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# Unclear on the Context: Refocusing on Information Literacy's Evaluative Component in the Age of Google

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## Introduction

The advent of Google has provoked an uneasy alliance in academic librarianship. We marvel at its speed, flexibility, and simplicity, and simultaneously wonder when it will replace library websites and the resources they provide to students.

Our students arrive at college already familiar with, if not expert in, Internet searching; with the wealth of information available on the surface Web, why delve deeper? Proscribing searching the free Internet for resources is no longer a viable option, if in fact it ever was: with government-issued information going online, freely available bibliographic indexes such as PubMed and the Protein Data Bank, specialized primary resources in history and anthropology, and the growing Open Access movement, to prevent students from using Google actually does them a disservice.

The rise of Google calls upon academic libraries and librarians to evolve yet again, in a number of ways. One critical area of adaptation is information literacy. Stanley Wilder, in his article "Information Literacy Makes All the Wrong Assumptions" (B13), claims that among other things, information literacy removes the information students find from the disciplinary context in which they are to seek and use that information. In other words, proclaiming information literacy as a distinct discipline commits the very act of which librarians accuse Google: it decontextualizes information, turning it into a thing to be manipulated for its own sake rather than used for a particular purpose. The time has come for librarians to re-evaluate the

definition, application, and context of information literacy: in particular, how these must adapt to the age of Google.

Google is the most widely used search engine on the Web, by a margin of 25 percent over Yahoo!, its closest competitor. Danny Sullivan of SearchEngineWatch reports that close to half of all Web searches use Google or Google-powered sites, and Google self-reports indexing billions more pages than any other search engine. It is no wonder, then, that Google became a verb: no one says "Yahoo! it," possibly to Yahoo!'s consternation. Although Google offers a large and ever-growing range of products and services, as of this writing having announced acquisition of the YouTube video-sharing service, the elegant simplicity of its main page suggests an entity which does one thing and does it extremely well.

Yet anecdotally, Google seems to represent academic librarians' frustrations with the way that students do library research—or don't, as is often claimed to be the case. In December 2005, the Online Computer Library Center's (OCLC) report, *College Students' Perceptions of Libraries and Information Resources*, stated that 89% of college students surveyed begin their information searches using a search engine, versus just two percent beginning searches on a library Web site (1-7). Academic libraries are rife with anecdotes from teaching faculty about the difficulty of getting their students to use the library research databases, since most of them will "just Google" their topic. And librarians ourselves could likely field as many anecdotes about students who bypass books, research databases, *and* Google to spend hours with MySpace and Facebook.

This is a challenging state of affairs. Once the Web came to be, it was probably inevitable: for, with the advent of the Web, students had available to them the easiest to use, most accessible means for finding information that had yet been invented. The danger here is that the information that is easiest to find is not necessarily the best available; and, unlike library resources, what is found on Google has not been selected by librarians and/or faculty selectors as appropriate for student research. In the past, the library had no competition because other sources of information were few. This is no longer the case.

### Ease of Access, Ease of Use

In the OCLC report, students rated Internet search engines highly in terms of ease of use (87%), speed (90%), and convenience (84%) (2-10). This appears to accord with the conventional wisdom that college students prefer Google because it's fast and easy to use—a conventional wisdom that, despite being widespread, was little studied in the research literature prior to this report. Despite a great deal of anecdotal evidence from practitioners, the information seeking habits of college students, particularly undergraduates, have remained largely unknown. Thus, OCLC's finding that students do not rate search engines as highly as libraries for credibility (23% versus 77%) or accuracy (24% versus 76%) may come as a reassuring surprise (2-10). Why, then, do so many students begin their searches with Google?

One clue lies in a proposed model of information retrieval that has been much discussed but little implemented since its inception: Marcia Bates's "berrypicking" model (407-424). In contrast to the standard search, retrieve, and search again model that has formed the basis for library services ranging from interface design to information literacy instruction, Bates argues that the "berrypicking" model is much closer to the way that people actually seek information. In this model, an individual is not assumed to understand the full nature of the problem or question for which he or she is seeking information, but is instead imagined to have only a piece of it: a term, a relevant detail, a vague concept. The individual uses this piece to find a piece of information, plucking it from the Web or the library shelf as if it were a berry on a branch. It is then this piece of information, which could be anything from a peer-reviewed journal article to a Wikipedia entry, which provides enough additional illumination of the question to lead the individual further. The individual's quest for information is thus described as taking place a bit at a time, the nature of their search constantly evolving as their personal information store grows like a collection of berries in a bucket.

It is hard to conceive of a resource that would better lend itself to the berrypicking model than the Web. Because the entire structure of the Web is founded on documents linking to one another, it is possible for not only people, but search engines to follow links from one document to the next, which is critical to how search engines work. The very popularity of the Web supports Bates's argument: people find the Web easy to use, because it *is* easy to use, and far more intuitive and less demanding than most library resources.

