

Wikipedia as a Pedagogical Tool: Complicating Writing in the Technical Writing Classroom

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Abstract

This paper describes a series of pedagogical activities that instructors can use with Wikipedia. While there is research that details student contributions to Wikipedia, these activities use features on Wikipedia to teach about ethos, audience, edits/revisions, and style guides as they relate to technical writing. These activities were originally developed for a Technical Writing course but can easily be modified to fit a range of courses and disciplines. A key pedagogical strength of Wikipedia is that it allows instructors and students to work with the Wikipedia community, which can be used to complicate how technical writing students understand and use language.

Keywords: Wikipedia, pedagogy, wikis, collaborative writing, technical writing

The intersection of Wikipedia and higher education has often seemed limited to the idea that students should not cite Wikipedia because it is not credible or because it contains encyclopedic articles that are not appropriate for college-level writing. While these types of stigmas still exist, instructors have found new ways to incorporate, or at least acknowledge, the opportunities that Wikipedia can provide. As an instructor, I have found that Wikipedia offers several rich opportunities to explore rhetorical principles related to writing—specifically technical writing. Carolyn Miller (1979) describes how technical writing is often seen as a “skills course” in which language serves as an objective view of reality devoid of human influence. Yet she contends that “Facts do not exist independently, waiting to be found and collected and systematized; facts are human constructions” (p. 615). Slack, Miller, and Doak (2004) reiterate this same issue in describing how in a transmission view of language, “the technical communicator remains the neutral vehicle facilitating the exercise of power” (p. 163) but argue that technical communicators “contribute to the articulation of meaning and are thus implicated in relations of power and authority” (p. 161). Wikipedia functions as a perfect site to examine these ideas and complicate what it means to practice technical writing. I incorporate Wikipedia into my technical writing courses to talk about and analyze authorship, audience, ethos, writing with technology, and ultimately language and meaning—and this is possible because of Wikipedia’s transparent structure. Users are able to view entries on Wikipedia, but they are also able to view every version of a particular term as well as see and contribute to the conversations taking place about what changes need to be made to improve the quality of a particular term. Ultimately, Wikipedia provides its users with a level of transparency that leads to access and agency. This combination of access and agency leads to

several opportunities for students to learn about the rhetorical aspects of technical writing.

The remainder of this article provides one potential approach to explore the pedagogical opportunities of Wikipedia in relation to technical writing. The section that follows provides an overview on the research that analyzes Wikipedia in pedagogical environments. Afterwards, I provide a sample sequence of activities that I have incorporated into a technical writing course as well as the learning opportunities that correspond with each activity. It is important to note, however, that these activities can easily be modified to extend beyond technical writing. Finally, I offer some conclusions on why Wikipedia works so well in a technical writing course as well as some of the feedback that I have received from students.

Literature Review

While examining the use of Wikipedia in the classroom, I have researched previous scholars' work that explores the use of wikis and Wikipedia. First, I looked at wikis and some of the reasons why they are included in different coursework. Second, I examined work specifically related to Wikipedia. These sources analyze Wikipedia and illustrate the complex nature of the website as well as the possibilities it offers for instructors to use in the classroom. The literature review concludes with a section on Wikipedia in relation to the idea of community, and how they work together to create a unique pedagogical environment.

Wiki Technology

Ras and Rech (2009) reinforce the fact that new students have different learning styles than previous generations and that technology can be used to get them more

engaged in their education. One form of technology that is relevant is wikis. Wikis are a type of technology that most students are familiar with, yet instructors still need to provide scaffolding to get students to use wikis in more critical ways that build off of a “pre-existing educational behavior” (Cole, 2009). Additionally, wikis may challenge students to think about composition in new ways by incorporating new media (e.g., image, video, and sound) and requiring students to make rhetorical choices within a wiki environment (Lundin, 2008).

Despite their benefits, instructors need to be deliberate in how they incorporate wikis into the classroom. Sura (2015) argues that “wikis influence and are influenced by the infrastructures they belong to, that there are both physical and ideological barriers to successfully incorporating a wiki into a course infrastructure” (p. 14). Consequently, students may be confused as to how to use wikis initially (Ramanau & Geng, 2009), but the new environment and lack of structure may challenge how students interact and improve their ability to learn (Alshumaimeri, 2011; Lundin, 2008). In fact, students learn by working with their peers (Lai & Ng, 2011), learning about different genres of writing (e.g., expository, argumentative, or encyclopedic styles of writing) (Konieczny, 2012), writing with more attention to grammar and mechanics (Kuteeva, 2011; Wang, 2014) and thinking about purpose and audience (Wang, Zou, Wang, & Xing, 2013). Ultimately, instructors should analyze wikis as a tool to make sure they are appropriate for the goals of a course and to help ensure that they are incorporated efficiently into the class (Gilbert, Chen, & Sabol, 2008). The next section also explores the use of wikis in the classroom but looks at them specifically in relation to Wikipedia. While Wikipedia works like most wikis, its most significant difference comes from the number of users and the community guidelines that have been developed.

