eteaching
MANAGEMENT STRATEGIES FOR THE CLASSROOM
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Online search strategy

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Introduction

Online search strategy should be seen as part of a greater whole – the research process. There are many ways to divide up the research process, but a common one is the "Big6" model:

1 Task definition
2 Information seeking strategies
3 Location and access
4 Use of information
5 Synthesis
6 Evaluation

This article will focus on the first three of these steps and how they relate to online search strategy.

Task definition

First, we need to define the topic being researched. For many students, not having enough background information can be a barrier to researching it. A good place to start could be the introduction section of a Wikipedia or Simple Wikipedia article about it.

For students to come up with good keywords to include in a search, they often need to broaden their vocabulary. It is worthwhile performing a synonym search ("synonyms of […]"). It is also useful to know a few different ways a phrase can be said, so that alternate searches can be included. For example: "Battle of Hastings" and "Norman Conquest" return quite different results in Google.

An image search can be useful for exploring new terms (https://images.google.com/). A written definition of a historical event or artefact, for example, is not as enlightening as a picture of it can be.

We then need to work out what kind of information would constitute successful research into a topic. Students need to know what type of evidence

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would solve the problem they are researching, in order to look for the best sources that will provide such evidence. Once the type of source is known, a student could search for those sources to find out about a topic.

It is important to spend some time teaching the concept of evidence. Get students to brainstorm what different types of evidence there are (such as facts, examples, definitions, quotes, artefacts, images, data and statistics). Ask questions like, "What *kind* of evidence would provide an answer to that question?" Repeating these types of questions can help students to start thinking through the lens of evidence when researching.

So, for example, if a student was investigating Australian Federation and wanted some primary source information about it, they might do some background reading and decide that what was said by convention attendees and the public speeches on the topic would be useful. They might then narrow their search to records of public speeches and newspaper articles quoting from them.

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Information seeking strategies

Good searches start off broad and get narrower as a person learns more about the topic from *doing* the search. This is especially useful in history research because having knowledge of the historical context helps direct further research. For example, a student might search about the eastern front in WWII before finding out about the siege of Stalingrad, and then the specific reasons for that battle.

The stepping stone method is also a good information seeking strategy. Starting with a search on a specific term, researchers use information they gain from reading about their original search results to inform the rest of their search. They repeat this process to arrive at a final destination, or to head down a different path based on new information they've learnt during their search process. This is important to get across to students; the research process itself is not linear – instead, what you learn *while* researching will change your thinking about what the most important thing to research is. For example, if a student was researching the importance of the Great Wall of China, their initial thoughts might be that it was to keep people out. Only after researching more might they discover that it also later became a symbol of the psychological barrier between Chinese civilisation and the rest of the world. If students do not learn *during* the research process and change their research based on what they learn, they won't benefit from knowledge they didn't have at the start of the exercise.

Another effective strategy is to try and imagine how the information the researcher is looking for would be presented. Will it be in the form of a persuasive narrative essay, a data table, a primary source? Consider the analogy to problem solving in mathematics. When trying to solve a problem, it is a good idea to estimate what the answer might be, before calculating it. That way, you can decide if the answer you arrive at is about right or not. It avoids the common problem where a person doesn't pay close enough attention to detail and gets the answer wrong by a factor of ten. Similarly in history, if a student thinks the information they're looking for should be an ancient document, when the results come up with a modern cartoon, they know they've gone down the wrong path.

Finally, good researchers know when to stop their current search and switch to a different strategy. If, while using the stepping stones method, a student ends up getting results that are quite different to those expected, they need to change course.

Location and access

A difficult thing about searching for information online is the enormous amount of it. Students need skills in honing in on the most relevantinformation. There are lots of different types of websites on the internet, many of them not useful for research. Those most useful for research include scholarly works, databases, archives, references sources and information pages. If a student was investigating feudal Japan, images from the Tokyo National Museum would be a credible reference source, whereas a site like http://www.facts-about-japan.com/feudal-japan.html would be an information page. Information pages are not as reliable or trustworthy as the other sorts, but are usually the ones most commonly used by school age students. For lower level research, information pages are acceptable but to become better researchers, students need to start accessing higher quality sources.

