Laura J. Davies explores how a practice employed by secondary school students when surfing websites—namely browsing—can be beneficial in the classroom even if it does not align with traditional research practices. In this chapter from The Next Digital Scholar, Davies offers teachers and librarians strategies for helping students use their “distant reading” skills to conduct research and connect it with reading and writing more purposefully and productively.

Browsing With Intent

Digital Information Literacy and Distant Reading Practices

Laura J. Davies

The internet hasn’t merely affected how students conduct research—it has upended how our students think about research. It’s easy, as teachers and librarians who remember relying on printed books, bound journals, and library shelves and archives for our own research projects, to dismiss our students’ digitally mediated research processes as lacking in rigor and deficient in depth. I have my own qualms about their seemingly exclusive reliance on pixels: I fear it leads our students to believe that the only information that’s worthy of their attention is found on a computer (or a cell phone) screen. The anecdotes we’ve heard in hallways about students’ digital research habits could be pieced together to form a compelling case against some of the research habits of this digital generation.

Until recently, anecdotes were all we really had to form opinions and develop strategies to target the information literacy needs of our students. However, in June 2012, the British Library and the Joint
Information Systems Committee (Jisc), an organization in the U.K. that investigates the adoption and use of digital technologies, published a report on their longitudinal joint study that examined doctoral students’ attitudes and habits of research. Their research, which was based on three annual surveys of more than 17,000 doctoral students at 72 higher education institutions, sheds considerable light on how Generation Y, or NextGen, graduate students (those born between 1982 and 1994) find information and conduct research. One of their most significant findings is that the most valuable information source for these students is the ejournal, or digitally available journal articles (Jisc and British Library 2012, 6). Related to that finding are two others: One, other than ejournals, Google was the most often used information source across all disciplines, and, two, if students were unable to access the full-text of a journal article through an online database, more than half the students stated that they would make do with the abstract instead of searching for alternative means to access the full-text (6, 23).

Though the study focuses on doctoral students, I believe its conclusions are valuable to secondary school teachers and librarians. If doctoral students turn regularly to Google and rely on digitally mediated resources and secondary sources over printed texts, archival documents, and other primary sources, as the Jisc and the British Library research concludes, then I think it’s likely that our middle school and high school students, our next digital scholars, depend just as much (maybe more?) on both Google and other online resources for their research. Additionally, I think it’s disturbing that doctoral students choose not to follow up on their digital research, to locate the full text of the articles that aren’t available in the database they are using. Or, perhaps it’s not a matter of choice. It might be that they lack the skills and strategies of an inquiry research process. If graduate students reach an impasse in their research when scholarship is unavailable online, then it seems likely that secondary students have difficulty knowing how to track down sources that are not immediately accessible digitally.

I believe, however, that it would be preemptive to see our students’ digital research habits negatively only because they don’t match the
methods we were taught and believe credible. To this end, this chapter explores the digital research habits our secondary school students bring to the classroom in order to determine how their intuitive online behaviors might be harnessed and extended to deepen their digital information literacy. Specifically, this chapter investigates the digital behavior of browsing, an online habit regularly practiced among the current generation of secondary school students. In this chapter, I analyze how our students browse through search engines and databases and, with screenshots, show what kinds of information are uncovered in the process of browsing. I then offer ways teachers and librarians can help students in their classrooms browse more purposefully and productively. I argue in this essay that we, as educators, can use our students’ browsing skills to introduce them to practices of distant reading that can help them become more critically aware of the information they find online.

Distant Reading, Close Reading, and the Common Core State Standards

The Common Core State Standards (CCSS) for English Language Arts (ELA) emphasize the importance of building students’ information literacy skills, especially in grades 7–12. Specifically, in the standards for writing, educators need to ensure students demonstrate competence in several related kinds of research and evaluative skills (Council of Chief State School Officers [CCSSO] and National Governors Association [NGA] 2010):

- Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. (W.9–10.7)

- Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research
question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. (W.9–10.8)

The cultivation of online distant reading skills, a term I define as learning how to systematically investigate and analyze the large amount of information gathered through digital browsing and search results, explicitly addresses portions of these two standards. Distant reading skills help students narrow and broaden their research inquiries, gather relevant information from digital sources, use advanced search techniques effectively, and assess the usefulness of sources.

Distant reading is opposite in scope to close reading. The practice of close reading is familiar to ELA teachers: Close reading asks students to focus on a particular text, using techniques of literary analysis, not outside interpretation, to discover how the author constructed the text and the text’s larger meaning. The practice helps cultivate both attention to detail and deep analytical skills. Close reading, as N. Katherine Hayles (2010) explains, is a common tool and inquiry method used in the discipline across literary genres and time periods (63). Hayles describes close reading as “detailed and precise attention to rhetoric, style, language choice, and so forth through a word-by-word examination of a text’s linguistic techniques” (64). It’s no wonder that close reading functions as a cornerstone of ELA curricula, especially in middle school and high school, because the practice helps improve reading comprehension since it requires reading and re-reading a text. Furthermore, close reading grounds the work of critical thinking in a concrete text: Critical thinking processes—those elusive and abstract habits of mind which are so central to making good, thoughtful decisions—remain difficult to define and describe.

