

From Audience to Authorship to Authority: Using Wikipedia to Strengthen Research and Critical Thinking Skills

Michele Van Hoeck and Debra Hoffmann

This paper looks at Wikipedia's effectiveness as a pedagogical tool to encourage students to think critically about notions of audience, authorship and authority, and also Wikipedia's impact on student research persistence. Two case studies are presented in which Wikipedia was used as the platform for assignments in 1) a two-unit freshman information literacy course at California State University (CSU), Maritime (Cal Maritime), and 2) in two three-unit, cross-listed upper-division courses at CSU Channel Islands (CI). At Cal Maritime, the course culminated with students significantly expanding a Wikipedia article. At CI, one course used Wikipedia to explore issues of authority and expertise; the other course used Wikipedia to think critically about notions of authorship and audience. Cal Maritime data on student attitudes, research practices such as interlibrary loan borrowing, and student citations suggest the Wikipedia platform had, overall, a positive impact on research persistence. Finally, the authors discuss lessons learned from initial use of Wikipedia in the classroom and opportunities for instruction librarians to incorporate Wikipedia into information literacy instruction outside of a credit-bearing course.

Introduction

Information Literacy instruction often focuses on cautioning students regarding the use of Wikipedia as a credible source for their research, as authors of Wikipedia articles are often anonymous, and editing Wikipedia does not require proof of expertise. The popularity of Wikipedia among college students, however, has led some librarians to move from absolute discouragement of its use to finding ways to use Wikipedia as a teaching tool to evaluate sources, as well as to explore Wikipedia's potential as an appropriate tertiary, or background, source.

This paper describes the use of Wikipedia, not as a source, but a place for students to practice research

and critical thinking skills as editors and creators of content. We take a case study approach in presenting experiences on two California State University campuses in which Wikipedia was used as the platform for assignments in credit-bearing information literacy and critical thinking courses.

One case reports on experiences in LIB100, a two-unit freshman information literacy course, at California State University Maritime (Cal Maritime), a participant in Wikipedia's United States Education Program in spring 2012.¹ Most students in the class were Engineering Technology majors. The course culminated with a final project in which each student significantly expanded a Wikipedia article, most in the

Michele Van Hoeck (mvanhoeck@csum.edu) is the Instruction Coordinator for the Library, California State University Maritime. Debra Hoffmann (debra.hoffmann@csuci.edu) is Head of Public Services & Outreach for Broome Library, California State University Channel Islands.

areas of marine engineering or maritime history. The rationale for changing the audience for student work, from a single instructor to a more public, authentic audience, was to improve student motivation and persistence in conducting research assignments.

The other case looks at two three-unit, upper-division courses at California State University Channel Islands (CI). One course, ENG 310 (co-taught by a faculty librarian for the English program) used Wikipedia as a pedagogic tool to critically examine notions of authority and expertise. The other course, COMM/LIB 211 (co-created and co-taught by a faculty librarian and a faculty member from the Communication program) used Wikipedia to encourage students to think critically about authorship and audience.

This paper discusses Wikipedia's effectiveness in encouraging students to think critically about notions of audience, authorship and authority, as well as Wikipedia's impact on student research persistence. Data on student attitudes, research practices such as inter-library loan requests, and citations by students at Cal Maritime is presented, as are anecdotal findings related to critical examination of Wikipedia by students at CI. Finally, the authors discuss lessons learned from uses of Wikipedia in the classroom and opportunities for instruction librarians to incorporate Wikipedia into information literacy instruction.

Literature Review

In the twelve years since its creation, Wikipedia's reputation in academia has been mixed, but there has been no shortage of academic study of this popular website. Possibly the most well-known empirical examination of Wikipedia as a source is the 2005 *Nature* study, in which a sample of science articles on Wikipedia was found to have an average of four errors per article, as compared to three per article in the *Encyclopedia Britannica*,² a finding refuted by *Encyclopedia Britannica*.³

The nature and extent of student use of Wikipedia has been documented in two Project Information Literacy studies. 75% of college students reported at least occasionally using Wikipedia for school assignments, with most using it at or near the beginning of the research process.⁴