Wikipedia

Wikipedia quickly found a presence within higher education, but it has been perceived differently among instructors and universities. One reason for this has been how students use Wikipedia and incorporate it into their coursework. Garrison (2015) argues that when instructors fail to address Wikipedia in class, “students typically do not fully understand it and instructors lose control over how it is used.” Instead, students use Wikipedia for its primary purpose—to look up “encyclopedic” type information—but do not expose themselves to Wikipedia’s other opportunities that may be more relevant to students’ learning. Students still attempt to use Wikipedia as a quick source for their essays; however, many students have begun to use Wikipedia in more refined ways. Wikipedia has become a quick way to find “clarification and interpretation” on ideas from course readings or as a starting point through which students find additional sources in the reference section of a Wikipedia term (Selwyn & Gorard, 2016). Students are also beginning to use more advanced features of Wikipedia such as looking at the history of a term or exploring the conversations Wikipedia users are having about a term (Brailas, 2011). Despite the new ways students are using Wikipedia, instructors need to treat all students as new users and introduce them to these advanced features to effectively incorporate Wikipedia into a classroom assignment.

Carver, Davis, Kelley, Obar, and Davis (2012) reiterate the need to introduce students to Wikipedia and stress that students should be introduced to the norms developed by the Wikipedia community. Likewise, Wikipedia’s development of well-structured guides offers students the resources necessary to become effective users (Farzan & Kraut, 2013). Even though the guides offer excellent resources for

instructors, they should know that using Wikipedia as an assignment will present some challenges. Instructors need to consider the increased workload with learning new technology, developing grading criteria for Wikipedia, and guiding students through potential issues related to the Wikipedia community or the wiki technology (Roth, Davis, & Carver, 2013; Wannemacher, 2011). While Wikipedia may create additional work at first, it offers many positives for instructors too. Brailas, Koskinas, Dafermos, and Alexias (2015) address how many instructors are having their students contribute to new or existing Wikipedia articles in a variety of different disciplines. By incorporating Wikipedia assignments, several scholars have pointed out the various ways that it helps students learn. Konieczny (2012) uses Wikipedia to teach students about ethos, copyright issues, and wiki technology. Each of these skills helps students learn more about digital literacies. Students also learn by being a part of a community in which they have to “understand a particular digital culture” and learn how to participate to become “legitimate members” (Brailas, Koskinas, Dafermos, and Alexias, 2015, p. 60). Likewise, Roth, Davis, and Carver (2013) discuss the “altruistic satisfaction” students’ feel for contributing to Wikipedia, and how students put forth more effort when their work is located in a public venue. Ultimately, Infeld and Adams (2013) argue that Wikipedia provides students with a

democratic environment where students can test their knowledge, make a contribution to information in the public arena, and develop professional writing skills and identity. They offer a real-time environment that maximizes interaction, and a platform for refining a range of communication, collaboration, critical thinking, and research skills. Students become more engaged with real-world issues while being held accountable to an audience representing a range of stakeholder views. (p. 456)

Additionally, instructors can use Wikipedia to achieve a wide range of pedagogical activities outside of creating or editing existing entries. Konieczny (2012) offers several ways instructors can tailor Wikipedia to fit different aspects of a class: focus on grammar edits, build links in articles (i.e., orphaned articles), revise leads (introductions), insert images and graphics, contribute to the Talk page, among others. While Konieczny's work reveals the flexibility of Wikipedia's use as a pedagogical tool, the Wikipedia community plays a large part in making these opportunities available for pedagogical opportunities. The following section concentrates on the role of the Wikipedia community and how it helps challenge the idea of writing—especially as it pertains to technical writing.

Wikipedia and Community

In looking at Wikipedia, perhaps the most important thing about the website is how it provides a transparent interface to interact with the various communities who collaborate to maintain the content. In looking at community, Reilly (2010) talks about how Wikipedia provides students with the opportunity to work with others, which allows students to receive feedback and gain experience in a way that is hard to incorporate into a classroom. Cummings (2009) reinforces this point by stating how assignments that “replace the teacher as a surrogate audience with a genuine and engaged knowledge community” contribute to students investing more to their work in a course (p. 87). This idea of investment seems, to some extent, to be tied to the idea of place, and whether that sense of place is public or private. Students who complete traditional essay assignments write for an audience, but they write in a private “place” with an audience that is limited to their instructors and peers. Likewise, their work also has a limited context of use; ultimately, it will be assessed for a grade. Wikipedia

differs in that students' work "involves collaborative participation rather than isolationist thinking, and research based on production rather than mere critique" (Purdy, 2009, p. 365). In this way, students' writing extends beyond the purpose of academic assessment. Instead, students write for a public that they do not know and for situations in which they do not necessarily know the context of use. Ultimately, students start seeing Wikipedia as "a complex discourse community and multi-layered, knowledge-making experiment" (Reilly, 2010). The discourse community component of Wikipedia opens up many pedagogical opportunities, especially in regards to understanding the complicated history and practice of technical writing.