My argument for the integration of distant reading practices in the secondary ELA curriculum does not negate the importance of teaching this kind of close reading. Sandra Jamieson and Rebecca Moore Howard’s Citation Project (2013), a data-driven study of how college students use sources in their research writing, demonstrates the necessity of focusing on close reading skills. Their study shows that college
writing students struggle with paraphrasing and summarizing, two techniques that depend on close reading skills, and that when students cite sources in their paper, almost 75 percent of the citations come from the first three pages of the source. Clearly, our students are not reading as closely and as deeply as we expect them to when writing research essays (Jamieson and Howard 2013, 122–23).

I think of the two kinds of reading that I describe here in this essay, close reading and distant reading, as two useful, necessary, but distinctly different camera lenses. Professional photographers have a variety of lenses in their camera bags, ready to use depending on the subject or circumstance of the shot. Close reading is like a macro lens: designed to focus on minute details, able to magnify small objects, and calibrated to adjust to subtle changes in the depth of field. Distant reading is more like a wide-angle lens, which produces panoramic photographs that display a wider angle of view than the human eye. Wide-angle photography requires just as much skill as macro photography: The photographer has to overcome distortion, maintain steady exposure, and stitch together individual shots to create a coherent whole. Close reading zooms in; distant reading zooms out.

My concept of distant reading blends together the ideas of several literary and writing studies scholars who are interested in investigating how the strategies we use while reading affect what we see in and learn from texts. Hayles, who I cited previously in my description of close reading, also defines two other kinds of reading: hyperreading and machine reading, which she argues are important reading practices to teach alongside close reading. Hyperreading, according to Hayles, is “a strategic response to an information-intensive environment” and emphasizes scanning and skimming documents quickly (2010, 66). As opposed to the slow, linear practices of close reading, hyperreading is by nature purposefully disruptive: flipping through a book to read the conclusion first or constructing new narratives by following a trail of hyperlinks. The goal of hyperreading is to quickly acquire information and to engage a state of “hyperattention,” which allows the reader to quickly shift between different ideas and move rapidly among texts (68,
Machine reading, as Hayles describes, is “computer-assisted human reading,” whereby readers use a computer’s ability to run mathematical algorithms and word-count frequencies to understand the patterns internal to the text (72–73). Hayles argues that all three kinds of reading—close, hyper, and machine—have their own set of advantages for readers of literary texts, and the primary differences among the three kinds of reading is scale and context (74).

My conception of distant reading contains attributes from both Hayles’s definitions of hyperreading and machine reading, as both the practices of hyperreading and machine reading focus on finding patterns across multiple texts. Although I’m not arguing that high school students need to compose and use sophisticated computer algorithms to research and read texts, there are ways in which students can rely on computer-mediated technologies to trace words across texts and use numerical and contextual information usually provided in search engine keyword searches that will allow them to participate in a kind of machine reading which Hayles describes.

The term distant reading was first defined in literary studies by Franco Moretti, a Stanford professor of literature. Distant reading borrows on quantitative research methods and visual displays of information to allow students to see a text (and a collection of related texts) in a larger context. Moretti’s 2005 monograph, Graphs, Maps, Trees, demonstrates how distant reading can help scholars understand large yet subtle movements in literary history. His book is divided into three chapters that illustrate three separate methods of distant reading: graphs, maps, and trees. He develops these methods of distant reading from the quantitative and visual modeling methodologies commonly practiced in geography, evolutionary biology, quantitative history, and the social sciences (2). For example, in his first chapter, he uses a series of graphs, developed from 300 years’ worth of publication records, to trace the rise and the fall of the novel as a genre in five countries: Britain, Japan, Italy, Spain, and Nigeria. The graphs allow him to notice patterns that would have been impossible to see through a focus on close reading.
Moretti’s distant reading methodologies are currently being employed in the Stanford Literary Lab, a research group working with digital library collections and Google Books to trace words and phrases across thousands of texts (Parry 2010). Furthermore, his methods have been adopted by other writing studies scholars, such as Derek Mueller (2012), who used graphs, lists, and tables to aggregate data about the most cited-authors in the journal *College Composition and Communication*. The patterns he discovers shed light on writing studies’ growth and specialization as a field of study (210). These distant reading methodologies, which Mueller defines as “a deliberate adjustment in the level of detail at which we ordinarily experience texts,” are also related to the practices of data mining and economic macroanalysis (197; see also Lang and Baehr 2012, 178). The point of distant reading is to deliberately bring into focus associations and patterns that are not noticed through close reading methods. These patterns and associations do not necessarily make arguments, but they do spur new questions and observations. And it is that practice—formulating new questions—which is, on the one hand, essential for good research and also, on the other, very difficult for secondary students to learn how to do. In fact, the CCSS name this skill of creating new “self-generated” questions as a central, recurrent part of the research process (CCSSO and NGA 2010, W.9–10.7).