Despite cautionary tales of disinformation,⁵ official banning as a source,⁶ unfavorable comparisons to traditional encyclopedias,⁷ and critique regarding adherence to its own quality standards,⁸ Wikipedia remains a well-used educational resource. In fact, ac-

cording to a recent Pew Research Center survey, education level is the strongest predictor of Wikipedia use. Pew research found Wikipedia is most popular among Internet users with at least a college degree, 69% of whom use the site.⁹

A 2011 opinion piece in *The Chronicle of Higher Education*, written by a publisher of scholarly encyclopedias, advised academics to contribute to Wikipedia in order to improve it. He also urged academic publishers to build links between this "pre-search" tool and more sophisticated sources, saying Wikipedia was an important part of the educational "information ecosystem."¹⁰

Several academic librarians heeded this call, or more accurately, had already published results of this type of link building years earlier. An academic librarian made a similar call in 2008, recommending active engagement with Wikipedia to facilitate discovery of other library resources.¹¹ At the University of Washington Libraries,¹² the University of North Texas,¹³ and Wake Forest University,¹⁴ librarians systematically added links from relevant Wikipedia articles to special collections and other digitized sources.

Wikipedia's connections within the information ecosystem of academia have grown beyond surreptitious use of a disapproved source. The remainder of this literature review will focus on the use of Wikipedia for instruction.

Information Literacy Instruction

A 2010 survey of instruction librarians' (n=50) use of Web 2.0 tools found about one-third were using social media such as blogs, wikis, and social bookmarking to teach information literacy concepts. In follow-up interviews (n=8), two subjects reported using Wikipedia to illustrate the necessity of evaluating information found online.¹⁵

As early as 2008 some academic librarians were advocating for removal of the "stigma" of Wikipedia use and highlighting its potential value for information literacy instruction;¹⁶ one author aligned all five ACRL information literacy standards with specific Wikipedia instruction recommendations.¹⁷

Other authors have noted that recognizing the importance of social context to creating, evaluating, and communicating information, such as that found in participatory media like Wikipedia, allows individuals to relate their skills to whatever context they find themselves in, within and beyond academia.¹⁸ Wikis

“can have a solid pedagogical basis that enhances student learning while at the same time making connections with technologies that are already being used for research purposes and in daily life outside of the classroom.”¹⁹

Deitering and Jameson describe an embedded library/composition assignment in which students analyze the “scholarly conversation” located on Wikipedia article Talk pages, especially articles with a history of disagreement and debate. The authors describe the transparency of Wikipedia’s article creation process as “invaluable” in illustrating to students both the ephemeral nature of Wikipedia-based knowledge as well as the dialectical nature of knowledge creation in general.²⁰

Francke and Sundin conducted focus groups with secondary school librarians and teachers in Sweden (n=17) to discuss the use of participatory media, including Wikipedia, in teaching evaluation of sources. Four different conceptions of credibility emerged from focus group discussion, reflecting a variety of approaches to using Wikipedia to teach source evaluation.²¹

With the exception of Deitering and Jameson, none of these sources from the library literature evaluates the impact of Wikipedia-based pedagogy on student learning or practices, and only one²² mentions the potential value in having students make substantial contributions to Wikipedia.

Despite a dearth of published discussion, students in information literacy courses have contributed to Wikipedia articles since at least 2007. Wikipedia’s directory of education projects notes information literacy-oriented courses at a small number of institutions, all the result of collaboration between librarians and other faculty.²³ A conference presentation on student authorship of Wikipedia articles at New Jersey Institute of Technology notes a high level of student engagement and effort, as well as anecdotal report of deeper learning of information literacy concepts.²⁴

Wikis and Active Learning

Several authors have noted wikis foster active learning. They complement the teaching and learning paradigms by allowing students to actively engage the material in ways not always possible with traditional class texts.²⁵ Such an environment can enhance collaborative, interactive and integrating assignments. Wikis encompass the teaching paradigm and the learning paradigm and can allow students to actively engage course material in ways that are not always

possible with traditional teaching methods.²⁶ Students are more likely to take risks, communicate and defend their ideas, discuss controversial issues in online groups and create situations where students are both teachers and learners. Using wikis as a teaching tool enhances an instructor’s portfolio of teaching strategies and can transform traditional course activities into something that can instill in students the value of lifelong learning.²⁷ Wikis as a classroom tool can foster collaboration and the sharing of information, and encourage students to take charge of their learning. Not only does it allow learners to work cooperatively/collaboratively, but it also allows them to create knowledge and reflect on that knowledge.²⁸ Using web 2.0 tools such as wikis with students to create public information resources allows them to engage in the intellectual work of publication and knowledge production, and fosters opportunities for reflection and learning.²⁹ As a classroom tool, wikis can take cooperative learning to the next level. With cooperative learning, “students are encouraged to participate in group work, and they are guided through the process step by step by their teachers. Collaborative learning...is one that takes place when the students are given more freedom in determining the content and direction of the group work. At this stage, they are more independent.”³⁰

