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When the Tenets of Composition Go Public: A Study of Writing in Wikipedia

Based on a study of observable changes author-users made to three Wikipedia articles, this article contends that Wikipedia supports notions of revision, collaboration, and authority that writing studies purports to value, while also extending our understanding of the production of knowledge in public spaces. It argues that Wikipedia asks us to reexamine our expectations for the stability of research materials and who should participate in public knowledge making.

Often a top result on Google searches, Wikipedia, the free online wiki[1] "encyclopedia," is increasingly cited by students in academic papers. This usage, together with its position as the most well-known wiki, has led Wikipedia to be the focus of much conversation about what happens when visitors can not only respond to but also revise and edit a public online space labeled as disseminating knowledge. Discussion of Wikipedia is widespread in the popular media. Popular press coverage of Wikipedia has been consistently prevalent—indeed, somewhat astounding—in the last several years (e.g., Ahrens; Giles; Hafner; Hof; Jaschik; McLemee; Noguchi; Pink; Poe; Seigenthaler; Stone; Sydell; Weiss). Rarely a month goes by without another new article on Wikipedia.

Despite its frequent use and extensive media coverage, scholarship in writing studies has yet to offer in-depth study of the writing and researching

practices of Wikipedia. To date, no study of Wikipedia appears in the major journals of the discipline. Computers and composition scholars have done important work on wiki technology, some of which mentions and/or cites Wikipedia (e.g., Barton; Cummings and Barton ; Godwin-Jones; Palmquist; Reilly and Williams; Samuels), but this work does not examine the writing that happens in Wikipedia and, as a result, has not mined wikis' potentials for putting into practice and extending writing studies' ideas about production, collaboration, authorship, and revision. Studies of Wikipedia are being published outside of writing studies (e.g., Ciffolilli), but as Wikipedia is *writing* technology I believe it is important to explore this resource in our own scholarship. Wikipedia can be a valuable composition tool—one of a host of online technologies (e.g., YouTube, Flickr, del.icio.us) that allows for public knowledge making—but it is sometimes misunderstood, misused, or dismissed. Through a study of observable changes author-users[2] made to three articles in Wikipedia, this article explores the notions of composing, authorship, and research afforded by Wikipedia. The article concludes that this resource supports notions of revision, collaboration, and authority valued by the field, while also extending our understanding of the production of knowledge in public spaces. In short, Wikipedia exemplifies many of the tenets of composition that the field purports to value and can, therefore, be a valuable resource for teacher-scholars.

Wikipedia (and wikis more generally) asks us to reexamine our expectations for the stability of research materials and who should participate in public knowledge making. For my purposes public knowledge making means the growth, development, and evolution of ideas through dialogic interchange in publicly accessible forums. With Web 2.0 technologies such as wikis, the public has a larger role in knowledge making through writing. Though this possibility is frequently posed as a threat because it challenges the academy's control over knowledge production and dissemination, I argue this possibility is a chance to highlight how writing can advance and refine ideas through incorporating and balancing multiple voices. Wikis and other Web 2.0 technologies make more visible the complex, rich, messy processes usually kept behind the closed doors of the academy. Far from diminishing scholarly work, these technologies can illuminate the value of writing in processes of developing knowledge. This potential is lost when Wikipedia is treated merely as a flawed textual product. This study shows Wikipedia provides an opportunity for rich knowledge making when viewed as more than a print encyclopedia.

For the study, I read, compared, and coded all Wikipedia entries for the *archive, design*, and *writing* articles written over several years, from their origi-

nal "stub," or initial article page prompting contributions, to the most recent version as of late October or early November 2004. (For clarity, I italicize the names of Wikipedia articles.) In Appendix A, I explain in greater detail my article selection and data coding process.

While Wikipedia is my specific object of analysis, it is just one example that illustrates an approach to research and writing encouraged by digital spaces such as wikis—one that unifies rather than separates processes of research and writing and that situates research as a productive and participatory rather than consumerist activity. This is a small-scale study and generalizations about Wikipedia or any wiki cannot accurately be made based on this limited sample. This study, however, provides an important beginning to understanding an increasingly used writing resource. It reveals that through its design Wikipedia privileges the process of knowledge generation through writing—encouraging contributions from multiple different authors and multiple textual iterations—over the generation of a stable, authoritative textual product.

Invention and Revision in Wikipedia

The participatory model is built in to wikis' history and edit functions. Visitors to Wikipedia can view all previous versions of an article by clicking on "history," and they can change an article by clicking on "edit this page." With the history function author-users can trace the development of a particular topic, and with the edit function they can then contribute their perspective to the article on that topic. Author-users' additions and changes are immediately visible. Thus, Wikipedia articles frequently change. They go through multiple iterations, as exemplified by the history page of the *archive* article, which shows that fourteen author-users revised the article twenty-two times in nine months—and on one occasion (11 March 2004) five times in one day ("Archive—History"). Other articles change even more frequently.

Such changeability makes these articles unreliable but can result in rapid corrections to mistakes and quick updates when new information is discovered. Daniel H. Pink, in fact, reports that Wikipedia author-users revert mass page deletions, which he identifies as a frequent type of vandalism, in a median time of 2.8 minutes. This time decreases to 1.7 minutes when obscenity is involved. These statistics show that multiple author-users are dedicated to the process of textual creation and revision in Wikipedia. This frequency of contributions also illustrates that perspectives on Wikipedia topics continue to evolve and develop as multiple author-users negotiate and refine ideas in response to previous contributions.

This design of Wikipedia encourages visitors to contribute to the development of knowledge through writing. Like other Web authoring programs, Wikipedia creates a link to another page whenever an author uses the appropriate syntax (in Wikipedia, double brackets around the text). Unlike other Web spaces, however, Wikipedia invites—and even expects—author-users to write content for that page. If a completed page does not yet exist for a hyperlinked term, Wikipedia creates a new page. An author-user's click on that term does not generate a message about a broken link, as would normally happen in other types of Web programs. Absent links do not make Wikipedia "broken" or outdated, but instead provide an opportunity for authorial contribution. In other words, what in other spaces would result in an error in Wikipedia results in an opening for new knowledge. Clicking on links never leads users to a dead end; doing so always leads to opportunities to write something, whether it is creating new content or revising existing content.