Technical writing, as a discipline, has often faced questions about its place and value in relation to other disciplines. Often, technical writing is seen as a positivist style of writing or a simple reporting of facts. However, the act of technical writing occurs in systems that extend beyond a writer creating text on a page—yet the constraints and effects of the system are often not transparent to the general public. Wikipedia differs in that it functions as a system but is transparent to anyone who wants to produce content or examine it in more detail. In looking at Wikipedia as a system, Cummings (2009) describes how "Many who have written in Wikipedia ... can attest to the truth that as long as one offers content in a CBPP [Commons-Based Peer Production] system, it is only a matter of time before that content is questioned" (p. 142). In addition to having students' content questioned, Purdy (2009) points out how, "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" (p. 366). Wikipedia serves as an ideal space for students to learn more about technical writing because they have detailed guidelines created by the Wikipedia community as well as instructors mentoring them

through the process. The following section provides a detailed look at multiple activities that instructors can incorporate into technical writing courses. The activities extend beyond just contributing content to Wikipedia by looking at some of the more advanced features of Wikipedia and how these features help illustrate some of the rhetorical components of writing.

Wikipedia Activities

The following activities were originally designed for an upper level technical writing elective. The students varied in their majors but have included the following disciplines: English, psychology, engineering, history, chemistry, environmental science, as well as others. The general premise of the course included a writing intensive focus that examined written and oral communication in professional environments. Students learned about writing in professional environments by practicing multiple genres including correspondence, proposals, reports, instructions, data displays, and collaborative writing. The activities presented below were designed for a technical definition/description assignment sequence and consist of three units. The first unit focuses on the *View history* option in Wikipedia to better understand the authorship and evolution of a given term. The second unit explores the *Talk* option that provides a unique look into the revision and editing process. The third unit transitions students from consumers to producers on Wikipedia by letting them contribute to the website following the community guidelines. Prior to detailing the activities for the technical definition/description sequence, I discuss the learning opportunities that can be paired with each unit. The learning opportunities include understanding ethos, writing with community guidelines or company standards, writing for a defined audience, seeing the evolution of language, editing or revising

content, citing sources, or writing for a Wiki environment. These learning opportunities function as a general framework for which instructors can tailor them to fit the specific needs of a course's objectives.

View History

The first part of the technical definition/description assignment has students use the *View history* tool on Wikipedia. Purdy (2010) examines the different components of a Wikipedia page (i.e., *Article*, *Talk*, *Edit*, and *View history*) and uses those features to discuss how Wikipedia offers users a product as well as a “representation of process” (p. 207). I use Purdy's ideas as a starting point for using Wikipedia in a technical writing assignment and expand on how Wikipedia has other features that can be adapted to challenge students' perception of what it means to practice technical writing.

Learning opportunity: Writing as a process.

The transparent nature of Wikipedia works well in the technical writing classroom because it shows writing as a process. The *View history* page demonstrates writing as a process because it shows each edit that has been made over a term's history. By viewing a term's history, a user gets a sense of how a term has evolved, and perhaps a sense of how the mission of Wikipedia has also evolved over time. For example, one of the first pages composed for the term “family” on Wikipedia consisted of one section with five sentences that described a general idea of family, a nuclear family, and an extended family (Talk: Family, n.d.). This contribution was made April 16, 2002. As of December 2016, the page for “family” has been edited a total of 3,334 times over the past 14 years. Its current version looks nothing like the original

contributions. It has an introduction much longer than the original versions followed by contents that are organized into 24 different sections, with many of those sections containing two to five sub-sections. Additionally, the term now includes images, charts, and figures as well as two content areas that link it to larger themes, *Anthropology of kinship* and *Relationships*. By viewing a term's history on Wikipedia, students start to see how a term evolves. Additionally, instructors can use this as a foundation for talking about extending students own ideas in their writing and how to think about revisions from a global perspective.

Learning opportunity: Ethos of contributors.

The users who contribute to Wikipedia provide an interesting look at the concept of authorship because they are able to build unique profile pages that are highly rhetorical. By providing a space for each user, Wikipedia creates an environment that contributors can use in several different ways. Contributors use their profiles as a social media platform, a professional platform, or some combination between the two. But the most important thing is that Wikipedia's audience has access to these profiles. Consequently, the contributions of an author are not linked to a name that has little to no meaning for the audience. Instead, authors may create rich identities based on the way they present themselves through their profiles. For instance, an author may compose content that describes how he loves dogs and fishing. This user may reinforce this content further by including "social" *Userboxes*¹ that also state how he loves dogs and fishing. Another author may create a page that describes how she tries to do the right thing when editing terms and discuss her editing process. Additionally,

¹ A userbox is "a small colored box...designed to appear only on a Wikipedian's user page as a communicative notice about the user, in order to directly or indirectly help Wikipedians collaborate more effectively on articles" (Userboxes, n.d.).

this user may include *Userboxes* that describe how she is a member of the “Counter-Vandalism Unit” and has “rollback rights” on English Wikipedia. Instructors can use different types of profiles like these to get students talking about the idea of authorship and what they value in terms of perceiving the importance of ethos and authorship.