Nature of Authority

In examining notions of expertise and authority, a review of the literature looked at the concept of expertise and how Wikipedia represents a shift in how knowledge and expertise and authority are traditionally viewed. Pfister³¹ argues that conventional ways of organizing knowledge produced definitions of expertise that were predicated on professional training, accreditation, and academic peer review. Pfister asserts that while both Wikipedia and traditional encyclopedias define their own notions of authority or expertise, Wikipedia is an example of “networked” expertise, where information comes from multiple reference points toward a central, aggregated location. Knowledge is not about the discovering a fact or claim, but about the ability to craft information in a way that generates facts or claims with common accepted legitimacy.³² O’Neil³³ concurs. Wikipedia’s cooperative process seeks to democratize knowledge production so that anyone can claim the title of expert- among producers and consumers of informa-

tion, every Wikipedia entry can generate a debate as to what is correct.³⁴ In pre-online culture, the credibility of written texts rested with the agencies that produced and distributed them; in the online environment, the ability to produce and distribute information is widely available.³⁵ While production by a publisher still carries weight, “authority is now often determined by the accumulation of judgment from people who would have once been silent members of the audience.”³⁶ Keen³⁷ cautions that information created by amateurs can often not be trusted, forcing information seekers to become amateur editors and critics themselves, and left with no choice but to view all information with skepticism.

Hartelius³⁸ agrees that Wikipedia challenges traditional assumptions surrounding the notions of authority and expertise. Traditionally, expertise presupposes mastery and specialization, that someone who is a credentialed expert in a subject also speaks and writes about that subject. Within Wikipedia, scholars and laypeople are indistinguishable—here, one person edits another person’s work with no special consideration for degrees or affiliation. For Wikipedia, knowledge is created from a process of collaborative development rather than the property of a single person. While Wikipedia aims to publish preexisting knowledge, its decision to present information about topics that may not be included in traditional encyclopedias is the creating of new expertise.³⁹ Wikipedia represents a radical form of anti-credentialism: expertise is no longer embodied in a person but in a process—the interactions between individual authors and a widely diffuse peer community.⁴⁰ Sanger⁴¹ ponders if Wikipedia has changed the nature of knowledge itself. With Wikipedia appearing to change some people’s notions of what “we all know,” and with many consulting an encyclopedia “anybody can edit” for answers, conventional wisdom and accepted knowledge seems less tethered to experts and gatekeepers of information.⁴²

Authorship

Collaborative writing using wikis inspires contributors to the wiki to share a more communal notion of authorship and textual property.⁴³ Wikis expand online readers’ participatory powers and broaden traditional views of authorship.⁴⁴ Weingarten and Frost⁴⁵ assert that the collaborative nature of wikis makes them an ideal tool for teaching alternative ideas of

authorship that emphasize creation as a collective act rather than an individual one. Wikis enable collaborative multi-authored writing to better harness collective knowledge.⁴⁶ Writing in a wiki environment facilitates more formal, topic-focused and depersonalized interaction. “Each edit makes a concrete contribution to a collaborative written product, with authorships relegated to a separate page that only the most serious of readers are likely to notice. Wikis are thus an especially powerful digital tool for knowledge development, and thus for education.”⁴⁷ Further, incorporating wikis into a course encourages students to write independently outside of the classroom and models the way writers interact with discourse communities in the real world.⁴⁸

Audience

Traditionally, students typically write for the purpose of class assignments and often struggle with the notion of writing for a different “audience” other than their instructor, audiences that may have different assumptions and values that would influence what and how students write.⁴⁹ Increasingly, changing technologies affect the way students think about audience when they write online. The notion of audience has become interactive and participatory. When writing for an online audience, students are now aware that their writing will reach real people with real opinions, and who may respond to what has been written.⁵⁰ In essence, the distance between the author and audience is eliminated when the audience can directly edit the author’s work.⁵¹