While notions of revision can still center on polishing and perfecting texts, thereby positioning a correct end-product as the goal, through its focus on writing as idea generation, Wikipedia advances a model of revision based on difference, positioning rhetorical flexibility as the goal. An analysis of the *archive*, *design*, and *writing* articles shows that Wikipedia is not about just fixing articles but about generating ideas through adding to and drawing connections among them. Though author-users click on a link called "edit this page" to change a Wikipedia article, author-users for the three articles I examined did not concentrate their contributions on editing—that is, minor grammatical and typographical corrections.[3] Only 9 percent of changes (20 of 220) were edits. For the *design* article two sentence-level errors, redundant repetition of the word *see* and misspelling of the word *proper*, even lasted for sixteen and twelve versions, respectively (from the 23:08, 26 June 2003, to the 17:44, 14 May 2004, version and from the 23:08, 26 June 2003, to the 06:57, 26 March 2004, version, respectively). For each article studied, the addition of content and hyperlinks were the two most frequent changes, accounting for nearly half (47 percent, or 103 of 220) of author-users' contributions across the three articles. Over time articles became longer and more connected to other articles rather than simply becoming more polished and correct. This finding challenges the notion, as presented in Laura Sydell's National Public Radio story on Wikipedia, that Wikipedia author-users obsess endlessly over grammar and mechanics. Author-users' aims, their attitude toward the Wikipedia project, their knowledge of the encyclopedia genre, and their understanding of wiki technology also undoubtedly influence the kinds of changes they make. It is

worthwhile, however, to notice that the bulk of author-users' alterations were substantive rather than correctional. The correction of mistakes is certainly a beneficial contribution, but more substantive changes illustrate the participatory, productive approach encouraged by this Web 2.0 technology.

To further exemplify this point, I recount a series of structural changes for Wikipedia's *archive* and *writing* articles. While these changes may initially seem unremarkable, they illustrate author-users' collaborative negotiation over the content to include in these articles and the ways in which that content should be structured for its audience. For the *archive* article, author-users made organizational changes reflecting different views of the Internet Archive's place in a definition of "archive." In the 15:29, 2 March 2004, version of the article, author-user Guaka[4] inserted in the relatively new *archive* article a short paragraph describing the Internet Archive. About a month later, Fredcondo included this paragraph in a new section on the "Computing/Information technology sense" of archive (18:27, 19 April 2004). Then author-user Branko transferred this paragraph to a section explaining the "Anthropological sense" of archive (03:14, 1 May 2004), a move aligning the discussion of Internet Archive with an anthropological rather than a technological notion of archive. Finally, Ukuk moved this paragraph to a new section entitled "See Also" that he created at the bottom of the page (20:23, 15 May 2004), a change making the reference to the Internet Archive peripheral in defining archive. In sum, author-users of the *archive* article transformed the discussion of Internet Archive from foundational to peripheral: from one of the original four paragraphs explaining archive to an illustration of a technological sense of archive to part of the explanation of an anthropological sense of archive and, finally, to a tangential note.

For the *writing* article, author-users' organizational changes similarly focused on arrangement, specifically the appropriate location for certain information. One series of changes involved author-users moving existing hyperlinks to a separate "See also" section, converting those links to a bulleted list, and then alphabetizing those links (22:34, 26 Jan. 2002; 18:22, 11 Jan. 2004; and 22:20, 13 May 2004, respectively). Such changes illustrate concern over the most effective way to present links to be read by the audience. Another series of changes involved moving an iconic link to WikiQuote to several different locations on the page (07:32, 20 Sept. 2004, and 07:34, 20 Sept. 2004). These changes illustrate concern over where best to draw visitors' attention to Wikipedia's companion collection of quotations.

While familiar word-processing programs such as Microsoft Word also allow writers to manipulate the organization of a text—writers can copy, cut,

and paste paragraphs and sentence elements to change their order—these programs do not allow users to make changes to publicly accessible online texts. Wikipedia does, contesting the notion that online texts, even encyclopedic or scholarly texts, are ever permanently finished. This sense of public texts as infinitely changeable challenges conceptions of textual authority, particularly those associated with reputedly stable scholarly publications. A text's initial author does not have the final say in what that text is supposed to communicate. Literary and composition theorists have long challenged that an author's intentions are knowable (e.g., Fish; Gallagher and Greenblatt; Harkin; Rosenblatt). Wikipedia, however, affords enacting and illustrating this perspective in ways previously not possible. Not only are texts designed to have multiple authors, but knowledge is framed as up for debate by any interested party. Finding the one correct answer on a topic becomes an untenable goal, shaking the foundation of writing pedagogy and research based on finding and citing the authoritative, right texts.

Correctness still matters, but it is established through a never-ending process of negotiation among multiple positions rather than the advancement of the single "correct" one. Such negotiation is not always appropriate. We, for example, expect that doctors about to do surgery are using the best treatment and are following dosing instructions as written. But we do hope that they have previously considered multiple options—and that medical professionals are continuing to consider multiple positions so that new treatments can be devised and old ones improved. If we use Wikipedia as an opportunity to discuss with students the public spaces in which texts circulate, we can help them learn appropriate venues for engaging in dialogue to create knowledge and appropriate situations for determining that knowledge is correct so that it can be applied.

Assessments of Wikipedia's inaccuracy are not mistaken. Privileging widespread authorial contributions over supervisory authority in Wikipedia can (and does) result in incorrect entries (e.g., see Seigenthaler).[5] Because no one screens their contributions, Wikipedia author-users can write about whatever they want, which they themselves present as a flaw. They lament that there is too much focus on some topics and not enough on others. Wikipedia attempts to take what it calls an "NPOV" (neutral point of view) on topics, equally covering a wide range of topics and presenting unbiased, accurate articles on each. But without an overseeing authority, author-users concede doing so is impossible and entries favor scientific views:

> Popular topics (like Abortion) get written about inordinately, whereas less popular ones (like "Ethiopian presidents") may never receive much attention, or are hard to find. . . . There are many long and well-written articles on obscure characters in science fiction/fantasy and angels-on-a-pinhead issues in computer science; there are stubs, or bot articles, or *nothing*, for vast areas of art, history, literature, film, geography. ("Why Wikipedia is not so great"; emphasis in original)

This lament comes from evaluating Wikipedia for its comprehensiveness and unbiased presentation, qualities associated with successful print encyclopedias. These qualities are indeed important; it is crucial that information in particular contexts (e.g., medicine, politics) be accurate. But that Wikipedians, people who embrace Wikipedia as a public space for developing knowledge, continue to understand and evaluate Wikipedia based on the conventions of print encyclopedias illustrates how our conception of new media technologies is often framed—even limited—by the print technologies with which we are more familiar. The concern Wikipedians raise is less likely to be considered a problem if Wikipedia is approached as a Web 2.0 technology where ideas, even about "angels-on-a-pinhead issues," can be openly discussed and developed rather than just disseminated.

