

The Google-ization of Knowledge

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Driving from Edmonton to California and need to find a map? Searching for an obscure reference on Professional Learning Communities? Or, feel a cold coming on and would rather gain herbal relief than get drugged up? There is only one answer. GOOGLE it.

In the past decade, GOOGLE has morphed from the name of perhaps the premier search engine to become a verb. And, with that move, life in schools and learning in general has been reshaped. This article suggests some of the ways that this change might affect teachers, students, and schools in general.

GOOGLE has a short history in comparison to our "old" systems of locating information - such as the library. Google was founded in 1998 and has quickly grown into the largest search engine on the World Wide Web. Currently, a "user" (an odd term in itself) can access an index of more than 4 billion URLs. And, every URL is a "Uniform Resource Locator," essentially the address of a file or Web page accessible on the Internet.

To GOOGLE, when used as a verb, means to search the Internet. Originally, the term itself originated from "Googol" the mathematical term for a 1 followed by 100 zeros. The term was coined by Milton Sirota, nephew of American mathematician Edward Kasner. Google Inc. says, their "play on the term reflects the company's mission to organize the immense amount of information available on the web."

In practical terms, gone are the days when finding a reference was an exhausting and tedious task of library visits and consultations with the esoteric. Imagine Sean Connery's search for "comedy" in "The Name of the Rose" being a keyboard away. Imagine Alexandria's great library and all the libraries of the ancient world being accessible to everyone who might be "connected" (another interesting term). Certainly the process of GOOGLING is one that seems on the surface to expand an individual's access to knowledge - and with it democracy and power - as key information shifts from being held by the few to open to the many.

However, is this true? Does GOOGLE actually democratize knowledge? Or, might other things be happening? We suggest that perhaps all is not as it seems, and indeed "other things are happening." For example:

1. Google-ization is reshaping knowledge.

The computer screen is a small thing. Not as in a minor thing, but literally as in a small thing. Physically the window to the "homepage" of knowledge is not open for one to see in its expanse. Instead, the window is small. One can only see bits and bites of things, certainly not the ability to lay it in front of oneself - as in the spreading of a newspaper on the table.

How does this change knowledge? Because human understanding is a gestalt (a configuration of elements the human mind naturally unifies

into a holistic understanding), human vision is holistic. On a computer, to aid the small physical geography of a computer screen, knowledge has been shrunk to fit the screen. As a result, the "user" is engaged in "sound bites" - rather, site bites. You simply cannot see everything, so you see what is pragmatic and possible to see. The implication is that we are short-sheeting the bed of our understanding. For sure, the Internet is filled with information and, theoretically, it is available at our "fingertips" with just a click of a button or a scroll down a page. However, the typical computer screen may be able to display just over 300 words tops. And if this world becomes our reality, we actually are relying on less information, not the more that is available. Perhaps this is not a good thing.

2. Google-ization is changing how knowledge counts as important.

What happens when one Googles something? The process is to type the search word into a short blank - usually opting for brevity rather than elongation - and then to set the engine to revving. Suddenly, like Christmas morning, a number of presents appear under the tree. These "presents" might as well come down the chimney by an old man no one actually sees (but who eats your cookies nonetheless) or be carried by the stork. And, there might be literally thousands of these gifts, of which the top 12-20 have been displayed, as if by magic, in a linear fashion down the page. These presents are websites (URLs) and the information contained therein is created by someone, literally anyone, somewhere in the world. How specific is that?

How are these presents chosen? Who picks these, and on what basis are the exact ones picked? Unlike other search engines that use the amount of times a word is located in a document as the number one deciding factor, Google's search is a little more intricate. Google, the search engine, actually uses two factors to pick pages with imperceptible preciseness and amazing speed. In what seems to be an effective little "wizard" (an odd name for Microsoft computer help) in everyone's computer, Google's technology is called PageRank and HyperText-Matching Analysis.

PageRank uses the "democratic" (an interesting choice of words given the vote counting problems in Florida) system of finding whose page links to whose and how many times the first page has been linked by other pages. This method, according the Google folks, gives everyone a "vote." Webpages with the most "reputable" sites linking to it end up higher on the search list. According to Google folk, HyperText-Matching analysis does more than just search out how many times a word appears on a page, it analyzes font, subdivision, and location of each word. Of course, what this exactly means we don't know.