**Cultivating Digital Information Literacy**

How can distance reading, a technique, as Moretti argues, “where distance is however not an obstacle, but a specific form of knowledge,” be brought into the middle school and high school ELA classroom? (2005, 1, emphasis in original). How can we adapt this quantitative method of reading so that it is valuable to secondary students? How can we teach them to recognize and use this form of knowledge? How does distant reading reflect the reading, writing, and researching skills outlined in the CCSS?

As stated previously, I believe we can reframe our students’ digital habit of browsing (which Hayles would describe as a method of
hyperreading) as a form of distant reading if we teach students both how the information they see on their screens is constructed and also how to look for and describe patterns that emerge during internet searching.

We all know the typical picture of a high school student researching online: scanning through Wikipedia, checking out the first few links that pop up on Google, hopping from site to site and link to link. This skimming—zipping “along the surface like a guy on a Jet Ski,” as Nicholas Carr so aptly put it in his 2008 essay from *The Atlantic*, “Is Google Making Us Stupid?”—seems at first something we, as librarians and ELA teachers used to close critical reading, should discourage. Just the thought of internet-based research makes our internal research alarms go off. We imagine our students seduced by fancy HTML coding and streaming videos, rejecting the vetted electronic databases our libraries subscribe to in favor of the familiarity and ease of commercial search engines.

Part of the problem our students face is one of excess. Data surrounds them as a cloud; information is cheap. Johndan Johnson-Eilola (2005) defines this new 21st-century reality as the *datacloud*, and he calls attention to the fact that our digital surface interfaces hide and belie the complexity and vastness of information available to us (4, 12). Richard Lanham points out this phenomenon in his 2007 book *The Economics of Attention*: “Information is not in short supply in the new information economy. We’re drowning in it. What we lack is the human attention to make sense of it all” (ix). Brian Ballentine (2013) echoes Lanham’s argument that in the 21st century we are faced with seemingly boundless amounts of information and limited human attention. Ballentine contends that the abundance of information available online has changed how we read and think about that information, and he argues that to counteract this shallowness, as Carr describes it, teachers need to design new research assignments that will help students deeply engage with information. The arguments of Ballentine, Lanham, Carr, and Johnson-Eilola illuminate the particular challenges secondary ELA teachers and librarians face as they develop ways to
teach their students online research strategies and digital information literacy skills articulated in the CCSS.

Another challenge our students face is that the search engines they typically turn to during their research processes are constructed differently than the research tools available in libraries, yet that difference is not always obvious to our students. Search engines and all digital media are acts of rhetoric: They are socially constructed for a specific purpose, audience, and context. The algorithms that search engines like Google and Yahoo! use to retrieve and display information are grounded in specific values, and these values are not those associated with academic research. Rather, search engines, like much of the internet, were built by largely commercial interests and demonstrate that subjectivity (Fabos 2008, 844). Even Google Books, one of the primary search tools used at the Stanford Literary Lab, was not built for scholarly research. The books catalogued in Google Books are riddled with incorrect tags and inaccurate metadata, because the search engine “was built to create more content to sell ads against” (Parry 2010). These errors frustrate the work of Moretti and his fellow researchers at Stanford and also unknowingly trip up student researchers, who might trust at face value the information that pops up on the screen.

The amount of faith students put in familiar search engines like Google is shown through Eszter Hargittai and colleagues’ 2010 study of the online research habits of first-year college writing students. Hargittai and his colleagues found through surveys and observations of students conducting online research that students judge the credibility of a web source based on the assumed credibility of a favorite search engine (470). For example, students will defend their use of the first hit on a Google search because it is the first hit on their Google search (481). Students’ routine familiarity with certain search engines, or “brand-name perception” as Hargittai and colleagues define it, has the potential of misleading students into assuming a credible academic ethos for search engines (482).

David Buckingham, a British scholar of education, explains that true information literacy “means asking questions about the sources of that
information, the interests of its producers, and the ways in which it represents the world” (2007, 46). Buckingham’s definition here connects with Sidney Dobrin’s argument that pedagogical discussions about digital technologies need to move past the idea of “writing technology as tool or apparatus” that can either improve or inhibit instruction (2011, 175). Instead, Dobrin claims that technology is more of a concept, a way to do and think about writing that is inseparable from our larger local and global contexts. In Buckingham’s argument, he describes the evaluation checklists that are so often introduced to students as ways to assess the credibility of certain websites as narrowly conceived, focused on safety precautions, and unable to help students understand the rhetorical nature of the internet, that larger global and local context Dobrin explains (Buckingham 2007, 45–46). The literacy skills we need to teach our students so that they can successfully and purposefully mediate digital information must instead take the form of a metalanguage, Buckingham contends, which is an understanding of the rhetorical and systematic nature of the internet, a habit of mind to rely on during the research process (45, 48).

ELA teachers and their librarian colleagues can begin to develop this metalanguage by showing students how browsing can illuminate the ways in which the internet is constructed and, through this understanding, the ways in which this construction creates systems of information. Browsing is a form of distant reading, which I define by borrowing Hayles’s concepts of hyperreading and machine reading and Moretti’s and Mueller’s definition of distant reading. Moretti’s and Mueller’s illustrations of distant reading techniques focus on how scholars can use distance and scope to find new associations and patterns, and my adaptation of distant reading applies these concepts to the work of student researchers.

