Ten Things We Really Should Teach About Searching

The mantra, "Search is easy," seems to ring in the heads of just about everybody today. But the devil lies in the subtle nuances—the things many people don't grasp about the nature of search. Infolit instructors can teach all the Boolean we want, but we're not really helping until we get to the level of those hidden realities that work behind the scenes. Here are 10 of them.

IT'S NOT REALLY ABOUT THE TOPIC

Many searchers formulate keywords to find topics, as if the words that describe a thing or concept also describe what the searcher wants. The fact is that each searcher addresses a topic for a particular reason, a particular goal. The heart of the search is not the topic but the searcher's specific goal. Missing this point results in searches that are broader than intended and a plethora of results that really aren't relevant.

An example: You are looking at the reasons why government regulation failed during the economic downturn that started in 2008. That's the goal. But if you think of this as a topic search, you're liable to search on something like economic crisis 2008. You might even add the words reasons or government. This isn't what you are actually looking for, which is something like government regulations failure economic crisis 2008 (a lot more words than I normally want to use, but it's a complex topic). You'll get results such as this Forbes article: "The Financial Crisis Was a Failure of Government, Not Free Markets," as opposed to broader inquiries into the cause of the crisis.

The best way to get this right is to write down your goal in a sentence or question. Then draw the keywords directly from your written goal. When searchers have a clear goal, they are much more likely to hit it with their search terminology. It's really about the goal rather than the topic.

SEARCH IS FLAT BUT THE WORLD IS 3D

We identify the words to find the data. We input the words, and we get a list of results. They may be ranked by relevance (more on this soon), but the results are all snapshots of resources that contained our words. As such, they give the appearance that everything is of the same order—stuff that is about whatever we searched for. But the world isn't flat—it's 3D. It's complex and predominantly hierarchical.

By that, I mean that the world is an interconnection of content and significance. Pieces of information have a context. Any specific piece of data exists within hierarchies, the larger and broader categories that determine its meaning. The U.S. housing crisis of 2008 exists within the context of the financial and government policies and practices that created it. Without knowing those mainly hierarchical contexts,
we would think that the housing market simply went crazy. Context makes sense of it.

But search doesn't see context. It sees words that are found in results, but it cannot provide the complex of surrounding meaning that gives meaning to those results. If the searcher doesn't have a grasp of the larger 3D image, those results are not going to be used effectively.

**A SEARCH ENGINE CAN'T READ YOUR MIND**

I find that many searchers think of search engines as if they were individuals, like the salespeople in a technology big box store. It would sound something like this if search were a shopping trip: "I'm looking for one of those, you know, those devices that let you network by Wi-Fi. Can you show me where they are?" The assumption is that the salesperson will take the broken, limited language and fix it so the connection to the needed data can be found. The problem with using salespeople as an analogy is that search engines have no brains.

I am constantly amazed at the way in which searchers throw words into search engines with an all-encompassing faith that the search engine will grasp what they want. Instead of searching on *subprime mortgage crisis* they search on *American housing or recession*, assuming that the search engine will understand and deliver the goods.

**Ten Things to Teach About Searching**

1. It's not really about the topic.
2. Search is flat but the world is 3D.
3. A search engine can't read your mind.
4. There is no really fast librarian inside a search engine.
5. One box for everything may seem right, but usually it's not.
6. Use the right tool for the right job.
7. Keywords are not magic.
8. Personalization may not be your friend.
9. Too many works are the searcher's curse.
10. Search engines operate in a black hole.

Search engines don't think. They find words in results. True, search engines can now complete words and even find synonyms, but all of that is programming built in rather than any genuine intellectual ability. Thus, it is crucial to use precision in search, brainstorm synonyms, refine searches, and all those information professional-type skills. The search engine finds what you tell it to find, not what you hope it will understand about your search needs.

**NO LIBRARIAN LIVES INSIDE A SEARCH ENGINE**

We have relevancy ranking, which, in theory, means that all the best stuff will rise to the top. While a searcher may not admit to thinking this way, there is a subconscious belief in the minds of many people who search that "someone" is ranking results by looking at each one and making an intelligent decision about which exhibits the best quality.

Sadly, there is no librarian in the engine, no human selector of the really good stuff. There are algorithms that use popularity and other factors to rank results. Sometimes these algorithms get it right, sometimes they don't. Going to the fourth or fifth or even 10th page of results is not a waste of time. It's due diligence not to trust the search engine to give you the best stuff on the first page.

**FALLACIES OF ONE BOX FOR EVERYTHING**

In the minds of our students, one box for everything may be nirvana, but librarians know better. All those academic databases with their endless varieties are a lot of trouble, think our users. Thank goodness for search engines, Google Scholar, and discovery search tools. Each of them offers a universe of results from one simple search box. And that's what we all want: a universe of results. Take Google, which offers up the entire world's knowledge with one search. Or Google Scholar, which covers all known academic literature. Or a discovery tool that covers everything the library has.