3. Google-ization privileges business.

On the face of it, expanding the opportunity to gain knowledge seems to promote increased democracy. But, this democracy may be false or may come with a price. The price is that Google allows you to invite strangers into your house and mind, and some of these strangers are potentially stranger than others. Specifically, what you see is not always what you get. In a take off on an old saw, representation is 9/10s of the "law."

For example, there is a plethora of dot com sites that seem on the face of them to be something "other" than what they are at first represented to be. This is especially true for educational sites. What seems to be educational is actually "business" educational. Or, as we see it, education with a bias. This bias comes as a shock for most educators, who have been quite na•vely accepting at face value the information presented by outside sources that seem, on their face, to be credible. But, we are historically a trusting sort, we educators; and, with good reason. Most of us are upstanding scholars and teachers. Our agenda - wrong word - our vocation - is to teach others. We are that profession that does not bristle at the concept of "en loco parentis." We take care of others: everyone prospers.

But business people - fine as they are - work from a different goal. And this Google is capitalism at its best. Reputable means bigger and "more connected." This is perfect for business whose goal is: we sell; we prosper. Business differs from education much in the way that a television commercial differs from a textbook. Business thinks nothing of engaging in spin, because spin sells.

It is not that spin is dishonest, just aggressively biased. And, what can not be spun is hidden. Businesses hide things they don't want others to see. They represent their best - anything that encourages others to "buy" their product. Therefore, when education becomes a product, it comes with baggage. And, dot com sites, as educational as they might be, come with much baggage. What are we really purchasing when we "buy" our knowledge off the internet? An educator can buy anything from books for their classroom to a degree for their wall. Is this educating for the greatest good?

4. Google-ization has reshaped the authority of knowledge.

Much has changed in the past decade. Alberta, similar to other provinces, has used a highly-sophisticated system of judging school resources. Basically, to become accepted as a school resource and deemed acceptable to be read by students, a resource must be authorized by a committee process that thoroughly scrutinizes it, adjudicates it, and deems it acceptable for all students. That means, it is tolerant (does not abuse) of human differences - like age, sex, culture, history, ability, etc.

Google has changed things. It is no longer feasible, regardless of how you hold it to the light, to assure that any resource one pulls on the Internet has been thoroughly tested and found acceptable by a committee of concerned professionals. Committee members are not available to stand beside a student's computer and analyze each resource that flashes across the screen.

So what? This changes the way students should be educated. Quite simply, if we cannot protect students from "harm" or "mis-education" we must teach them to educate and protect themselves from the sort of extreme and often misrepresented bias of those with a specific agenda - the Internet's version of "safe sects." This mandates the authority back onto students, which in the long run is not such a bad thing. Critical evaluation of web resources is a valuable insight students should learn, not only for school related work but for everyday experiences with the internet. But, is it happening?

Unfortunately with the "freedom of posting" on the internet, anyone anywhere can produce a webpage that says anything they want. Freedom of speech at its best? Students cannot even rely on the suffix of dot org or dot edu to find credible information; as those who know the Internet the best suggest, the best-looking URLs can still be a farce. First, we need to educate ourselves on how best to evaluate a website; second, we need to develop techniques and understandings that teach our students about assessing websites. If we do not, our students will never be able to carefully and responsibly choose resources that help them make educated decisions.

5. Google-ization has reshaped education dialog.

Obviously, a book differs from a computer. But, the difference is more than what is obvious at first glance. Within the history of reading as an area of study, much has been written about the way a reader engages with a text. But the physical-ness of a book differs greatly from the physical-ness of a computer. Few computers are comfortable enough to snuggle with in a favourite chair. Studies remain to be done on how a student interacts with text on a screen and whether this has any implications for the learner.

But, we would venture a guess that comfort cannot but help shape learning. And the learning that one gains from engagement with a book differs from the engagement one gains from interaction with a computer screen. Moms and dads don't often cuddle up next to their young children at the computer and read the text on the screen to them like they would a bedtime story. Young children often use the computer independently, such as playing games or looking at Internet images, but the anxious parents we know are more likely to be concerned that such independence is more alienating than educational or that what is seen as personal engagement comes at the expense of human relationships.

So are our young children better learners because of their adeptness of using a computer? Or are they disadvantaged in other areas because of this technology? Are family relationships and learning, that used to be developed within families, implicated by computers? We might argue that there issues yet to be resolved.