Not all browsing can be portrayed as distant reading. Often, students mindlessly jump from link to link, using browsing as a way to pass the time instead of paying attention to how they are moved through data online and questioning why the information they see is structured in the way that it is. However, by teaching students online
browsing practices that draw on the principles of distant reading—
skimming websites, quickly skipping through links and search results
pages, manipulating search terms, and paying attention to how search
results pages are constructed—teachers and librarians can help meet the
specific information literacy objectives in the CCSS’ Anchor Standards
for Writing: thoughtful, systematic browsing can help students narrow
and broaden their research inquiries (CCSSO and NGA 2010, W.9–
10.7), and gather relevant information from digital sources; use
advanced search techniques effectively; and assess the usefulness of
sources (W.9–10.8).

Browsing as Distant Reading

The English word browse itself derives from the French word broust
(buds or young shoots), and so takes its meaning from the idea of
animals cropping or feeding off the most peripheral parts of plants,
the edible, accessible buds and young shoots (“Browse” 2014). Online
browsing is very similar, at least conceptually. When people browse
online, they move quickly from site to site, following their interests
and appetites, biting off bits of information here and there. The most
accessible information is quickly retrieved; rarely do people scroll down
or click over to another page unless compelled by driving curiosity or
hyperlinks.

In order to see how browsing can function as a form of distant read-
ing—a method that uses distance as a way to see new patterns and
acquire information—this section will investigate what happens when
a student browses online to find research for a school project. For this
example, we’ll imagine that the student is in 10th grade and writing a
research paper about Wangari Maathai, the recipient of the 2004 Nobel
Peace Prize. I will trace how that student might browse for information
about Maathai on Google and Opposing Viewpoints in Context, a
popular high school and college library database hosted by Gale/
Cengage Learning. This exercise will help illuminate the ways browsing
functions as a method of distant reading, a way of noticing associations
and how search engines work at a macro-level.
First, I search Wangari Maathai on Google. Figure 8.1 shows some key features of the Google search. The first result is for the Wikipedia entry for Maathai. Wikipedia is a conundrum for librarians and teachers. On the one hand, its open-editing policy makes us understandably nervous about our students using it and citing it as a source. On the other hand, research has shown that Wikipedia entries are as reliable as vetted, peer-reviewed encyclopedias like Britannica (Giles 2005, 900).

Although Wikipedia is not an ideal authoritative source for students to cite in an academic essay, Wikipedia entries are valuable starting places for researchers to go to because they provide ideas about an issue or topic, links to other sources about that topic, and search terms researchers can use to expand their search (Purdy 2010, 209), one of the proficiencies addressed in the CCSS (CCSSO and NGA 2010, W.9–10.7). My point here is not to argue whether or not our students should use Wikipedia in their research process.¹ What I think is important here, in discussing browsing as a form of distant reading (and therefore as a way to notice patterns and associations across texts and links), is that Wikipedia is the first result for not just this Google search but for more than 80 percent of all one- or two-word informational Google searches (Miller 2012).

Google ranks its results on its search engine results page based on its complicated algorithms, which take into account, among many things, the number of links to a page from other websites and how well the user’s search terms match the key terms of the site. Google maintains a master index of words, compiled through Google’s Googlebot, which is Google’s web crawling bot that searches the web for updated or new webpages that need to be added to the master index (“Google Basics” 2014; “Googlebot” 2014). Important for teachers and librarians, who are helping their students learn how to navigate information online, is that Google’s algorithms aren’t searching for peer-reviewed or vetted webpages: The search engine results page is a popularity (and accuracy) contest, and Wikipedia wins that competition most of the time (Segal 2011).
Google’s methods for organizing and combining search terms are different than electronic databases like Opposing Viewpoints in Context. Google returns results from any and all information available to index online. In contrast, academic databases limit the sources from which they draw results. Also important is that databases do not rely on commercial profits because libraries pay to subscribe to databases. Commercial interests underline the structure and purpose of the internet and internet search engines like Google, and these interests, sometimes made manifest in business deals to cram sites with internal links to raise a particular site’s visibility on the search results page, impact what information is privileged and what information is buried (Segal 2011).

The next two links on the Google search results page shown in Figure 8.1 direct the user to the About page and the homepage of the Green Belt Movement, the organization that Maathai founded and that many believe led to her Nobel Peace Prize. The next two results are her obituary, published on NYTimes.com and BBC.com respectively, and the sixth result is her biography on the Nobel Prize website. The biographies and obituaries don’t apply a critical lens to her work; they, like the Wikipedia entry, are a collection of facts about Maathai.

Figure 8.1  Results of Google search for Wangari Maathai
What is also notable about the Google search is the sidebar on the right side of the results page, which, in this case, displays images of Maathai, her basic biographical information, images and links to her books, and images and links to other people associated with Maathai, such as Daniel arap Moi and Shirin Ebadi (the latter is cut off and not seen in the screenshot, but was on the results page). This sidebar, a relatively new feature for Google, is the representation of a larger Google project, the Knowledge Graph. With the Knowledge Graph, which Google dubs part of the “future of search,” Google has created a database of the most searched-for people, events, places, and things, with the understanding that users are searching for answers, not just facts (“The Knowledge Graph” 2014). Instead of searches based on key terms and internal links—data out of context—the Knowledge Graph traces the relationships between search words, aggregating the associations among search terms by following user searches.