The importance of ease of access should not be underestimated. Nor should it be dismissed with the argument that students are not expert searchers. If we require students to be expert searchers, then we ought to require it of everyone who ever needs information for research purposes. Yet studies of information seeking behavior among professionals turns up remarkable similarities to the behavior of college students: again, even before the advent of the Web. In their 1968 study of 19 electronics engineers, Gerstberger and Allen found that accessibility of an information source directly affected its frequency of use (272-279). And vice versa: the more often a resource was used, the more accessible it was perceived to be. Though other studies have sometimes rated other criteria higher, the accessibility factor is impossible to ignore.

### **The Memex, the Origin of the Web, and the Open Access Movement**

The answer may be over 60 years old. In his seminal 1945 article, "As We May Think," Vannevar Bush proposed the "Memex", a device that has been taken as an early conception of what eventually became the World Wide Web (101-108). (Bush's proposal merits some description. He describes the Memex as a sort of workstation that contains information an individual wishes to refer to, stored for retrieval at any time. All of this material can be indexed by the user, but Bush also describes "associative indexing", wherein documents link to one another based on their

contents. Although our machines and methods for accessing information today are quite different from what Bush envisioned—he thought microfilm an ideal storage medium—his ideas formed the basis for hypertext, which in turn became the foundation of the World Wide Web.) Accordingly, a couple of the Memex's characteristics bear directly upon the present discussion. To begin with, its location: the Memex is not a library resource and is not located in one. It is not a thing that people *go to* in order to do research; it is, instead, always at hand and conveniently available. Bush even describes it as “primarily the piece of furniture at which [an individual] works” (106) which, given the prevalence of the personal computer in the modern workplace, is especially prescient. “[I]t may be consulted with exceeding speed and flexibility,” Bush says (106), and goes on to describe various features that, although we may not think so today, are clearly meant to make his proposed device easy to use, and its information easy to access and recall. Despite its perils and pitfalls, one can well imagine the Web in general and Google in particular as the realization of Bush's dream. If we recontextualize “As We May Think” as a case study of information behavior, we see the development of the Web as a natural extension of the way that people think and work. Indeed, its power derives from its ability to reflect human methods of association: it can, as Web inventor Tim Berners-Lee put it in the *Journal of Digital Information*, “let you make this random association between absolutely anything and absolutely anything.”

With the Open Access movement, the Web renews people's ability to make these associations and helps ensure quick and easy access to the things that they find. Entities such as the Open Access Initiative and the Public Library of Science not only propose an answer to the teetering and fundamentally unsustainable traditional publishing model, but make reputable scholarly information available to those who were previously least able to afford it: small libraries, less developed countries, and college students. With open access, students are in no way hampered by shortcomings of their library collections or the inaccessibility of restricted online journal literature. In addition, gray literature that has historically been difficult to access, such as government publications, patents, and geological surveys, have begun to appear principally or even solely online. All that is required is an Internet connection, a search engine, and the savvy to know how to use them.

Google has embraced both the Open Access movement and the greater accessibility of reputable information in general. The advent of Google Scholar has greatly increased the accessibility of research literature to students: and while the precision and recall of Google Scholar still leaves a great deal to be desired—there is no guarantee that a matching search result is actually what the searcher wanted—in terms of accessibility and ease of use, it simply cannot be beat. It also serves as a quick-and-dirty citation index, if not yet up to the gold standard set by such products as Web of Science, as Marian Burright noted in a direct comparison of the two in *Issues in Science and Technology Librarianship*. Actively courting librarians and libraries serves Google's purposes, but it serves ours as well. In response to both the enormous proliferation of content in the past century, and students' increasing demands for it, we must not discount Google's usefulness.

## Interactivity, Social Software, and Library 2.0

Has the library Web site replaced the library front door? The evidence is inconclusive. In an academic setting, the availability of computers in a modern learning commons may initially be more attractive to students than the books on the shelves. However, the problem is arguably one of perception: in the OCLC report, college students overwhelmingly associated the library with books, and most were unaware of the availability and content of library research databases (3-22). This very traditionalist association with books is understandable when we recall that the large-scale advent of the Web is less than a decade old. Although students who are now in college have come of age along with the Web, they are old enough to retain memories of more traditional libraries, and to have seen libraries presented and marketed in more traditional ways.

In response, many librarians and libraries have embraced the interactive technologies and social software that form the wave-front of Web 2.0, itself arguably a return to an older, pre-Web conception of the Internet wherein two-way communication was the norm. Web 2.0, and the Library 2.0 movement it has inspired, are moving targets, but it seems safe to observe that at their core, both concepts are about communication: one-to-one, one-to-many, many-to-one. The jargon has become familiar: blogs, wikis, podcasts, RSS feeds, and various forms of synchronous and asynchronous virtual reference have populated library Web sites, at times layered atop an information architecture that was not designed to accommodate them.