Equally revealing is that this lament indicates an implicit desire for public information to be correct. That is, once knowledge is delivered publicly through writing, it is supposed to be trustworthy. What Wikipedia exposes are the messy processes that usually happen behind the scenes (e.g., what occurs at academic institutions prior to the publication of scholarship). Bringing these processes to light can help to demystify knowledge making for students and make visible the contested nature of "correct" information. When students realize the recursive, dialogic, messy nature of knowledge-generating practices, they can be more comfortable engaging in these practices.

Collaboration and Discussion in Wikipedia

Wikipedia represents a unique opportunity to study and participate in textual development because every Wikipedia article has two modes: "document mode," the presentation of information as a textual product, and "thread mode," a discussion surrounding the creation of that text. With these modes, Wikipedia seeks to capture the process of textual development ostensibly valued by writing studies teacher-scholars. Wikipedia documents the discussion surrounding revisions to a given text, archiving the dialogic exchange and reflection that is part of many writing processes. This exchange can be accessed by clicking on a link titled "discussion" and by viewing the change summaries provided

by author-users on an article's history page. A section of a sample discussion page (also called a "Talk" page), where author-users are discussing suggested revisions to the first paragraph of the article on *the history of the board game Monopoly*, illustrates this exchange and reflection. In this discussion author-user Derek Ross compares the development of Monopoly through multiple iterations from multiple designers to the development of a Wikipedia article. He writes, "Monopoly was like a wikipedia [sic] article. Magie made the first few versions, then other people tweaked it over 30 years. So the name and the design both changed as time went by. It's still basically the same game though. Very much like a Wikipedia article really." Though other texts may not be "basically the same" after such revision, Ross's comments show that attention to the workings of Wikipedia can help author-users understand the iterative nature of other texts.

Asking for discussion contributions and revision summaries does not guarantee author-users will provide them. Wikipedia author-users, in fact, lament that more people do not provide explanations for their changes ("Why Wikipedia is not so great"). But many author-users did for the *writing* and *archive* articles I examined: over half of the changes were accompanied by a summary from an author-user: forty-eight of ninety-three and twenty-one of forty-one, respectively. Making such requests part of Wikipedia's structure situates discussion and reflection as part of the process of contributing to knowledge development. Rather than an authoritative product, Wikipedia becomes a forum showcasing the evolving and contentious nature of knowledge. Some people who use Wikipedia as a reference do not read through or contribute to the change summaries or discussion pages for an article, but others (like Ross) engage the debates revealed through reading and posting to these pages. This latter category of author-users can gain a greater understanding of the context and development of an article. We can help students gain this understanding by asking them to analyze these discussions and summaries—as well as to contribute to them.

Wikis by design are predicated on the idea that more than one author works on a text over time and that each of these contributions is worth preserving because each contributes to idea development. Communal participation is built in to the functionality of Wikipedia: anybody can challenge, dispute, or correct an entry with which they disagree. This collaboration (or debate, as the case may be) becomes apparent by examining any Wikipedia article's history. Multiple author-users offer a variety of perspectives on a given topic. For the *writing, design*, and *archive* articles studied, for example, many people

engaged in their production: fifty-two, thirty-eight, and nineteen people, respectively, made changes to the articles. For Wikipedia author-users, effective textual creation results from the contributions of multiple people, regardless of their expertise or qualifications. Indeed, Wikipedia depends on the continued writings and revisions of multiple author-users. Those articles not developed remain stubs, and those articles with only one author are seen as musings of one enthusiastic individual rather than more fully developed explorations into widespread and varied understandings of a topic (see "Why Wikipedia is not so great"). To criticize Wikipedia for this multitude of contributions is to deny a fundamental affordance of wiki technology. It is, in other words, to criticize Wikipedia for being a wiki.

This notion that collaborative work is an inherent—and often beneficial—part of textual production is not new to many writing studies teacher-scholars, particularly those doing work on writing centers and peer response (e.g., Bruffee; Ede and Lunsford; Harris; Howard; Lunsford, "Collaboration"; Prior; Trimbur). Scholars in computers and composition have likewise explored ways in which such collaboration manifests itself in online spaces, particularly how the reputed anonymity and nontime- or space-bound dialogic exchange facilitated by these spaces creates composing possibilities and challenges (e.g., Barber and Grigar; Barrios; Bauman; Faigley; Galin and Latchaw; Gee; Godwin-Jones; Grabill and Grabill; Turkle; Winner and Shields). This collaborative model, however, is sometimes resisted and stands in sharp contrast to prevailing views of authorship in Western academe, as illustrated, for example, by how singular authorship is privileged, particularly for tenure and promotion publications in the humanities. In an interview with Michael J. Salvo, Andrea Lunsford summarizes the importance of singularly authored publications when she declares that in the academy individual "ownership of intellectual property is the key to advancement." Closely associated with this idea is that research is a solitary pursuit (Ferreira-Buckley; North). Wikipedia challenges these notions by soliciting multiple contributions to an article and by allowing anyone with access to the technology to make such contributions. Author-users do not need to have certain credentials or demonstrate particular capabilities to participate (though they may need them in order for their contributions to remain). Except in rare cases, they do not contribute in isolation.

Given these prevailing views about collaboration and research, some writers and researchers need to be coaxed into participating in wikis. They are not used to such online texts being collaboratively changeable. The home page of Ward's Wiki (the original wiki created by wiki pioneer Ward Cunningham to

focus on issues of patterns in software programming), for example, includes an invitation for visitors to "[e]dit pages by using the EditText link at the bottom of the page you wish to edit." Cunningham reassures visitors, "Don't worry too much about messing up, as the original text is backed up and can be easily restored" ("Front Page"). The bottom of Cunningham's "Wiki Interface" page echoes this invitation: "Please add pages and rearrange as required." He tells visitors not to worry about "messing up" but to "[p]lease" contribute. Other wikis are even more forthright: One Minute Wiki, a wiki that explains and promotes wiki functionality, hails its visitors, "You (yes, you!) are encouraged to start editing immediately." Even more pointedly, author-users of the "Welcome, newcomers" page for Wiktionary, the free online wiki dictionary companion to Wikipedia, affirm, "You might expect Wiktionary to be a low-quality product because it's open to everyone. But, perhaps it's the fact that it *is* open to everyone that has the potential to make a lot of these definitions pretty good, and ever-improving" (emphasis in original). On the "What Is a Wiki" page of his "Blogs and Wikis" wiki, English professor and wiki enthusiast M. C. Morgan is even more explicit in championing communal knowledge generation in the wiki: "The concept of a wiki is that the quality of content rises when everyone is allowed, even encouraged, to author and refactor any page." These encouraging invitations illustrate recognition of a hesitance among people to change texts in the way wikis encourage.