View history activity.

The first part of the activity has students work in groups and select a term to lookup on Wikipedia. After selecting a term, students go to the *View history* page that provides access to every single version of a term since it was first introduced on Wikipedia. The student group is responsible for examining five iterations of the term including its first appearance, its most recent version, and any three versions of a group’s choosing. After examining all five versions of their term, each group has to answer five questions:

1. When did the term first appear on Wikipedia?
2. Out of the five versions of your term, what revision/edit seemed to be the most significant? Why?
3. How does the formatting and style of Wikipedia affect how you read the definition? What parts of the definition seem to be the most important? Least important?
4. Do you think the emergence of new technology has influenced the evolution of your term’s definition? If so, how?
5. Who are the users contributing to your term? Is there anything that stands out about those users?

I ask these questions to get the students thinking about their terms from a historical perspective as well as begin thinking about the terms from a more critical perspective.

The first question is a simple one to answer, but provides the students with an easy way to start investigating their term further. Also, since I have each group looking at a term related to technology, they often find things to point out in their responses. For example, multiple groups have looked up terms like iPhone, which released its first model in June 2007. A lot of students begin to contextualize or analyze terms like this by thinking how fast we incorporate technology into our daily lifestyles or how a technology becomes so ubiquitous that that an audience forgets how “new” it actually is.

The second question, which asks students to look at five versions of a term, gets them to start thinking about the type of edits and revisions made on Wikipedia. Within the *View history* page, the user has access to every version of a term since it was first introduced on Wikipedia. Additionally, the *View history* page provides users with information about the date a new version was created, the user who made a revision or edit, the size of the revision (measured by characters), and a summary of the edit. The summary of the edit designates the type of edit made (e.g., minor edit, section edit, or automatic edit summary) as well as a brief description of the changes made. For example, a description of an edit might be “Sorry, but I just had to rewrite that. The language was unnecessarily complicated” or “Fixed grammar.” Finally, users are able to select and compare two versions of a term, which allows them to view the two versions side by side with any changes highlighted by bold print. By viewing these versions and their corresponding edits, students begin to see the type of edits and revisions made to a term as well as assess their value. Students respond to this activity

by becoming more critical of the types of edits and revisions made to a term, as well as how they affect the perceived quality of it, and start to think about the types of edits or revisions they plan to make with the final part of the activity.

For the third question, students have to comment on the format and style of Wikipedia with a focus on how the layout affects the meaning of a term. Again, this is perhaps an easier question to explore, but the idea of organization and layout feeds into the genre of technical definitions and descriptions. With technical writing, the audience is often scanning the information rather than reading it verbatim. Consequently, the layout and organization become important for how an audience reads a document and what they get from the document. With Wikipedia, students usually address the fact that the layout, the inclusion of anchors, and the use of headings (that can go three levels deep) privileges the information. They often describe how information above the *Contents* box is the most important while the rest of the information's value is based on where it appears in the *Contents* box with information closer to the top being more important while information found lower is less important. Based on these observations, the students begin to think about how they will compose content for the term with a specific focus on where it should be placed in relation to the existing material.

The fourth question, more than the others, was included primarily because of the focus on technical definitions and descriptions. By asking whether or not the emergence of technology has influenced the evolution of the term's definition, students have to begin critically reflecting on their term as well as technology itself. One area that we cover in the class is the evolution of technology in relation to ideas of social construction or technological determinism. Students discuss whether there is a

combination of power and values that feeds into the evolution of technology (i.e., social construction) or whether technology evolves through a natural progression devoid of human agency (i.e., technological determinism). While groups vary on their response, they often chart out an evolutionary path with their selected term. For example, a student group that explores “iPhone” as their term may quickly discover that the device is not just a phone but also a conglomeration of a phone, a camera, a music/video player, and several other preexisting devices. This type of discovery complicates how students think about technology and makes them more critical of how they assess it.

The last question has the students research the users who make contributions to their selected term. To do this, students go back to the *View history* page of their term and click on the users associated with a given edit or revision. There are three broad types of users listed: unregistered users, bots, and registered users with profile pages. Unregistered users are users who edit Wikipedia pages without creating a Wikipedia account. Although they are not registered, their contributions are still tracked through the IP address of the user’s computer. Clicking on an unregistered user’s IP address shows a page that displays all the edits and revisions made through that IP address. Bots are automated or semi-automated tools that are created by Wikipedia and its users. Clicking on a bot username loads a page that lets the reader know whom the bot belongs to (i.e., a user or an official bot from Wikipedia), an emergency shutoff button for the bot, and a detailed description of what the bot is programmed to do. Registered users maintain profile pages that can be modified in diverse ways. Profile pages are wiki spaces that are constructed by each user with the ability to modify both the layout and content. Users may choose to construct their page like a general Wikipedia page or create a more personal layout. Users can decide to

