than a single word to describe what you need. Other times, considering two words (health, education) separately can be more important than considering them together (health education). How on earth does one decide?

Context (setting or background) will sometimes play a role. Also – how the term(s) are used in professional and everyday conversations are also indicators. Below are two examples of the same words viewed as unit or separate ideas:

**Ex. 1** – exams OR quizzes

  - The two search terms are related (i.e. both are assessing knowledge or skills), but separate in that an exam is more comprehensive than a quiz.

**Ex. 2** – (blood tests)

  - Keeping the terms together makes sense. Rarely does one see “blood” by itself. It is usually combined with blood work, blood tests, blood type, etc. To make sure the database sees the words as a *unit* not as separate entities, then, using the parentheses is important.

**Quotation Marks** – putting words in “quotes” when searching indicates to the database that is should a)highlight anything contained in the quotation marks and b)usually only retrieves articles with the words in quotation marks. *This can be extremely useful, when trying to locate a specific piece of information from say the Abstract of a document.*

**Search Strings by Topic or Unit:** When using Boolean Operators to combine multiple ideas for a topic, it is easiest to do so with parentheses and Boolean Operators. Confused? Let me provide examples and explain each part.

Example: (“Wile E. Coyote” AND “The Road Runner”) OR (Sylvester AND “Tweetie Bird”)
• In the first set of parentheses, these two characters are featured in the same cartoons, but the Coyote is always trying to beat the Road Runner. As they are related (same cartoon) and it is rare to see one without the other (The conflict is the point of the cartoon.), combining them as a complete thought in the parentheses is correct.

• Since the names are long, the quotation marks indicate to the database that the entire name must be retrieved not just Coyote or Wile E or Road or Runner. If not searched together in that order, the words mean something else entirely. Quotation marks are quite handy for pulling out specifics.

• In the second set of parentheses, we again have two characters featured in the same cartoon and Tweetie Bird is always just avoiding getting caught by Sylvester. Now – I could just use Tweetie Bird without quotation marks, but since I want to be sure to get those two words together, quotation marks are useful.

• Boolean Operator – The first set of parenthesis is a unit and the second set of parentheses is a different unit. Think then – what operator is appropriate to use for getting the results out of the database using these two units. If it helps, think of the first example of using Boolean Operators and how the database responds to each. Then, expand that to include the complete unit (thought) and what Boolean Operator is most like to achieve the desired result (more terms, less terms, etc).

Understanding Search Results and Search History

Someone asks why for a search one term or organization strategy was used in lieu of something he or she might have done. This puts the person, who did the search, in the position of not only understanding the search strategy but also delves into understanding how organizing ideas and information, in a search, can impact the results. Below is picture of a search history screen and the key parts are explained.

<table>
<thead>
<tr>
<th>History</th>
<th>Download history</th>
<th>Clear history</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td>Add to builder</td>
<td>Search (health education) OR (nutrition AND diet ) AND (gluten-free) AND vegan</td>
</tr>
<tr>
<td>#6</td>
<td>Add</td>
<td>1</td>
</tr>
<tr>
<td>#7</td>
<td>Add</td>
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<tr>
<td>#1</td>
<td>Add</td>
<td>442506</td>
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</tbody>
</table>

Search Numbers (#1, etc.)- These are simply the number of searches completed in a session within the database.

Query – This is the search strategy used to retrieve the articles.