Search terms

Students should develop a list of keywords associated with their topic, and refine them throughout the research process. They should write down the topic, extract important words from that topic, then find synonyms or related words. For example: "What was the effect of the Black Death on feudalism in the Middle Ages?"; keywords are Black Death, effect, feudalism, Middle Ages; synonyms are: Plague, feudal system, Medieval Europe.

When finding keywords, try and use words websites might use, such as database, links, archives, collection, reference, research, museum, journal, graph, table and letter.

Understanding search results

A great way to work out if a search query is a good one is to look at the page of results as a whole. It is important to analyse the page overall before looking at individual results. If the page contains a lot of commercial products or irrelevant information, a

better search is required. Just glancing over a page of results before clicking somewhere can help students find better quality answers. Instead of wading through pages and pages of results, a searcher should improve their search query.

Evaluating the credibility of a source

Students should learn that sources need to be reliable, credible, trusted, accurate, unbiased and balanced. They should ask questions of a source:

- Is the content *relevant*? Is it useful for my purpose? Does it contain links to other relevant sources? Is it at an appropriate reading level?
- Is the source *believable*? What type of source is it (published or official sources are better)? Who is the author? (experts are better). When was it published (newer is better, usually)? Is the source unbiased, or at least balanced? Does it say where it gets its information from?
- Is the source *true*? Is it backed up by other sources? Does it *sound* right? Does it fit in with other things you know? (assuming you have knowledge of the subject).

These factors are not equally important, however. It is common for students to focus on something easy to elicit from a source, such as its publication date, and consider this one of the more important elements. Perhaps the most important element is a statement outlining where and how a site obtained its information.

Google tips

Some Google-specific skill is useful. When searching:

- Every word matters
- Order matters
- Capitalisation doesn't matter
- Punctuation doesn't matter
- More specific search terms are better – go from broad to more specific as you learn more while searching
- Use 'Boolean' operators: AND, OR, NOT
- A search with "filetype:" will find specific files. E.g. "trenches filetype:ppt" will find PowerPoint files about the trenches
- A search with "site:" will find things *within* a website. If you find a great collection this term can help you find things within it. For example: "samurai site:tnm.jp" will find samurai related material from the Tokyo National Museum website
- Use the tabs along the top for different types of results such as images, news, videos, maps and books
- Use a hyphen to exclude words and narrow your search. For example "knights -newcastle" will find information about medieval knights, not a sports team
- Search for a range of numbers using "..". For example, "2001..2004" searches between 2001 and 2004. "..2004" searches before 2004. "2004.." searches after 2004
- An asterisk acts as a wildcard. So, for example, "teen*" will return results with any of the words teen, teens, teenager etc. in them
- Use exact phrase searching by putting speech marks around a search to find exact text (which, incidentally, is an easy way to check for plagiarism in a student assignment).

Non-standard search engines

www.scholar.google.com has more sophisticated materials that may be beyond many school-aged students, but are high quality nonetheless. Many of the documents require a paid subscription (e.g. a university account), but most allow researchers to read their abstracts (summaries) for free.

When searching for videos, use www.google.com/video rather than searching in YouTube; it covers more ground.

A great 'computational engine' is www.wolframalpha.com. It can be a bit hit and miss but often you can type in two variables and it will dredge up relevant statistical data on it, even making comparisons between things entered.

Google searches while taking into account the user's history. This can be beneficial for personal use, but for researching, try using private or incognito mode – your search results won't be affected by your previous search history or online activity. Alternatively you could try a search engine like www.duckduckgo.com, which doesn't retain users' data.

A search with "site:" will find things *within* a website. If you find a great collection this term can help you find things within it

Summary

Online searching needs to be taught as a step in the research process more generally. Too often, students are made to 'do a project', but are not taught research skills. Humanities and history teachers in particular have an obligation to develop these capabilities in students. With information literacy becoming ever more important in the digital age, the ability to use the internet critically to find trusted information is a prime example of a transferrable, real world skill. Let's teach it.

Useful websites

The Big 6 research model: http://big6.com/pages/about/big6-skills-overview.php
Simple Wikipedia: https://simple.wikipedia.org/
Google search lesson plans: www.google.com/intl/en-us/insidesearch/searcheducation/lessons.html
Wolfram Alpha, computational knowledge engine: www.wolframalpha.com
Duck Duck Go – non-tracking search engine: www.duckduckgo.com
Video search via google – better than just a YouTube search: www.google.com/video