write information about themselves or incorporate “User Boxes” that display a wide range of information. For example, User Boxes may include information about a user’s education, languages spoken, personal information (i.e., age, gender, location, etc.), places traveled, interests, peeves, and others. Additionally, the User Boxes display badges that users earn through their participation on Wikipedia—badges that demonstrate their status or badges that give them special permissions not available to all users (e.g., editing restricted pages, pending changes review rights, rollback rights, etc.). Figure 1 shows four different profile pages from Wikipedia. After viewing the different profile pages, students have the opportunity to discuss how the information that users display affect how the audience perceives the contributions on Wikipedia. For example, in contributing to a term like “war,” a 12 year old user who describes how he likes war movies in his profile versus a 42 year old who includes in her profile that she is a veteran and has an “Experienced Editor” service badge can have very different effects on how readers perceive their work.

In addition to talking about ethos and authorship, instructors could have their students create profile pages in order to think about ethos and what the students would want to convey to an audience. By extending it to this type of activity, instructors make students reflect on their own experiences and how those experiences work together to create an identity.

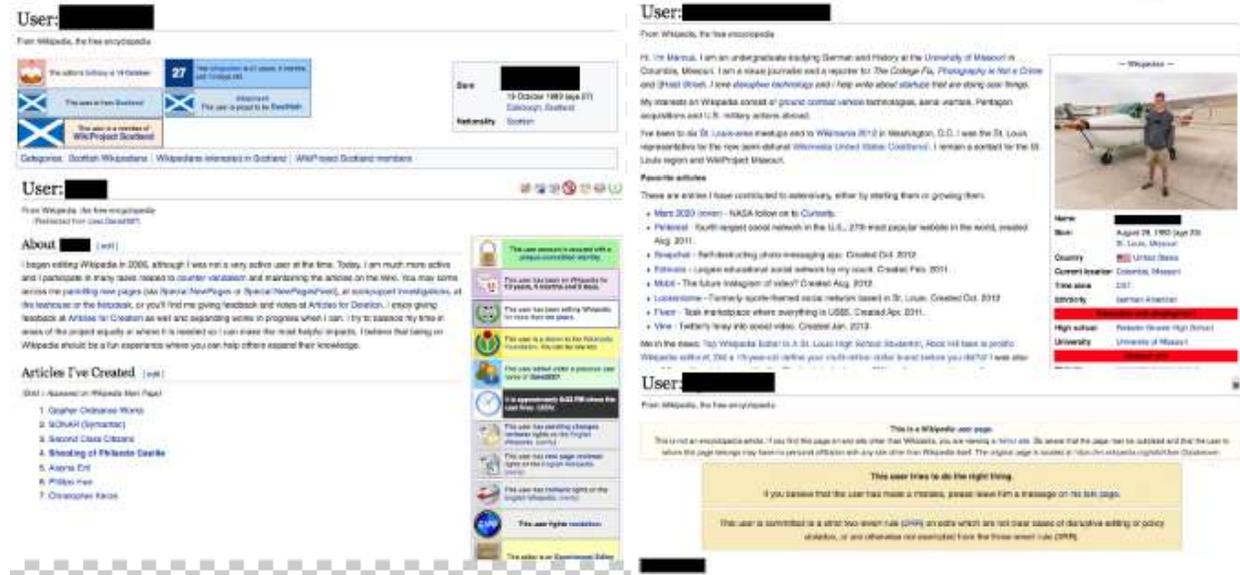


Figure 1. Sample Profile Pages from Wikipedia

After completing the questions related to the history of their term, students are asked to view the *Talk* page, which includes conversations on the aspects of a term that should be considered for revision.

Talk

The *Talk* page serves as one of the most vital and interesting parts of Wikipedia. In one way, it serves as the space where editors work towards building consensus on making changes to existing terms. However, from a pedagogical perspective, the *Talk* page acts as transparent window for students to understand the revision process in new ways, ways that are grounded through specific examples on Wikipedia.

Learning opportunity: Writing as a process. In addition to the *View history* page, the *Talk* page offers another opportunity to discuss writing as a process because it details the editing process that occurs among the Wikipedia community. For example, the *Talk* page for “family,” includes 43 different sections that discuss minor edits and global revisions. These sections also differ in the amount of content they discuss. For example, one section, entitled “family (taxonomy),” states “someone should create an article for family, as used in taxonomy (eg. Family Araceae)” (Talk:Family, n.d.). Other sections include several paragraphs that describe the need for a complete overhaul of specific sections. The *Talk* page provides a valuable learning opportunity because it demonstrates a complex process that is difficult to teach in the classroom. Instructors often incorporate methods that focus on the revision process including peer reviews, instructor feedback on drafts, and portfolios that include reflections on the changes made between drafts of a paper. Despite these efforts, students often have a very limited understanding of what it means to revise a paper. Instead of focusing on larger ideas or global revisions, students frequently make small changes to the grammatical issues because it takes less time and are easier to do than revising significant parts of a paper. The “Talk” page offers one way to potentially challenge students’ understanding of edits and revisions, and it could be incorporated in several unique ways to benefit technical writing projects.