Of course, librarians know this is nonsense. Even discovery tools don't cover everything a library has. Google doesn't cover the whole world of knowledge, maybe only 20% of it. And no one but Google really knows what academic literature Google Scholar covers. It certainly isn't all academic literature.

What is more, single search boxes deliver huge result sets. Most often, you don't want huge result sets. You want small result sets that hit your search goal. One box to find everything available seems great, but it's usually not.

**THE RIGHT TOOL FOR THE RIGHT JOB**

If not one search box for everything, then what? I recommend individual, subject-specific databases in most cases. Sure, you can start with a discovery search tool, but you are likely to do much better (achieving a small result set that hits your search goal) if you use a discipline-specific search tool. Discovery is a blunt instrument, even with all its features intended to focus results. Discipline-specific databases are precision instruments, assuming searchers use their truly amazing faceting features.
This, of course, depends on searchers actually believing us when we say that Google or Google Scholar may not do the job as well as they think it will. That can be a hard sell unless we actually show our students how quick and relatively easy it is to use the right database over the most familiar or seemingly easiest resources.

**KEYWORDS ARE NOT MAGIC**

Words are the worst determiners of meaning. Sentences are better. Paragraphs better still. But words? They mean whatever we want them to mean. I can say to you, “Rock” or “Conspiracy” or “Faculties,” and you will have no clear idea what I mean. Rock music or hard substance? Something crime lords do or some crazy notion about who’s really behind 9/11? University professors or mental abilities? I’m the only one who knows, because I spoke the words, and they embody the meaning I wanted to give them.

The searcher can “speak” the words, the keywords, without having any ability to ensure that the results will find the intended meaning. Keywords can’t attach meaning to themselves in the search process unless they are given a context. Thus, instead of “Rock,” search on rock music. Instead of “Conspiracy,” search on 9/11 conspiracy. Instead of “Faculties,” search on university faculties. There is no magical ability in keywords to determine meaning. They need the help of whatever context we can give them.

**PERSONALIZATION MAY NOT BE YOUR FRIEND**

While academic databases don’t use personalization, it is endemic to internet search engines. Essentially, personalization tracks your search history and location to deliver search results that are more likely to fit your interests. That’s great if you want a list of local restaurants, but it can be a real curse if you are searching on a new or unusual topic. In general, if you are using search engines for serious searches, you need to turn off your search history, not log in to the search engine, and watch your results extremely carefully for elements of personalization that may be giving you something other than what you are seeking.

A further tip may be painful for many searchers: The personalization elements appear in the first couple of pages of results. Going past them by digging into pages three to five may well deliver the results you want. Overall, personalization is something most serious searchers have to work around rather than embrace.

**TOO MANY WORDS ARE THE SEARCHER’S CURSE**

When in doubt, throw in a few more words? I see that all the time in student searches, but it’s wrong. The basic rule is that Boolean AND searches eliminate results every time a new word is added to a search. That’s great if you are trying to narrow your search, but deadly if not done with care.

A search on the problem of global warming and the plight of the polar bear needs results that have both the word “problem” and the word “plight” in them. Results that failed to see the polar bear issue as a plight will never appear. Far better to search on global warming polar bear. Default to simplicity in most cases.

**SEARCH ENGINES OPERATE IN A BLACK HOLE**

Ultimately, search engines can reveal things, but they can’t tell you what they don’t find. Unlike searching through a toolbox for the right screwdriver and seeing all the other tools as well, search engines work in the dark, in a realm that holds onto its data, only releasing exactly what the search terms asked for. There is no way to see what you missed or even to tell you that the data you are looking for is actually there to be found.

When they give up too quickly, searchers fail to recognize that alternative searches might actually bring them what the first searches didn’t deliver.

**WHAT IT MEANS TO THOSE WHO TEACH**

Search should become intuitive. Given time, most searchers eventually discover the nuances and integrate them into search instinctively. Sadly, many inexperienced searchers think they are far better at this than they are. They could practice search for years without improving to any significant extent because they don’t change their approach.

We know that search is changing. Web search engines are getting better at discerning our needs (if “discerning” is an apt word for an algorithm), and so are the more sophisticated academic search engines. Nevertheless, so much is still in the hands of the searcher—and I suggest that this will continue to be the case, only because the human brain is vastly more able to understand its search needs than search engines are to carry them out.

For those teaching information literacy, it’s not enough to hand copies of this column to your students so that they can tell you, “I was not aware of that.” Search is learned on the ground, by doing searches and having those who teach provide feedback and direction. If we are aware of possible gaps in student understanding, we can become search gurus.

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