It is helpful to think of the Knowledge Graph as a “bottom up” search, one based on how people jump from site to site during the research process. In this way, the Knowledge Graph is a visual representation of collective distant reading, as it displays the associations a multitude of researchers make as they browse through search results pages. Teachers and librarians can introduce students to the Knowledge Graph as another search engine embedded within Google. What’s especially helpful about the Knowledge Graph is that the way it succinctly summarizes key information and offers direct links to relevant information can help students meet two of the proficiencies listed in the CCSS (CCSSO and NGA 2010, W.9–10.8). The Knowledge Graph facilitates the process of gathering relevant information from multiple authoritative digital sources, and, because it relies on user data instead of out-of-context algorithms and internal link formulas, it is a kind of advanced search technique readily available to students on the Google platform.

Now, going back to Figure 8.1, we know that most students would dive into one of the first six links listed on the search results page (and likely choose Wikipedia first, since they are familiar with Wikipedia as
a genre) and not scroll down to see the other four links on the page or
click over to the second or third results page. However, if they did,
Figure 8.2 shows what they would find.

Here’s what the second half of the first page of results contains:
Maathai’s page on BrainyQuote, a link to *Taking Root*, the film based
on her Green Belt Movement in Kenya, another obituary, and another
biography. Even more important, Google offers alternative searches on
the bottom of the first page of search results, based on what search
terms other people used in conjunction with *Wangari Maathai*.

**Patterns, Anomalies, and Surprises on the Search Results Page**

Let’s look at the first page of search results on Google shown in Figure
8.1 through a distant reading lens to notice patterns and associations
that emerge when we cluster these ten links together. We know just
from looking at this results page, which contains both titles of websites
and short, truncated excerpts from them, that Maathai is a Kenyan woman who received the Nobel Peace Prize. Maathai founded the Green Belt Movement, died at age 71, and was considered a “visionary” in sustainability and environmental movements, and her work of planting trees was featured in a film. Before even reading any of the webpages themselves, the Google’s search results page gives the student researcher valuable information about Maathai and directs the student to other promising searches related to Maathai. The search results page has unexpected information, too—anomalies in the general pattern gleaned from these 10 links. The suggested search Wangari Maathai hummingbird is one of these surprises. If the student clicks on that link, the new results page lists links to YouTube videos, blog posts, and explanations of Maathai’s allegory of the hummingbird, which she shared in her speeches in order to encourage people to have hope and do what they could in order to enact change, no matter how small their effort might be.

What I am pointing out here is that the search results page itself, as a kind of digital table of contents or card catalogue drawer, contains valuable information for student researchers. In the space of 5 minutes, by clicking through the suggested searches and over a few pages here and there, I learned (beyond what I discovered in the first search result page) the titles of Maathai’s books; that she was jailed and then became a member of the Kenyan Parliament; that she was educated in the United States; that she died of ovarian cancer; and that she served as an activist for women, education, social justice, and the environment. By using distant reading techniques (scanning, skimming, following links, and consciously noticing associations and patterns), students can find valuable background information and search terms even before they read a specific webpage. Research happens among the search results. I am not suggesting that we encourage our students to stay distant and only skim the search results page for their research projects. Rather, I am suggesting that if we can teach our students to be cognizant of the information that appears on a Google search results page, and explain to them the reasons why some links appear above others, then we are
Being mindful of how information is displayed and organized on a Google search results page helps students meet the CCSS in writing. First, by relying on Google’s Knowledge Graph to generate search terms and new questions, students can practice narrowing or broadening a search inquiry when appropriate (CCSSO and NGA 2010, W.9–10.7). Second, by understanding how search engines like Google rank their search results, students are better able to assess the usefulness of certain websites in answering their research question (W.9–10.8). Third, encouraging students to browse through the search results page facilitates their ability to gather information from multiple sources instead of solely focusing on the first site listed on the search results page (W.9–10.8).

Now, let’s turn to a library database, Opposing Viewpoints in Context, and see how the search for Wangari Maathai takes a different path than the Google search. This database brings together content across various media, including audio podcasts, video streams, images, maps, full-text academic journal articles, and newspaper and magazine reports. The database also has tools directed to student researchers, including interactive Web 2.0 platforms, and was designed to imitate the layout of a webpage, since that interface is familiar to students. The purpose of the database, as its title suggests, is to provide users with sources that speak to many of the most hotly debated issues in society today (“Opposing Viewpoints in Context” 2013).