Learning opportunity: Citing sources. In order to be an effective “encyclopedic” tool, Wikipedia has to provide accurate content for its users. In doing this, Wikipedia approaches a topic that is very relevant within the writing classroom, citing sources. Students need to cite the ideas they use from other sources and do it in a manner that adheres to a discipline specific style (e.g., MLA, APA, etc.); however, students often fail to see why it is important. This is especially true if they do not have

a broader understanding of style guides and why styles are used in academia as well as professional environments. Within in the “Contributing to Wikipedia” page, Wikipedia provides a general context for why it is important to cite sources, but it also provides links to two pages: “References dos and don’ts” and “Citing sources.” While one of those pages provides some quick tips on what to do while editing in Wikipedia, instructors can use the “Citing sources” page to have in-depth discussions about the importance of including citations. The “Citing sources” page is broken down into 16 sections with many of them having one to two levels of sub-sections. The most important section may be the one that addresses why it is important to cite sources. According to Wikipedia, it is important to cite for multiple reasons including: demonstrating that information is supported by reliable sources, improving the credibility of Wikipedia, showing that the content is not original research, helping users find additional information on a given subject, and avoid plagiarizing ideas from other sources (Citing sources, n.d.). Wikipedia also addresses the fact that sources are “desirable” for information that could be considered contentious—either to individuals or ideas.

Instructors can use each of these points to initiate a discussion on citations with students. Students then have the opportunity to see the larger context for incorporating citations and move beyond the simple explanation of “because they are required.” In addition to covering the main principles behind including citations, Wikipedia also provides significant information about more specific components of citations. For example, the “Citing sources” page talks about how to include inline citations, how to identify the different types of information in a citation from different media, how to decide whether or not a source is credible, as well as others.

Although the “Citing sources” page is separate from *Talk* pages, editors often discuss citations on *Talk* pages, often in relation to Wikipedia standards. Editors frequently address the need to include more citations, incorporate stronger citations, or how a citation does not work in a specific context. Each of these situations helps students better understand the role of citations and how they function outside of “academic” environments. While Wikipedia may not use a citation style that translates to MLA or APA, students may begin to see the value of citations in a different light and understand why they are important.

Talk activity. The second part of the activity has each student group view the *Talk* page for their term and features an ongoing discussion about aspects of the term that could be modified. The students read through the page and answer the following three questions:

1. Are there any ideologies being discussed on the *Talk* page? If so, what are they?
2. Is the discussion focused on small or larger revisions? Or both?
3. After viewing your term’s history and its discussion about edits, what revision would you make to the definition? Why?

These three questions are meant to get the students thinking about how they want to proceed with the final part of the activity, contributing new content to the term.

The first question has students investigate whether or not any ideologies are discussed on the *Talk* page. This question presents the students with a challenge because it forces them to think about whether language is objective or subjective. A lot of times, students discuss how they initially read the definition of their term, but change the way they understand or perceive it after viewing the *Talk* page. For example, when looking at the term “family,” students find several discussions that

argue about how we define family (e.g., “family orientation vs. family of origin” or “new family structure”). The results of these conversations on the *Talk* page have significant impacts about how the actual term is defined on Wikipedia. Similarly, there are often ideological conversations about terms related to technology. For example, Wikipedians discuss the purpose a term’s definition (i.e., marketing vs. objective presentation) or what types of information are most important and where that information should be located within the term. By thinking about the ideologies being discussed about Wikipedia terms, students start to think about how these ideas will factor into their own contributions to Wikipedia.

The second question, which asks students to look at the level of revisions being discussed in the *Talk* page, serves as another opportunity for them to start thinking about their own revisions. By talking about the differences between smaller and larger revisions, students begin to see where they can potentially contribute to a term. Additionally, they start thinking about the differences between edits and revisions—both in relation to the Wikipedia term as well as their own writing. At this point, students answer the third question as they begin to think about the type of content they will work on when they revise their term and how it will fit in with the discussions on the *Talk* page. This final question serves as a planning stage in which each group can use the first two activities to think about how they will make edits during the final part of the unit.

Editing the Term

While the *View history* and *Talk* pages offer several pedagogical opportunities, the *Edit* page is still crucial because it provides students a space to apply the knowledge they learned from the previous two activities. Additionally, students learn how to write within a set of guidelines and for a specific audience, which are vital skills to possess as a technical writer.

Learning opportunity: Writing within community guidelines. Technical writing often includes writing that conforms to a specific style. These styles can be dictated by an employer, a client, a grant funding institution, as well as others. Consequently, technical writing students need to learn about style, and one way to teach style is to use Wikipedia's community guidelines.