6. Google-ization is creating a primary aesthetics.

Simply stated, sites that are easy to navigate and are pretty are more highly valued than those that are not. This places a primary focus on form over substance. But form is not substance; nor is form knowledge. At least form is not the deep knowledge we need to make important decisions. Thus, when young learners (even older ones) use the internet for research, they may be more likely to choose information with less criticism for content than for visual appeal. Our children are growing up in a visually stimulating society, from billboards to television ads. Internet sites have graphics morphing into different graphics without even pressing a button. There is less appeal for text, just plain print on a page, than for pictures. Even text is modified to attract attention through different fonts, sizes, and pictures. One can add emoticons :) for effect.

We've all seen sites that may be more confusing to navigate than others. Our first response? Move on, and left click out of there. All the relevant information is quickly whisked off your screen and you move on to another site without time to even blink. And, we are doing these erasures even more quickly with high-speed, broadband capabilities. What used to be "don't judge a book by its cover" should be taught as "don't judge a site by its aesthetics!"

7. Google-ization is reshaping the heuristic of knowledge.

Most knowledge that students deal with is linear. This is not to say that it is historical, from ancient to modern; instead, it follows a particular form. One can follow this logic from start to finish. But hyperlinks reshape this logic.

That we have accepted this re-shaping of knowledge is clear, and we sort of engage it without thought. But, instead of moving from one to two to three and onwards, we have engaged a form of "jump" logic. We obviously are not, as the old math teachers would tell us, showing "the steps." When a person is reading their information on a site and in the middle of the text a word appears in blue, we are already trained to know that this means "click here" and you will be taken to another place that deals with that particular word in whatever sense the author means for you to interpret it. (But who filled the basket? And, even if you knew the first site was good, how do you know the second is as well?) As you begin to read the "new" information, you come across another blue word. You click, and on and on the process goes.

How much of this "relevant" information is retained with our heuristic leap-frogging? Often we don't necessarily finish reading an article? These are the Internet's equivalent of a "choose your own ending" book, where the reader can decide to go to page 14 if one plot twist is preferable to another.

8. Google-ization is reshaping the nature of communication.

The questions for judging authenticity are simple. Who do you trust? Where do you get your information? On one hand, the opening up of the world is a gift and Google gives us many more opportunities to meet new people and gain new ideas. On the other hand, people we meet and the information we obtain are not always as they seem. The Internet is an information highway that allows one to cruise along at any chosen speed; but drivers beware. The road is full of potholes and sideroads that can lead to dead-ends. Those growing up in the age of Google-ization may be learning that half-done is good enough or that trust is a minor issue when engaging Internet knowledge.

People can communicate with each other through discussion boards and in chatrooms, but who are you talking to? And, are there ulterior motives? Even if the answer is no, we are growing more cynical and we are coming to believe that cynicism is a virtue. Communication no longer has to be on the telephone, in person, or through the mail, to people one already knows. Communication can be done through discussion boards or chatrooms where one may post messages from the comfort of one's home or office. The implications? Flaming - unnecessarily heated discussions that don't follow what is known as "netiquette" or etiquette on the internet - are increasing. People are talking to people that they don't know, haven't

built relationships with, and are more likely to be impolite to. When the "threat" of face-to-face encounters are no longer present, communication changes. Therefore, free speech and open dialogue are sometimes turned into communication with a vengeance.

Summary

The Google-ization of knowledge is more than simply a discussion about how our quest for knowledge has been reshaped; it is about how we have been reshaped as we have sought this knowledge. We agree, education has been changed by a few clicks of the mouse. Our writing has attempted to highlight what some of these changes might be.

The questions are: what direction do we want Google-ization to head towards in the future? Are we really "better off" than before? How can we gain more control of our own experiences? Are these experiences what we want them to be? Where is the education of our young headed? Finally, can we GOOGLE the above questions to find the answers?

The fact is that, despite our concerns, communication through Google-ization is not always negative. People, in fact, are communication with people they never would have met before Listservs and Newsgroups became popular. The possibility exists that people from huge geographical expanses can be brought together by ideas and cemented by common interests into a harmonious conversation about mutual passions. The result? Wonderful ideas, discoveries, events, and camaraderie emerge from these "invisible" connections made possible through "logging" (another interesting word) onto the internet. Google has allowed us to expand our network of friends and colleagues worldwide without leaving our desks. These are the promises that attend the problems.