Wikipedia author-users, in particular, make a special effort to get readers to participate in article development because encyclopedias are traditionally framed as authoritative, fixed texts. Wikipedia author-users, for instance, cite the improvement brought about by collaborative authorship as one of the reasons "Wikipedia is so great":

> There are some articles we can all point to that started out life mediocre at best and are now at least somewhat better than mediocre. Now suppose this project lasts for many years and attracts many more people, as seems perfectly reasonable to assume. Then how could articles *not* be burnished to a scintillating luster?
>
> . . .
>
> To use an extended metaphor, Wikipedia is very fertile soil for knowledge. As encyclopedia articles grow, they can attract gardeners who will weed and edit them, while the discussion between community members provides light to help their growth. By consistent effort and nourishment, Wikipedia articles can become beautiful and informative. ("Why Wikipedia is so great"; emphasis in original)

Notable here is the invocation of the garden metaphor, which privileges the organic genesis of knowledge: if enough people care for the writing, it will grow productively. As *The Wiki Way: Quick Collaboration on the Web* authors Bo Leuf and Ward Cunningham put it, "In any Wiki, you discover a sense of growing community that expresses itself through its archived writing and, in particular, the continual editing of content—growth and evolution" (322). This "growth and evolution" of knowledge through collaborative writing is a hallmark of the Wikipedia community. Contributors to Wikipedia even have their own group designation, Wikipedians, as would a group of people living in the same physical location, working at the same company, or rooting for the same sports team. For Wikipedia author-users, writing is the foundation of a larger community identity.

Of course, a garden also needs weeding, and a concern of Wikipedia critics is that Wikipedia is not weeded enough—or at least not weeded by (only) experienced gardeners. *Nature*'s December 2005 article comparing Wikipedia and *Encyclopaedia Britannica* and Britannica's ensuing reaction illustrate a deeply held anxiety about the "weeding" of Wikipedia. In the *Nature* article, Jim Giles proclaims Wikipedia "comes close to Britannica in terms of accuracy" for forty-two sample science entries (900). In its rebuttal *Fatally Flawed*, Britannica vehemently refutes this conclusion, asserting, "almost everything about the journal's [*Nature*'s] investigation, from the criteria for identifying inaccuracies to the discrepancy between the article text and its headline, is wrong and misleading" (2). Britannica calls for "a complete retraction of the study and the article in which it was reported" (7). This impassioned response and the rapidity and frequency with which the study was subsequently written about[6] signify that the accuracy of a few encyclopedia articles is just the beginning of what is at stake in this debate. As Giles points out, Wikipedia critics question "whether multiple, unpaid editors can match paid professionals for accuracy" (900). Of concern, therefore, is the need for paid professional experts in generating accurate knowledge. If *Nature*'s study is correct, in other words, scholarly experts are not necessary to produce "correct" knowledge. Though academics can continue to participate in this work, they are not essential because others can do as good a job through the public collaborative writing of a wiki. From this perspective, Wikipedia challenges scholarly understanding of who should go public with knowledge making and how scholarship is produced. Anyone—green thumb or novice gardener—can contribute to a Wikipedia entry. In this sense, the *Nature* article positions Wikipedia as a threat to the

system of scholarly publication in which academics participate. If we see the ongoing evolution of information in public spheres as a part of scholarly work, however, Wikipedia can enrich, extend, and enliven, rather than threaten, the scholarly enterprise. Wikipedia offers an opportunity for us as teacher-scholars to make public some of our work, to share what we know about our respective areas of study, and to engage in dialogue with other people committed to and enthusiastic about our areas of interest. Wikipedia provides a space where these committed members of the public can feel empowered to cultivate knowledge rather than believe such activities must be left only to more qualified experts. Rather than diminish the work of experts, this participation can make the larger public more engaged in our work and more willing to defend and apply it in civic contexts.

Citation and Authority in Wikipedia

The frequent revisions, multiple textual iterations, and collaborative contributions encouraged by Wikipedia result in texts that often depart from prevailing systems of scholarly citation. On the "Why Wikipedia is not so great" page, author-users go so far as to assert that Wikipedia "discourages proper citation" because its pages change so often. They elaborate:

> Among other problems . . . if several authors cite the same Wikipedia article, they may all cite different versions, leading to complete confusion. That just linking to the article sans version information is not enough can be seen by those Wikipedia articles themselves which refer to others, where it is clear from following the link that a different version was referred to (and there is no clue which of the many versions in the history was actually read by the person who cited it).[7]

In other words, the same wiki URL in three different citations can point to three significantly different pages, leading readers to have "no clue" which version a writer consulted. While writers can cite the dates a wiki page was updated and accessed, the URL provided for the most recent version at the time of writing will always point to the most recent version of that page—even if an author-user cited a prior version. As of this writing, for instance, the URL for the 13 December 2006 version of Wikipedia's *design* article is http://en.wikipedia.org/wiki/Design, but at the time of publication this URL will point to the most recent version of the page, which has undoubtedly changed since that date. From my research comes another example. Leuf and Cunningham refer to a quotation on the home page of Ward's Wiki (22) that, as of this writing, no longer exists on the current version of that wiki. This problem is not unique to Wikipedia.

Other Web sites also change, so citations of them can point to previous versions. Because wikis retain every version of a page, however, previous versions are still accessible in Wikipedia. An author-user can look at older versions of the text, an opportunity not possible in other venues. But someone must consult the page history to find the desired version—sometimes a time-intensive venture.

Just as author-users of Wikipedia express concern over the citation of wikis, they also express concern over citation in wikis. For instance, the first point listed on the "Why Wikipedia is not so great" page is that "[m]ost articles don't give any indication about where the information comes from, making it hard to check, or they take information from transient Web pages which are equally obscure about their sources." This lament signals discomfort with departure from scholarly citation conventions in a space that might benefit from them: if Wikipedia is a space where ideas are generated and developed, then the invocation of scholarly authority through citation can serve important purposes.