Figure 8.3 shows a screenshot of my basic search for Wangari Maathai in Opposing Viewpoints in Context. The Opposing Viewpoints in Context search results page divides the results into types of sources, which is a valuable categorization for a researcher. For this search, there are seven results from academic journals, one image, six videos, 17 audio clips, 805 news articles or editorials, 17 magazine articles, and four reference links (links to primary source indices or encyclopedias). It’s obvious from scanning this search result page, a distant reading technique, that Wangari Maathai has had more coverage in popular
news outlets than in academic journals or texts. That may be because she is a recent figure of study, having won the Nobel Peace Prize less than 10 years ago. The Opposing Viewpoints in Context database also allows students to limit their search results from the get-go; in the search bar at the top of the page, students can decide to only search academic journal articles, primary materials, or other specific kinds of sources. Google allows this limitation to a degree through its Google Images and Google Scholar searches (though Google Scholar results have large gaps in content and coverage), yet the Opposing Viewpoints in Context database instantly classifies sources for students in recognizable ways that are useful for the research process.

When students click on the tab Academic Journals on the sidebar, they see what is shown in Figure 8.4. Opposing Viewpoints in Context gives the student researcher abundant information just on the search results page. Not only do all seven entries list the title, publication, and publication date, but the database also categorizes how difficult the reading level of each article is (indicated by the shape at the right-hand side of each entry) and the specific type of article: a brief article, book review, article, or children’s review. This explicit contextual information is absent in Google. In a Google search, the researcher must intuit the
kind of source, its audience, and its purpose (a review or an argument, for example) based on the title of the webpage and its short description. Databases fill in some of the blanks.

Also, just glancing at the journal titles or article titles listed in this search results page gives the student researcher valuable information: The journal titles suggest that Maathai’s academic influence extends across disciplinary boundaries—education, science, and foreign affairs—and the article titles imply that her work makes connections among issues of peace, violence, gender, and the environment. Researchers who use distant reading techniques, like skimming and noticing patterns in journal subject areas, can learn valuable information about Maathai relatively quickly.

The type of source that has the most results for a Wangari Maathai search is news articles. When students click on that category on the left sidebar, they see what is shown in Figure 8.5. Further down on the left sidebar, the database offers student researchers possible limitations for their search, restricting results by subject, document type, or publication title. These suggested limitations are also useful for seeing patterns among the 805 news article results. Opposing Viewpoints in Context draws from 279 periodicals, yet 738 results, or 91.7 percent of the news
articles gathered in this search for Wangari Maathai, are drawn from Africa News Service. The other publication titles for this search include the New York Times, Christian Science Monitor, and Toronto Sun. The fact that the vast majority of articles about Maathai are from Africa News Service, an organization that collects news and information from over 130 African news organizations, is interesting (“Publishers” 2014).

It’s difficult to make an argument about this pattern, but it does raise a new question: Does this pattern suggest that international or Western news outlets have ignored Maathai’s work, or does it suggest that Maathai’s work is primarily suited to the African context?

As I did with the Google search on Maathai, I spent 5 minutes doing a “free search.” Instead of reading individual sites or articles closely, I purposefully spent time staying on the surface, clicking the different sidebars and through the search results pages to see what other information about Maathai I could glean just from the results pages themselves. On just the page of podcasts, I discovered that Maathai spoke out in favor of Barack Obama’s election in November 2008 and that she refused to carry the Olympic torch out of protest. Again, these facts aren’t conclusions. Instead, they are anomalies in the larger pattern of coverage about environmental and justice issues, so these variances are valuable
because they help lead to new research questions. These anomalies are critical parts of the research process, because new inquiries often emerge from discovering ideas or data that do not fit the hypothesized pattern.

Though the database search has far fewer results than the Google search (857 total results in Opposing Viewpoints in Context versus 1.3 million hits on Google), that’s not a bad thing. More is not necessarily merrier or better. The Boolean searches that drive database and library searches help researchers calibrate, control, and limit their search results. Limiting search results assists in defining and narrowing a researcher’s search inquiry, one of the proficiencies listed in the CCSS (W.9–10.7). The goal of research is not to gather information for the sake of padding a works cited page, though students often get that message when we require a specific number of sources for an essay assignment. Teachers and librarians must work to help students understand the value of relevancy over quantity, helping them choose useful sources for their search inquiry (W.9–10.8). Students value research resources that return scholarly results, not necessarily those that return relevant scholarly results, as demonstrated through James P. Purdy’s 2012 survey of the reasons why first-year university writing students turn to certain online research resources. The real challenge of research is to choose the right sources, and the limited results in a database help students begin that selection process.

This section, which explored the information students could collect during the process of browsing both Google and an electronic library database, demonstrates that the search results page itself—its hierarchal listings, its suggested alternative searches, its sidebars that include categories, images, and contextual data—is a valuable but often overlooked source of information. Instead of seeing the search results page as a link to other objects of analysis, the search results page can be an object of analysis in and of itself. Looking for patterns and anomalies in the search results page is a kind of distant reading: The researcher purposefully moves away from individual links to look at the panoramic picture as a whole.