If librarians are truly evolving, then this is the random mutation stage. But evolution is about best fit, not merely about change. Adding a blog to a Web site does not change the fact that college students overwhelmingly go to Google first.

This has implications for information literacy, a core element of academic librarians' mission that has recently come under fire for being ineffectual, isolated from the disciplines it is meant to support, and already outdated. The most famous recent example of this is the Association of College and Research Libraries (ACRL) President's Program at the American Library Association 2006 Annual Meeting. Titled "The Emperor Has No Clothes: Be It Resolved That Information Literacy is a Fad and Waste of Librarians' Time and Talent," what the formal debate highlighted above all else is that it is all but impossible to argue about a concept when the participants are unable to agree upon a definition.

This semantic issue is perhaps nowhere made more clear than in Wilder's article. Here, Wilder argues against the assumption that "students are drowning in information," the separation of information literacy from disciplinary knowledge, and information literacy's presumed mandate "to teach ways to deal with the complexity of information retrieval, rather than to try to reduce that complexity." If information literacy as Wilder—who was a participant in the President's Program—defines it were solely bound to that definition, it would indeed be sunk. By treating information literacy as a discipline, rather than as a set of skills the application of which depends

upon disciplinary context, we arguably commit the same sin of which we accuse Google: we remove information from the context in which it is sought for and used, and treat it as a discrete thing which requires specialized handling.

Yet, Wilder himself suggests actions that shift not the existence of information literacy, but its emphasis: away from complex technical and mechanical skills, and toward an understanding of disciplinary discourse. My own instructional sessions have this emphasis: on comprehending the structure and content of disciplinary literature, on reading the literature in order to find and refine a topic, and on a cyclical model of library research that does not entirely discount the role of search and retrieval, but which also understands Bates's berrypicking as part of a larger process. The connection to the library's expansion into the virtual realm is this: as the lines between library resources and the Internet, between ownership and access, and between literacy and technology, blur beyond definition, the way we define and teach information literacy must also shift to accommodate this new reality.

### **The Role of Information Literacy: Constructivism and Critical Evaluation**

If the problem is one of discourse, then let us first understand our own. Christine Pawley has argued that information literacy has been hampered by language: by a tendency within the discipline of librarianship to articulate what information literacy is and does in terminology that she describes as "techno-administrative" (441). Pawley describes this terminology as chiefly concerned with mechanics, not ideas; with rote processes instead of the development of a strategy; and with the hierarchical imposition of technique, rather than the organic construction of literate reasoning. Using such a language automatically predisposes us to discussing technicalities, rather than ideas. Yet in academia, our discourse must necessarily take place in the realm of ideas: not solely or even primarily for the purpose of justifying our place in academia, but because how we think and talk about information literacy directly affects and determines how we practice it.

Both Pawley and William Crowley have argued for a shift to firmer theoretical ground, a ground which still forms a basis for practice. Both suggest that by adopting cultural pragmatism as a theoretical basis, librarianship may finally elevate itself to the status for which it has argued for years. Simply put, pragmatism requires that practical, real-world applications and effects be considered in the formation of theoretical ideas. Cultural pragmatism takes the real-world aspect one step further by asserting that the practical effects will vary depending on the socio-cultural context in which they take place. Although a theoretical approach, cultural pragmatism, like traditional pragmatism, is rooted in lived experience and as such, eschews theory that does not hold up under real-world practice. As cultural pragmatism, it recognizes that the nature of individual personal experience, and thus the theory which arises from it, is culturally mediated. As an approach to information literacy, therefore, it demands that information literacy be both useful and comprehensible to its audience: not extraneous to the age of Google, but integrated with it. In *Spanning the Theory-Practice Divide in Library & Information Science*, Crowley advocates cultural

pragmatism as a way of spanning the divide articulated in the title. But Pawley uses cultural pragmatism as a lens to examine not only information literacy, but the language librarians use to define and discuss it. ACRL's standards for information literacy are awash in techno-administrative language; the people who are expected to conform to these standards, who would be central to a culturally pragmatic view, are conspicuously absent. Instead, the standards refer to people in the abstract, as "information literate persons," and both the skills they are expected to master and the information they are expected to need, seek, evaluate, and use are divorced from any context. This is the nature of standards. However, it arguably encourages the very thing Wilder warns against: the notion of information literacy itself as an entity without context, a thing to be adhered to rather than used.