One particular sequence of citation from Wikipedia's *design* article illustrates this struggle to move away from explicit academic citation practices but retain references to outside sources. In the 08:37, 10 January 2003, version of the *design* article, author-user Ryguasu added a quotation from Daniel C. Dennett's 1995 book *Darwin's Dangerous Idea*, which he attributed to Gjertsen. He also included a more general reference to Dennett's notion of design. These are the two most explicit academic citations in any pages studied. They did not last. Ryguasu later removed the quotation from Gjertsen (23:08, 26 June 2003). But he still sought recourse to this outside authority. He expanded on the notion of design advanced by Dennett and included a reference to Richard Dawkins. These paragraphs citing and explaining Dennett remained for over one year, a total of twenty-one versions (until the 22:00, 6 July 2004, version). The references were, however, removed one version later, and reference to Dennett did not reappear in future versions of the article (at least as far as the 22:09, 26 October 2004, version, the last version included in this study). A list of designs "regarded as having reached . . . classic status" was introduced in the 20:58, 17 September 2004, version, but no source was provided for who determined such designs to be classic. While this movement away from referencing scholarly sources can be troubling, it can also signify that a certain authority arises from the frequent contributions of a community of writers—that author-users come to see themselves as knowledge producers who can contribute new knowledge.

Citations to relevant scholarly work would often help this process. Gestures to such work, however, do show up in Wikipedia in other ways. Neither

the *writing* nor the *archive* articles includes any explicit citations in the body of the text, but each includes other connections to outside sources. Almost continuously since its 21:04, 20 July 2003, version, the *writing* article has included a "Further reading" section with a list of sources to consult. (Such lists are a common component of Wikipedia articles.) This list for the *writing* article has grown from one to seven sources, including several from ERIC Digest, a notable scholarly database, and one referencing Roland Barthes and Gilles Deleuze, renowned philosophical scholars.

Author-users, then, do make gestures to other work—even scholarly work. Yet these are often gestures of connectivity rather than citations of supporting evidence or contrasting examples. References to outside sources are made not primarily to support author-users' claims but more to provide opportunities for further reading. On the discussion page for the *history of the board game Monopoly* article, Ross responds to another author-user's request for references, "Yes we do give references. But you have to read them yourself to get the information you're asking for." As Ross explains, readers are directed to resources to answer their questions. Traditional academic citations can also serve this purpose, but their primary functions are often to demonstrate an author's familiarity with previous relevant work published in a field and to serve as evidence supporting (or challenging) a claim. Readers of a Wikipedia article can click on links and quickly gain access to the materials referenced. Author-users' use of links to other sources, therefore, indicates both a way to take advantage of wiki functionality and a means to incorporate sources that is more consistent with encyclopedia conventions (encyclopedias rarely provide explicit citations in the same way as scholarly sources; they rely largely on established brand loyalty). On one hand, this approach makes sense because it conforms to expectations for encyclopedias. Wikipedia seeks to gain authority in much the same way traditional print encyclopedias do: get people to use it so they find value in it. On the other hand, because Wikipedia serves primarily as a space for generating and revising rather than simply disseminating information, this approach is problematic. It goes against the conventional idea that new knowledge builds on the acknowledged work of established experts. This tension is a teachable moment. We can use it to show students the power of genres in shaping our expectations for writing and to illustrate how new writing forms are created. Wikipedia, in other words, not only provides an accessible example of the process of knowledge generation, but it also offers an example of the struggle for new writing forms to take shape.

Conclusion: Wikipedia and Knowledge Production in a Networked Culture

Wikipedia is far from a perfect resource. Its continued influence, however, is undeniable, and with critical analysis and attention, it can be a productive resource that reinforces approaches to composition many of us support in our research and teaching. Wikipedia allows for revision based on idea development rather than only grammatical correctness, textual production that involves collaborative participation rather than isolationist thinking, and research based on production rather than mere critique. Wikipedia entries are a microcosm of the research process of advancing and testing hypotheses, of putting forth ideas and developing them based on feedback. Those determined to be inaccurate are rejected; those deemed publicly acceptable remain. Contributors include information in Wikipedia entries that they believe to be important to defining or understanding a particular term. This information is revised, deleted, and challenged based on others' perceptions of its usefulness, accuracy, and value. Spoofs of and challenges to the space are certainly possible (see Ahrens), but so are they for other research venues that are deemed scholarly (as evidenced by Alan D. Sokal's hoax article in *Social Text*). Students can benefit from seeing this process enacted, particularly if they contribute information.

That these practices come under additional scrutiny when enacted in a publicly accessible and widely consulted online space is an opportunity for us as writing studies teacher-scholars to explain and justify our approaches to writing and researching. One way we can do this is to call for understanding Wikipedia as more than merely an encyclopedia, that is, to explain that new media technologies such as Wikipedia do not—and need not—conform to more familiar print-based genres. Simply limiting Wikipedia to an encyclopedia disregards the ways in which Wikipedia can extend our understanding of knowledge production through advancing participatory models of research and writing. Wikipedia offers a forum for developing and debating ideas instead of delivering definitive answers on them. Writing in Wikipedia is not always (or even often) valuable as a textual product, but it is part of the process of collaborative, iterative knowledge development—a process of invention and revision in which we and our students can take part.

Wikipedia champions a model of research where the goal is not efficient consumption (i.e., finding sought information quickly and leaving the research space) but generative production (i.e., contributing to the development of sought information). Knowledge for Wikipedia is necessarily unstable and

impossible to crystallize, precisely because it employs a technology where texts can always be changed by a variety of authors. While engagement with research is indeed a goal of academic and pedagogical work in other spaces, this engagement is not designed to alter the material being researched. Wikipedia, however, actively encourages this changeability—a significant departure from prevailing approaches in the writing classroom, where, as Steve Westbrook (460–61) and Anne Frances Wysocki (20–23) argue, students are asked primarily to analyze rather than produce texts. When students become contributors to this space, they can come to see themselves as composers who create meaning through writing rather than only as novices who are cowed and intimated by the sources of experts. This shift in perspective is an important step in students' learning to engage in conversation with their sources, a skill we often try to teach in our composition courses.

Wikipedia not only challenges a prevailing understanding of knowledge as stable and definitive but also presents the responsibility for knowledge generation across a wider population of society than academics. The result need not be devaluation of scholarly work. It can be recognition that the larger public has an opportunity—even a civic responsibility—to participate in knowledge production in a networked culture. The online spaces our students frequent offer an opportunity for us to talk with them about the work writing does in the world—and how, through their participation in these spaces, they contribute to that work.