Moreover, when the student-researcher combines this kind of distant reading with an understanding of how commercial and academic
search engines are constructed, students are able to be more critical of the influences and assumptions that lead to the content and organization of their search results page. This is exactly the kind of critical information literacy that both Buckingham (2007) and Fabos (2008) argue that teachers and librarians need to help cultivate among today’s students, and it fits with the goals listed in the CCSS for writing. Students who know how search engines select and categorize data can more efficiently gather relevant information on their research topic (W.9-10.8). As Purdy illustrates through his 2012 survey, students are primarily concerned with finding sources that are considered “scholarly,” whether or not that source is relevant to the research inquiry. Coupling discussion of how search engines work—developing critical information literacy—with instruction on how to navigate search engine results pages can help students meet the CCSS standards for conducting research for writing.

Clouds, Links, and Tags: Other Information-Rich Avenues for Distant Reading

Thoughtful browsing as a form of distant reading can also take other forms. For instance, by entering a site like The Green Belt Movement and clicking from hyperlink to hyperlink, the student researcher can begin to notice, with instruction from teachers and librarians, what kinds of alternative narratives are constructed and what analytical connections are forged through those links. Hyperlinks are rhetorical devices unique to the digital environment and deliberately tracing where they lead helps researchers develop scope, context, and further inquiry questions for their research. Tags and tag clouds on blogs can also be followed in a similar way, allowing a researcher to see how others categorize information and make larger associations about issues. Search results pages, as digital media interfaces that combine words and images, are a visual display of hierarchal information and function much like the systematic visualizations used by scholars such as Moretti and Edward Tufte (2001). Student researchers can use browsing as a distant reading practice when they are cognizant of the larger context the results emerge
from and move systematically and analytically through the copious amounts of data that surface during the browsing process.

**Suggestions for the Classroom**

In the beginning of this chapter, I argued that online distant reading skills can help students meet some of the CCSS for writing. Specifically, I believe that browsing can help students narrow and broaden their research inquiries, gather relevant information from digital sources, use advanced search techniques effectively, and assess the usefulness of sources, competencies taken directly from the CCSS’ Anchor Standards for Writing 7 and 8, which are grouped under the subheading “Research to Build and Present Knowledge” (CCSSO and NGA 2010, 18).

**Using Patterns and Anomalies to Narrow and Broaden Searches**

Students can learn how to narrow and widen their research inquiries by paying attention to the anomalies that emerge across the pattern of search results on either an online search engine like Google or an electronic database like Opposing Viewpoints in Context. For instance, the suggested search *Wangari Maathai hummingbird* on Google helped me discover one of Maathai’s most influential speeches. If I were a 10th-grade student writing a research paper on Maathai, this discovery could help expand my inquiry to include research on the underlying philosophies informing Maathai’s activist work. Teachers and librarians can help students widen or focus their research inquiries by teaching students to pay attention to similar kinds of information available on almost every search results page, thus becoming an heuristic invention and leading students to new research-writing questions.

**Relying on the Search Results Page to Discover a Range of Relevant Sources**

Browsing, practiced as a form of distant reading, can also help students gather relevant information from digital sources. In my search in Opposing Viewpoint in Context, for example, I learned about the
range of sources available to me—both traditional print-based articles and news reports and multimedia sources, like audio podcasts, images, and video clips—by just paying attention to the sidebars of the search results page, which categorized sources by genre, and clicking through those tabs. By exploring the right sidebar of my Google Search, which contained the connections with Maathai drawn together from Google’s Knowledge Graph, I found links to other relevant sources, such as the people associated with Maathai’s work and the titles to her publications. It’s obvious that electronic library databases like Opposing Viewpoints in Context contain sources that are immediately relevant to academic research, but that’s not to say that Google’s search results were not also valuable, though the onus to sort out what links are useful and appropriate for research lies more on the student when they use a commercial search engine.

**Taking Time to Explore With a “Free Browse”**

Valuing browsing by giving students dedicated time for it is important for teaching students how to find information online. Archival historians spend considerable amounts of time browsing through boxes and papers; students need to be shown the usefulness of this first step of research. Good research requires thorough surveying. Teaching students specific “navigational” strategies for following links and evaluating sources and search engines prepares them for thorough surveying, as Mary Lourdes Silva’s (2013) study of the research habits of college students shows (180). It’s important to not only teach students these surveying skills, but also to allow them repeated time in class to practice these skills, which might be different from the kinds of strategies they use to surf the web for personal purposes.

In order to help students gather relevant information from digital sources, teachers and librarians can ask students to perform “free browses,” which can be compared to freewrites. In a freewrite, students are asked to write for a set length of time without stopping. Sometimes, the teacher assigns a prompt for the freewrite. During a free browse, the student browses online for a set amount of time, either using an online search engine or an academic database or both. In this scenario,
the teacher or librarian could give students a research prompt, such as “See what you can find about X.” The point of the free browse is for the student to click from link to link, page to page, not stopping to read a particular result. Students are asked to pay attention to what they discover during the free browse, and after the time limit has passed, they can either write down what they found through the search process or discuss what they uncovered with their teacher or classmates.