Wikipedia provides two pages that are great resources for writing within their community guidelines: "Contributing to Wikipedia" and "Student Assignments." The "Student Assignments" page provides several important topics related to incorporating Wikipedia into the classroom, but "Contributing to Wikipedia" provides much more detail about working within a set of parameters. Within the first section, Wikipedia states its purpose as the opportunity to "create a web-based, free content encyclopedia of all branches of knowledge, in an atmosphere of mutual respect and cooperation. The goal of a Wikipedia article is to create a comprehensive and neutrally written summary of existing mainstream knowledge about a topic [...]" (Contributing to Wikipedia, n.d.). The entry continues by encouraging users to write in a "fair and accurate manner" with a "just-the-facts style." However, beyond the basic mission of Wikipedia, the page gives specific information about using the *Talk* page to talk with other users about potential edits as well as detailed advice about contributing through creating new articles, renaming and deleting pages, inserting images/sounds/videos,

building lists/tables/templates, including portals and topics, and learning how to program and perform maintenance. By examining this page, instructors provide students with an opportunity to reinforce their existing knowledge about other style guides (e.g., MLA, APA, Chicago) as well as learning about why style guides are important in technical writing. Additionally, the “Contributing to Wikipedia” page can get students thinking about audience—an audience that extends beyond the instructor as the sole reader and evaluator of a student’s work.

Learning opportunity: Writing for an audience. Writing instructors often discuss the importance of audience, especially in technical writing courses. However, students often have trouble understanding audience due to the limited context of most classroom assignments. Within most classroom assignments, students see the instructor as the primary audience, if not the only audience, of their work. However, students who compose work for Wikipedia not only have an audience that extends beyond their instructor but have multiple audiences that they have to consider. Students may still view the instructor as their primary audience, but they also have to cater their writing to other Wikipedia users who will view their content for editing purposes as well as a more general audience that may view the term. For example, a student from Illinois may decide to contribute to the “student teaching” page on Wikipedia. During this process, the student may use a source that focuses on student teaching in Illinois for his contribution. However, another Wikipedia editor may quickly point out that that student cannot use that source because it discusses rules pertaining to student teaching in Illinois while Wikipedia has a global audience, not just residents of Illinois. In this example, the student begins to have a better understanding of audience both in terms of the sources he is using as well as the type of audience he is writing for. Additionally, students may feel that more is at stake in their writing since

an audience beyond their classmates and instructor could view it. In fact, students who have contributed to Wikipedia terms in my courses often provide status updates that their contributions have not been edited or deleted. This kind of situation demonstrates a different kind of investment in the writing process that is not possible when the only audience is the instructor who grades the material.

Learning opportunity: Writing in a wiki environment. The wiki environment that is used for Wikipedia provides an opportunity for students to learn about writing in digital environments. As discussed earlier, Wikipedia provides users with different options on how they can contribute to the website, but instructors can encourage students to use wiki markup to introduce them to markup languages and how they function on the internet. While different websites employ various forms of wiki markup, the inclusion of wiki markup gets students to think about different formatting—specifically related to the non-linear structure of writing on the internet. Additionally, technical writing instructors can use wiki markup as a scaffolding technique to transition into more complex markup languages, including HTML, XML, or SGML. By doing this, students are introduced to one entry point of writing for digital environments.

Edit activity. The final part of the technical definition/description activity is having the students add content to a term on Wikipedia. I give the students two options on how to proceed with the assignment. The first option is that they can create a brand new definition on Wikipedia and compose at least two sections for the new term. The second option is that the students can select an existing term and write one new section and make significant revisions to at least two existing sections. After choosing which direction they want to go, students are required to view the

“Contributing to Wikipedia” and “Student Assignments” pages and practice writing in a wiki environment before they proceed.

I include the “Contributing to Wikipedia” and “Student Assignments” as course readings because it provides students with the necessary context to succeed with their contributions. Wikipedia created the “Student Assignments” page as a way to introduce students to Wikipedia and offer some general advice on how writing for Wikipedia is different than writing for the classroom. Additionally, the page offers some helpful advice for getting students to think about what term they want to select, issues related to plagiarism and copyright infringement, and some unique situations related to specific topics. While the “Student Assignments” page offers a general overview of how to edit on Wikipedia, the “Contributing to Wikipedia” includes much more detail about each part of the editing process (Contributing to Wikipedia, n.d.; Student Assignments, n.d.). Within the page, Wikipedia provides instructions on everything from the purpose of Wikipedia to the basic components of contributing to writing scripts to create bots. Additionally, the page provides links to several other Wikipedia pages organized by broad categories like different protocols, how-to pages, writing advice, the community, and interactive help. Each one of these broad categories contains several related links (e.g., Protocols includes links to Editing policy, Etiquette guide, Dispute resolution, etc.). Between these two pages, students have all the necessary resources to create a new term or revise an existing one.