Appendix A: Article Selection and Data Coding Process

I selected three article topics covered by Wikipedia—archive, design, and writing—for three primary reasons. First, each had a fairly extensive history for me to examine. Second, each included contributions from a variety of author-users. Third, these articles are germane to my scholarly interests. To track how people write in Wikipedia, I examined every available version of these articles and coded the wiki pages based on my initial hypotheses about the kinds of writing I would find. I then revised this coding scheme based on the actual data. Writers' contributions were coded as belonging to the categories explained in Table 1.

This coding system evolved as the project progressed. Initially, because Wikipedia author-users explicitly identify vandalism as a prevalent problem in wikis ("Wiki"), I included vandalizing and de-vandalizing (i.e., the obvious sabotage of pages, e.g., including profanity or sexual references, and the removal of those contributions) as categories, but I did not find evidence of such activity

Table 1. Writing Changes Coded for in Wikipedia Study

Category	Description
Adding content	Including new words, sentences, paragraphs, or design elements (e.g., horizontal rules, images)
Deleting content	Removing existing words, sentences, paragraphs, or design elements
Organizing content	Changing the order of existing words, sentences, paragraphs, or design elements; grouping these elements into sections
Formatting content	Changing the appearance (e.g., type size, font style) of existing words, sentences, paragraphs, or design elements
Adding hyperlinks	Converting existing words or phrases to hyperlinks, adding hyperlinked words to a "see also" section
Deleting hyperlinks	Removing existing hyperlinks
Fixing hyperlinks	Redirecting misdirected hyperlinks to the correct page
Editing	Fixing typographical errors, making minor sentence-level spelling and grammar corrections

in the entries examined. So I did not use these categories. Also, I later added the category of fixing hyperlinks to account for the correction and updating of links whose destination page had changed. I isolated hyperlinks as a special category of content to attend to the degree to which author-users sought to exploit Wikipedia's capability to link entries to one another and to external sites—that is, to take advantage of the wiki's technological affordances for connectivity. Hyperlinks are a form of content, but I did not double code adding hyperlinks as both adding content and adding hyperlinks, unless the link was part of a more extensive discursive contribution, not just a link added to a "see also" section or the conversion of existing content to a link. Many authors did not limit themselves to making one kind of change. Their contributions fell into multiple categories (e.g., deleting a paragraph, adding a new paragraph, and reformatting a list of "see also" links), so I coded them in multiple categories. Table 2 provides data regarding the number of changes made for each of the Table 1 categories for the *writing*, *design*, and *archive* articles.

In Wikipedia author-users can write a summary of changes they made to a page. While I took these summaries into account, I did not code pages based only on how a writer designated his or her changes because these summaries

Table 2. Type and Number of Changes in Representative Wikipedia Articles

Types of Changes	Writing	Design	Archive
Adding content	24	16	12
Deleting content	8	11	6
Organizing content	7	4	5
Formatting content	4	11	5
Adding hyperlinks	20	20	11
Deleting hyperlinks	2	6	1
Fixing hyperlinks	5	2	6
Editing	11	6	3
Unchanged[8]	3	10	1
Total Changes	93	86	41

varied considerably and I did not necessarily agree with their classifications. For example, "m" was a shorthand designation available to author-users to indicate that their changes were minor. While contributions marked as "m" would reasonably fall under editing in my coding scheme, writers used this designation for a wide variety of changes, from eliminating extraneous punctuation and fixing spelling mistakes to deleting entire sentences and adding new hyperlinks. The codings, then, are based on observable authorial contributions. I do not wish to dismiss authorial intent and perception, but there was too much variance among the summaries for them to be consistent indicators of changes.

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Notes

1. A wiki is a quickly creatable and revisable website that anyone can add to or change. The name *wiki* comes from the Hawaiian word for "quick." This name reflects the rapidity with which people are able to create new and change existing wikis. Used for everything from recipe collections to classroom assignments to software projects, wikis extend the idea of online discussion boards, digital libraries, and document management systems.

2. I use the term *author-user* to emphasize how participants who use a wiki's capabilities to revise and add pages simultaneously author that wiki. In other words, each user is potentially also an author. Bo Leuf and Ward Cunningham call a wiki participant a "visitor-now-contributor" (19) and M. C. Morgan calls him or her a "reader-cum-contributor" ("Notes towards a Rhetoric of Wiki: Composing Processes"). These terms suggest the changing role of readers in wikis (and Web 2.0 more generally) as well as the constructive, rather than passive, position these spaces ask users to assume.

3. Here I am perhaps imposing the "academic English" sense of editing as sentence-level correction rather than a more popular understanding of editing as any change to a document. The notion of "edit," however, still encourages a focus on sentence-level correctness more than would other alternatives such as "revise."

4. Author-users select their own names in Wikipedia. Some use their actual names, others adopt new titles (e.g., Guaka, Branko), and others choose anonymity.

5. This rapid changeability can, however, result in entries seen as more correct. In a post to the techrhet listserv, for example, Kathryn Northcut writes, "it appears that the Wiki[pedia] entry for Rensis Likert/Likert scales is better than the Oxford English dictionary. For example, Likert is supposed to be pronounced 'lick-ert,' not 'like-ert'—Wiki[pedia] reflects this, not OED. And from my access to OED (through library database subscription), there is no feedback mechanism." That Wikipedia has such a feedback mechanism makes possible pointing out such inaccuracies.

6. In *Fatally Flawed* Britannica points to six pieces published about the *Nature* study within three months of *Nature*'s original article, including articles in *The Age* and *Village Voice* (1).

7. My need to add to my coding scheme a category for "fixing hyperlinks" supports that hyperlinks in Wikipedia must be updated frequently.

8. "Unchanged" refers to changes imperceptible to a user unless she or he did a page comparison in Wikipedia. Usually these represent links to the page's subject term in another language (e.g., to "disenz" for "design"). So while I classify these as unchanged because viewers would not readily recognize them as changes, they do represent alterations to a page.

Works Cited

"About Wikis." *WritingWiki* 5 Aug. 2003. 29 Sept. 2004 <http://writingwiki.org/>.

Ahrens, Frank. "It's on Wikipedia, so It Must Be True." *Washington Post* 6 Aug. 2006: F07.

"Archive." *Wikipedia* 15:29, 2 Mar. 2004. 4 Nov. 2004 <http://en.wikipedia.org/wiki/Archive>.