This techno-administrative language allows us to maintain what Pawley describes as a core contradiction in librarianship: that of freedom versus control, or, pertaining more directly to information literacy, of a promethean versus procrustean model for students. The promethean view embraces a constructivist view of information literacy instruction wherein students are encouraged to create their own meanings; the procrustean view insists on forcing students into existing information literacy models, even if those models are a poor fit. (Pawley's comparison refers to the Greek myths of Prometheus and Procrustes. Prometheus stole fire from the gods and gave it to humankind, thereby enabling human civilization. Procrustes owned a bed, which he would offer to weary travelers. However, if the traveler did not fit the bed, Procrustes would either stretch him out or chop off portions of anatomy until he did.)

With the advent of Google, this contradiction, and the tensions it engenders, become more critical than ever. If accessibility and ease of use are so overwhelmingly important, then is it reasonable to expect students to force themselves into the molds of poorly designed research tools and obfuscatory query languages? Google is the ultimate ready reference source, easier to use than the most elegantly designed book index, more responsive than any other reference tool digital or print, and more productive than the Encyclopaedia Britannica. Google is so easy to use that it allows students to focus their attention on what they're really interested in: the content.

Therein lies the rub, for in decontextualizing information, Google also decontextualizes information. It is much easier to find a document using Google than it is to identify its origin, the parties responsible for it, or whether the information it contains is correct. In addition, a search result on Google does not guarantee access to the linked document, which may have moved, disappeared, or be locked behind an authentication requirement. This means that until the user clicks on the link, and sometimes not even then, all he or she has to go on is the excerpted blurb or summary with the search terms highlighted. Although Google's method of ranking results is a brilliant innovation that arguably works most of the time, it is still not as good as the most basic online index at yielding context in the absence of the actual document. Google's search results list is necessarily fragmentary, but because it pulls



from the entirety of the surfaced, visible Web, those results do not provide reinforcing context the way a subject-specific bibliographic database does.

Could this possibly be a *positive* development? After all, Pawley says that “[T]he pedagogy of reading and policies to promote ‘literacy’ have systematically worked to render some groups of people—indeed, the majority—less capable of active information use and knowledge construction than an educated elite” (425). If even the “educated elite”—college students—cannot find and evaluate the information they need, can information literacy be said to have succeeded? On the other hand, if a student can examine a document and determine, regardless of its source, whether it contains good and—related, but not identical—useful information to him or her, can we argue that such a student is not information literate?

The answer depends on the context: the cultural context of the student within the university, of the student within the library, and of the student's information need. This may be rearticulated as not only a need for information, but a need to understand how information works: how a topic is refined, how an article is found and used, how a paper represents a synthesis of ideas that do not occur in a contextual vacuum. If one reexamines Wilder's argument, one finds that he would, in fact, reinsert information literacy into the contexts to which it pertains: the loci of information need, whether these are students working on research assignments or public library patrons searching for health information. In the culturally pragmatic view, information literacy vanishes into its myriad disciplinary contexts.

### The Future Is Now: Action and Reaction

The arguments made by Pawley, Wilder, and others who have critically examined information literacy's assumptions and discursive language can be signs of a sea change in the discipline of librarianship, in that they simultaneously advocate extensive changes to disciplinary discourse, and demand thorough consideration of the evolving context in which information literacy is taught and practiced. The perennial challenge of information literacy has not been teaching students to navigate a sea of information, but in persuading them not to stick to the shallows of what is most readily available to hand. On the other hand, while accessibility and ease of use are important to college students, they are not the only criteria by which they judge the library, librarians, or the information they find or receive. When asked to judge the trustworthiness of information sources, college students rated worthiness (82%) and credibility (73%) above ease of use (64%) or speed (62%) in importance (3-3). They also valued personal knowledge far above any other factor (83%) in determining the trustworthiness of information (3-4). It seems fair to say, therefore, that to help students become information literate is to help them to develop human skills of critical evaluation, as opposed to mechanical skills of searching and retrieval.

Google is not only a symbol of the Web's challenge to traditionally held ideas of knowledge structure and information literacy instruction in librarianship: it is the vanguard of that challenge. Pawley's recommendations that we teach students how

information “works”, that we flatten the hierarchies created by traditional approaches to librarianship and library instruction, and that we adopt a constructivist approach to thinking about9999 and teaching information access, are not merely a response to this state of affairs, but an adaptation (448). Indeed, our modifications to information literacy instruction cannot be merely technological, for technology-specific skills are doomed to obsolescence at an ever-increasing rate. Even Google is destined to either fall to the wayside the instant something better comes along, or evolve into something that hardly resembles its current self.

It is adaptation, not evolution per se, which ensures the survival of a species. To Pawley's recommendations I would add a willingness to step beyond the reactive tendencies that our profession and our professional language naturally encourage. Visions of what the library in general and information literacy in particular should be ought to be informed by a greater understanding, not of what we think our students need, but by what they *do* need: the tools to empower themselves in an age when access to all the information in the world is through a narrow rectangular box on Google's spare white page.

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