**Learning How Search Engines Work**

Teaching students how search engines are constructed also helps them learn how to use advanced search techniques effectively. Although both of my searches for Maathai in this chapter only utilized the basic search functions in both Google and Opposing Viewpoints in Context, teachers and librarians can show students how to calibrate their searches using advanced search techniques—such as excluding words in a Boolean search or limiting results to include only certain kinds of documents, like PDFs, on an online search engine. In order to be effective researchers, students need to be aware of what drives the research tools they use: They need to know how Google sorts and stacks results, how advertising plays a role in creating internal links, and how a search engine built for and regulated by commercial and governmental interest and an academic database built for scholarly research are different. We need to demonstrate to our students the larger economic, social, and political contexts in which their research happens. One way to do this is to introduce students to the conversations about search engine optimization and discuss how corporations—like J.C. Penney in 2010 and 2011—have manipulated search engines to maximize their online exposure and commercial profits (Segal 2011).²

**Discussing What “Usefulness” in Research Means**

Teaching students how to use browsing as a distant reading practice can help them develop skills to evaluate the usefulness of sources, links, and websites they find during their research process. Usefulness in academic research means that the source presents information and an argument that is not found elsewhere, and/or the source achieves a level of general
relevance because it is frequently cited or linked. It’s difficult to discern the first kind of usefulness on the search results page of either Google or an academic database, though with the restricted number of hits on a database like Opposing Viewpoints in Context, it is possible to sort through titles and short descriptions to find sources that could possibly give an alternative perspective on a person or an issue, like the NPR clip in which Maathai speaks out in support of Obama’s election. The other kind of usefulness is a bit easier to determine through search results pages: Though the websites themselves must be researched and vetted for reliability and accuracy, the hierarchical listing of sites on commercial search engines like Google do show what links other researchers have visited while searching for similar sources.

Asking students to browse intentionally, and giving time in class or assigning browsing exercises to students as a way to introduce them to online research, opens up the opportunity to talk about degrees of usefulness. For instance, the high-profile placement of Wikipedia on Google’s search results page for most one- and two-word searches can lead to frank discussions about the usefulness and relevancy of Google and Wikipedia, two resources students commonly turn to in the beginning of the research process. As Randall McClure (2011) argues, “Wikipedia and Google are so much a part of the research process for writers today that to ignore their role and refuse to work with these tools seems ludicrous” (223). During or after a free browse, teachers and librarians can ask students questions about the nature of online research:

• Why are free services like Google sometimes more useful than library subscriptions?

• What are the benefits of relying on a tertiary source like Wikipedia to start the research process?

• What are the drawbacks of only depending on the top five links for research?

• How can less frequently visited sites and lesser known academic sources enhance research?
Discussing all these questions help students think more critically about what happens when they browse for sources, either online or through an academic database. The goal is to help them reject the knee-jerk acceptance so many students have of the first few results that arise in their searches for sources.

**Conclusion**

Teaching students to browse as a form of distant reading can help them become savvier, more thoughtful, and more effective researchers. What we do as teachers and librarians when we encourage our students to browse with intent is showing them how an online habit that they regularly practice can be transformed from a passive activity to a new habit of mind that enhances their research.

Distant reading techniques show students how to systematically sort, categorize, and evaluate the large amounts of information generated during online searching. Distant reading asks students to pay attention to how information is presented and structured. Often, students zoom in on specific sources early in the research process, truncating their searches prematurely. When students are able to resist this early focus on a handful of sources, they can instead zoom out and put meaningful distance between themselves and the array of information available to them either online or in electronic databases. Distance allows students to gather new and valuable information about the larger context within which sources operate. The practice of distant reading helps emphasize analytical skills because it teaches students to pay attention to both patterns and anomalies within patterns, critical observation work that leads to new inquiry questions and better research.

It’s no surprise that the CCSS emphasize critical information literacy in their writing standards: Good argumentative writing depends on good research. Teachers and librarians ought to harness browsing and other instinctive practices the next digital scholar brings to the classroom in order to help students hone and strengthen their digital literacy, critical research, and college- and career-ready writing skills. By
browsing, students may just be sampling the surface, but this surface knowledge can help guide and define their research and their writing.

Endnotes

1. Teachers and librarians who are dealing with that question in their classrooms would be benefited by reading James P. Purdy’s scholarship on ways students and teachers can use Wikipedia productively in the classroom (2009; 2010).

2. In late 2010 and early 2011, during the months surrounding and encompassing the high-profit online holiday shopping season, J.C. Penney engaged in a large-scale search engine optimization strategy, which resulted in the J.C. Penney website becoming the first or second website on Google’s search result page for a wide variety of search terms, including Samsonite carry-on luggage, home décor, and skinny jeans. Google determined that those in charge of the J.C. Penney website and its search engine consulting firm were paying to have links to the J.C. Penney company website placed on thousands of websites. Furthermore, many of these websites were placed on sites not related to the search terms, sites or “link hovels” that exist merely to advertise. Since the Google search engine takes into account the number of internal links in determining the hierarchy on the search results page, this optimization strategy led to J.C. Penney skyrocketing up the search results page. Google does not condone this kind of “black hat” optimization. When Google finds organizations disrupting the integrity of their search algorithm by selling links and setting up link hovels, Google manually demotes (and in some cases, outright removes) a company or organization from its search results page (Segal 2011).

References


Council of Chief State School Officers and National Governors Association. 2010. Common Core State Standards for English Language Arts and Literacy in History/


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