———. *Wikipedia* 18:27, 19 Apr. 2004. 4 Nov. 2004 <http://en.wikipedia.org/wiki/Archive>.

———. *Wikipedia* 03:14, 1 May 2004. 4 Nov. 2004 <http://en.wikipedia.org/wiki/Archive>.

———. *Wikipedia* 20:23, 15 May 2004. 4 Nov. 2004 <http://en.wikipedia.org/wiki/Archive>.

"Archive—History." *Wikipedia* 14:18, 12 Nov. 2004. 12 Nov. 2004 <http://en.wikipedia.org/w/index.php?title=Archive&action=history>.

Barber, John F., and Dene Grigar, eds. *New Worlds, New Words: Exploring Pathways for Writing about and in Electronic Environments*. Cresskill: Hampton, 2001.

Barrios, Barclay. "Reimagining Writing Program Web Sites as Pedagogical Tools." *Computers and Composition* 21 (2004): 73–87.

Barton, Matthew D. "The Future of Rational-Critical Debate in Online Public Spheres." *Computers and Composition* 22 (2005): 177–90.

Bauman, Marcy Lassota. "The Evolution of Internet Genres." *Computers and Composition* 16 (1999): 269–82.

Bruffee, Kenneth A. "Collaborative Learning and 'The Conversation of Mankind.'" *College English* 46 (1984): 635–52.

Ciffolilli, Andrea. "Phantom Authority, Self-Selective Recruitment and Retention of Members in Virtual Communities: The Case of Wikipedia." *First Monday* 8.12 (2003): n. pag. 27 Apr. 2005 <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1108>.

Cummings, Robert E., and Matt Barton, eds. *Wiki Writing: Collaborative Writing in the College Classroom*. Ann Arbor: U of Michigan P, 2008.

Cunningham, Ward. "Front Page." *WikiWikiWeb* 26 Oct. 2004. 27 Oct. 2004 <http://c2.com/cgi/wiki?WikiWikiWeb>.

———. "Wiki Interface." *WikiWikiWeb* 20 Oct. 2004. 27 Oct. 2004 <http://c2.com/cgi/wiki?WikiWikiWeb>.

"Design." *Wikipedia* 13 Dec. 2006. 13 Dec. 2006 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 08:37, 10 Jan. 2003. 29 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 23:08, 26 June 2003. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 06:57, 26 Mar. 2004. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 17:44, 14 May 2004. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 22:00, 6 July 2004. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 20:58, 17 Sept. 2004. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

———. *Wikipedia* 22:09, 26 Oct. 2004. 28 Oct. 2004 <http://en.wikipedia.org/wiki/Design>.

Ede, Lisa, and Andrea Lunsford. *Singular Texts/Plural Authors: Perspectives on Collaborative Writing*. Carbondale: Southern Illinois UP, 1990.

Faigley, Lester. *Fragments of Rationality: Postmodernity and the Subject of Composition*. Pittsburgh: U of Pittsburgh P, 1992.

Fatally Flawed: Refuting the Recent Study on Encyclopedic Accuracy by the Journal Nature. Chicago: Encyclopaedia Britannica, Mar. 2006. 28 Apr. 2006 <http://corporate.britannica.com/britannica_nature_response.pdf>.

Ferreira-Buckley, Linda. "Serving Time in the Archives." Part of "Octalog II: The (Continuing) Politics of Historiography." *Rhetoric Review* 16.1 (1997): 26–28.

Fish, Stanley Eugene. *Is There a Text in This Class?: The Authority of Interpretive Communities*. Cambridge: Harvard UP, 1980.

Galin, Jeffrey R., and Joan Latchaw, eds. *The Dialogic Classroom: Teachers Integrating Computer Technology, Pedagogy, and Research*. Urbana: National Council of Teachers of English, 1998.

Gallagher, Catherine, and Stephen Greenblatt. *Practicing New Historicism.* Chicago: U of Chicago P, 2001.

Gee, James. *What Video Games Have to Teach Us about Learning and Literacy*. New York: Palgrave, 2003.

Giles, Jim. "Internet Encyclopedias Go Head to Head." *Nature* (15 Dec. 2005): 900–01. 28 Apr. 2006 <http://www.nature.com/nature/journal/v438/n7070/full/438900a.html>.

Godwin-Jones, Robert. "Blogs and Wikis: Environments for On-line Collaboration." *Language Learning and Technology* 7.2 (2003): 12–16.

Grabill, Patricia J., and Jeffrey T. Grabill. "Eighth Graders, Gender, and Online Publishing: A Story of Teacher and Student Collaboration." *Computers and Composition* 17 (2000): 161–75.

Hafner, Kate. "Growing Wikipedia Refines Its 'Anyone Can Edit' Policy." *New York Times*: 17 June 2006. n. pag. 24 June 2006 <http://www.nytimes.com/2006/06/17/technology/17wiki.html>.

Harkin, Patricia. "The Reception of Reader-Response Theory." *College Composition and Communication* 56 (2005): 410–25.

Harris, Muriel. "Collaboration Is Not Collaboration Is Not Collaboration: Writing Center Tutorial vs. Peer-Response Groups." *College Composition and Communication* 43 (1992): 369–83.

"History of Wikipedia." *Wikipedia* 9 Nov. 2004. 15 Nov. 2004 <http://en.wikipedia.org/wiki/History_of_Wikipedia>.

Hof, Robert D. "Something Wiki This Way Comes." *BusinessWeek Online* 7 June 2004. 9 Dec. 2004 <http://www.businessweek.com/magazine/content/04_23/b3886138.htm>.

Howard, Rebecca Moore. "Collaborative Pedagogy." *A Guide to Composition Pedagogies*. Ed. Gary Tate, Amy Rupiper, and Kurt Schick. New York: Oxford UP, 2001.

Jaschik, Scott. "A Stand against Wikipedia." *Inside Higher Ed*. 26 Jan. 2007: n. pag. 31 Jan. 2007 <http://www.insidehighered.com/news/2007/01/26/wiki>.

Leuf, Bo, and Ward Cunningham. *The Wiki Way: Quick Collaboration on the Web*. Boston: Addison-Wesley, 2001.

Lunsford, Andrea. "Collaboration, Control, and the Idea of a Writing Center." *The Writing Center Journal* 12.1 (1991): 3–10.