Finally, students practice writing in a wiki environment by using Wikipedia’s “Sandbox,” a space where they can practice editing before making changes to an existing term. Users have three options of editing in Wikipedia. The first one is writing in a source editing mode, a mode that includes all the wiki formatting, in which the

user uses wiki markup to format the text. For example, writing “**bold font**” in a wiki environment would appear as **bold font** on the actual Wikipedia page. I provide students with cheat sheets that describe how to make all the typographical changes as well as links and references in a wiki environment. The second option still has students work in the source editing mode, but they can make typographic changes and hyperlinks by using a set of word processing tools located on a ribbon at the top of the page. The third option for changing a term on Wikipedia is through visual editing. The visual editing mode employs the same word processing tools as the source editing mode, but the user makes the edits on the actual page of the term. After gaining some experience in writing in all three modes, the students are able to revise their selected term.

Assessing Student Work

Assessing student work on Wikipedia can be challenging. In assigning these activities, I have assessed student work in various ways. I have tried having students present on their contributions and findings, grading their contributions as a traditional student essay, and creating a rubric to address the different components of each activity. After running this assignment for several semesters, I have found having the students compose a reflection on the activities has been the most effective way for me to assess their work. I still assign grades to each activity based on effort, but the bulk of the students' grades results from them reflecting on their experience with the whole process. Students need to articulate what they learned through the research portion of the activities (i.e., primarily the first two activities) and then discuss how they used this new knowledge to help them contribute to new or existing terms on Wikipedia. The

next section details some of the learning objectives that students have addressed in their reflections as well as some of the observations I have made from their work.

Conclusions

In their examination of wikis, Maxwell and Felczak (2008) describe how “wikis provide an ongoing view of a culture as a *document*” (p. 103). This “ongoing” nature is also present in Wikipedia in how Caeton (2008) points out that “Behind the relative stability of the articles themselves, which often enough were barely stable, lay the discussion pages where meaning was constantly in flux” (p. 134). These two points are essential in showing how Wikipedia lends itself so well to technical writing. At the beginning of this paper, I argue that technical writing is not static but highly rhetorical. Technical writers employ rhetoric in their work by doing things such as analyzing audiences, structuring their writing, considering context of use, and developing an ethos as a writer. Consequently, their writing is also often “in flux” depending on the purpose or goal of their writing. Miller (1979) reinforces this idea stating, “Facts do not exist independently, waiting to be found and collected and systematized; facts are human constructions which presuppose theories....Good technical writing becomes, rather than the revelation of absolute reality, a persuasive version of experience” (p. 615-6). I would argue that Miller’s points could be applied to Wikipedia too. While Wikipedia requires a neutral point of view, the *Talk* and *View history* pages of most terms demonstrate that a number of editors work together to construct meaningful entries that continue to evolve over time. Additionally, editors attempt to create entries that meet the needs of their audience, essentially working to persuade users that

Wikipedia is a credible, useful site. In adopting the Wikipedia activities described in this article, I believe that students begin to see the rhetorical nature of technical writing.

In working with Wikipedia, my students often talk about how Wikipedia differs from other work that they have done in the classroom. Often, students' first react to how their perception of Wikipedia quickly changes upon using the *Talk* and *View history* pages. Students have heard that anyone can edit Wikipedia and that it should not be used in the classroom, but they usually do not know what that truly means because their understanding of Wikipedia is limited to seeing a term's *Read* page (i.e., the final product of a term). However, after completing the *View history* and *Talk* activities, students have expressed how they understand why instructors do not want them to use Wikipedia as a source for their work. Students also discuss how they thought users would have to possess the necessary technical skills to edit a term and were surprised that users could edit terms using basic word processing tools. After working through the activities, students often allude to Wikipedia's accessibility and transparency as its most beneficial feature. Students point out how being able to see the *View history* and *Talk* page creates a unique way to see writing as a process and that completing the activities associated with these pages offers something more tangible than reading about the revision process in a textbook or doing traditional peer reviews in class. Likewise, they talk about how the editing process is easier when they can work within the Wikipedia community because they are able to see what types of edits have been successful in the past, submit draft material to a group of editors, and make changes based on the editors' feedback. It is interesting to note that the *Talk* page can function similar to traditional peer reviews, but my students have described how they feel they can trust Wikipedia editors' feedback more than they can their classmates. Upon completing the technical definition assignment, students seem

more invested in their work than traditional assignments. They frequently check on their contributions to Wikipedia weeks after they have submitted their work to see if their revisions have remained.

I believe that a significant reason that students seem more invested while working with Wikipedia is because they value their work in a different way than traditional assignments. Slack, Miller, and Doak (2004) argue that technical writers “contribute to the articulation of meaning and are thus implicated in relations of power and authority” (p. 161). I would argue that in contributing to Wikipedia, students participate in these relations of power and authority, and they gain a better understanding of what it means to be a technical writer. Longo (2000) points out that, “ideas cannot circulate as currency in an economy of scientific knowledge unless you can communicate them well” (p. 74). By using Wikipedia, students participate in an “economy” of knowledge and demonstrate rhetorical competence by having their writing accepted by the Wikipedia community—both of which are invaluable to learning about technical writing.

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