Lunsford, Andrea, with Rebecca Rickly, Michael J. Salvo, and Susan West. "What Matters Who Writes? What Matters Who Responds? Issues of Ownership in the Writing Classroom." *Kairos: A Journal for Teachers of Writing in Webbed*

Environments 1.1 (1996): n. pag. 12 July 2004 <http://english.ttu.edu/kairos/1.1/features/lunsford/title.html>.

McLemee, Scott. "A Wiki Situation." *Inside Higher Ed* 14 June 2006: n. pag. 15 June 2006 <http://www.insidehighered.com/layout/set/dialog/views/mclemee/mclemee177>.

Morgan, M. C. "Notes towards a Rhetoric of Wiki: Composing Processes." *Morgan's Notebook* 22 March 2004. 19 Aug. 2004.

———. "What Is a Wiki." *Blogs and Wikis* 12 Mar. 2004. 19 Aug. 2004.

Noguchi, Yuki. "On Capitol Hill, Playing WikiPolitics: Partisanship Tests Web Site's Policies." *Washington Post* 4 Feb. 2006: A01.

North, Stephen M. *The Making of Knowledge in Composition: Portrait of an Emerging Field*. Portsmouth: Boynton/Cook, 1987.

Northcut, Kathryn. "Re: [techrhet] Wikis Research Survey." Message to techrhet@interversity.org. 4 Dec. 2006. Email.

"One Minute Wiki." *Writing Wiki*. 1 Aug. 2004. 19 Aug. 2004 <http://writingwiki.org/default.aspx/WritingWiki/OneMinuteWiki.html>.

Palmquist, Michael. "A Brief History of Computer Support for Writing Centers and Writing across the Curriculum Programs." *Computers and Composition* 20 (2003): 395–413.

Pink, Daniel H. "The Book Stops Here." *Wired* 2005: n. pag. 6 Apr. 2005 <http://www.wired.com/wired/archive/13.03/wiki.html>.

Poe, Marshall. "The Hive." *Atlantic Monthly* Sept. 2006: 86–94.

Prior, Paul. *Writing/Disciplinarity: A Sociohistoric Account of Literate Activity in the Academy*. Mahwah: Erlbaum, 1998.

Reilly, Colleen, and John Joseph Williams. "Labor, Ethics, and Context in Distance Education." *Computers and Composition* 23 (2006): 68–90.

Rosenblatt, Louise M. *The Reader, the Text, the Poem: The Transactional Theory of the Literary Work*. Carbondale: Southern Illinois UP, 1994.

Samuels, Robert. "Integrating Hypertextual Subjects: Combining Modern Academic Writing with Postmodern Academic Zines." *Kairos: Rhetoric, Technology, Pedagogy* 10.2 (2006): n. pag. 13 Dec. 2006 <http://english.ttu.edu/Kairos/10.2/coverweb/samuels/studentwriters.html>.

Seigenthaler, John. "A False Wikipedia Biography." *USA Today* 29 Nov. 2005: n. pag. 25 June 2006 <http://www.usatoday.com/news/opinion/editorials/2005-11-29-wikipedia-edit_x.htm>.

Sokal, Alan D. "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity." *Social Text* 46/47 (Spring/Summer 1996): 217–52.

Stone, Brad. "It's Like a Blog, But It's a Wiki." *Newsweek* 1 Nov. 2004: E24.

Sydell, Laura. "Wikipedia's Growth Comes with Concerns." *Weekend Edition*. 20 Feb. 2005. National Public Radio. 6 Mar. 2005 <http://www.npr.org/templates/story/story.php?storyId=4506421>.

"Talk: History of the Board Game Monopoly." *Wikipedia* 13 Dec. 2006. 13 Dec. 2006 <http://en.wikipedia.org/wiki/Talk:History_of_the_board_game_Monopoly>.

Trimbur, John. "Consensus and Difference in Collaborative Learning." *College English* 51 (1989): 602–16.

Turkle, Sherry. *Life on the Screen: Identity in the Age of the Internet*. New York: Simon, 1995.

Weiss, Aaron. "The Unassociated Press." *New York Times* 10 Feb. 2005: n. pag. 16 Feb. 2005 <http://www.nytimes.com/2005/02/10/technology/circuits/10wiki.html>.

"Welcome, Newcomers." *Wiktionary* 19 Sept. 2004. 22 Oct. 2004 <http://en.wiktionary.org/wiki/Wiktionary:Welcome_newcomers>.

Westbrook, Steve. "Visual Rhetoric in a Culture of Fear: Impediments to Multimedia Production." *College English* 68 (2006): 457–80.

"Why Wikipedia Is Not So Great." *Wikipedia* 14 Nov. 2004. 22 Nov. 2004. <http://en.wikipedia.org/wiki/Wikipedia_is_not_so_great>.

"Why Wikipedia Is So Great." *Wikipedia* 4 Nov. 2004. 22 Nov. 2004. <http://en.wikipedia.org/wiki/Wikipedia_is_so_great>.

"Wiki." *Wikipedia* 23:44, 30 Nov. 2004. 30 Nov. 2004 <http://en.wikipedia.org/wiki/Wiki>.

Winner, Tammy, and Theodore Shields. "Breaking the Island Chains: A Case Study Exploring the Intricate Powers of Language Shared on the World Wide Web." *Computers and Composition* 19 (2002): 273–84.

"Writing." *Wikipedia* 22:34, 26 Jan. 2002. 9 Nov. 2004. <http://en.wikipedia.org/wiki/Writing>.

———. *Wikipedia* 21:04, 20 July 2003. 9 Nov. 2004 <http://en.wikipedia.org/wiki/Writing>.

———. *Wikipedia* 18:22, 11 Jan. 2004. 9 Nov. 2004 <http://en.wikipedia.org/wiki/Writing>.

———. *Wikipedia* 22:20, 13 May 2004. 9 Nov. 2004 <http://en.wikipedia.org/wiki/Writing>.

———. *Wikipedia* 07:32, 20 Sept. 2004. 9 Nov. 2004 <http://en.wikipedia.org/wiki/Writing>.

———. *Wikipedia* 07:34, 20 Sept. 2004. 9 Nov. 2004 <http://en.wikipedia.org/wiki/Writing>.

Wysocki, Anne Frances. "Opening New Media to Writing: Openings and Justifications." *Writing New Media: Theory and Applications for Expanding the Teaching of Composition*. Anne Frances Wysocki, Johndan Johnson-Eilola, Cynthia L. Selfe, and Geoffrey Sirc. Logan: Utah State UP, 2004. 1–41.

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