Motivation, Persistence, and Interlibrary Loan: Assessing the Cal Maritime Pilot Program

According to a recent qualitative study by Project Information Literacy (PIL), one trait employers would like to see in recently hired college graduates is persistence in solving information problems. Many employers in the sample stated that new hires should be willing and able to pursue needed information beyond a page of Google results, using a variety of sources and an iterative approach. Employers told PIL that new hires often did not demonstrate these competencies.⁵²

Academic librarians are familiar with the phenomena of student satisficing during research for school assignments based on convenience and familiarity. One multi-part, multi-institution study found that convenience is a central factor in source selection

and other information seeking behavior during both academic and everyday-life research, particularly among younger undergraduates.⁵³

If one assumes motivation positively impacts persistence, then more motivated students would be more likely to persist in pursuing quality information and less likely to satisfice with inferior sources. Instruction librarians at Cal Maritime hypothesized that contributing to a popular website such as Wikipedia, with multiple potential readers from outside academia, would be motivating for Cal Maritime students, due to the institution's emphasis on experiential learning and applied technology.

After the "Wikipedia Semester" concluded, Cal Maritime librarians considered a variety of options to evaluate its pilot experience. In order to look specifically at persistence, the Instruction Coordinator collected three semesters of data on student use of one of the least convenient sources of information available on campus, interlibrary loan. During the time period in question (spring 2010-spring 2012), requesting an interlibrary loan (ILL) at Cal Maritime required knowledge and use of a specialized database, a delay of 2-7 days to receive material, and a trip to the library to pick up material. Further, ILL is one of several research choices students have, all of which typically offer more immediate delivery of information. Therefore, for the purposes of this investigation, we suggest that use of the interlibrary loan service requires and reflects a relatively high degree of user motivation and persistence.

Little recent research has been published on student use of interlibrary loan services. One study of forty-two Canadian academic institutions found a significant positive correlation between institution-level interlibrary loan borrowing activity and measures of overall research activity at that institution, such as journal article publication.⁵⁴ This finding suggests a possible association between interlibrary loan borrowing and authorship of users of the service.

It should be noted that student knowledge or use of ILL service was not a learning outcome for LIB100. ILL data is used here as an indirect measure of a more general desired outcome, research persistence.

In addition to collecting and analyzing ILL records across three semesters, the instruction coordinator administered a short survey to one section of LIB100. Finally, student work on Wikipedia was assessed for variety of source type. This focus on source

type was inspired by findings in the 2012 Project Information Literacy study suggesting employers associated variety of source type with greater levels of persistence and iteration in research practices.⁵⁵

Case: LIB100 pilot at Cal Maritime

For its pilot experience using Wikipedia in the classroom, two Cal Maritime librarians attended training sessions with Education Program ambassadors. Learning outcomes developed for LIB100 in spring 2012 were similar to those of previous semesters, corresponding to the five ACRL Information Literacy Competency Standards for Higher Education, with some customization regarding the Wikipedia platform.⁵⁶

Via reading and discussion assignments, LIB100 students learned about Wikipedia policy and culture and critiqued a set of articles on Wikipedia quality. They created user pages and practiced coding on a personal test page, called a Sandbox.

Students were introduced to the same search and evaluation competencies taught in previous semesters of LIB100, using academic, professional, and open web resources. They identified WikiProjects in maritime and engineering fields and corresponding undeveloped Wikipedia articles. They compared Wikipedia articles to related articles in the Oxford Encyclopedia of Maritime History.

As a final project, most students in one section chose to create a new Wikipedia article; most students in the other section selected pre-existing articles to enhance or revise. Near the end of the semester, students submitted drafts and conducted peer review of another student's article. Final drafts included inline citations, internal links and an APA bibliography of sources.

Compared to previous semesters teaching LIB100, the instructors noticed they were seeing more students outside of class, inside the library. Many students stopped by to discuss assignments, and it seemed as if more were showing up at the circulation desk (instruction librarians' offices at Cal Maritime are directly behind the circulation desk). Conversations with students about their Wikipedia projects reflected enthusiasm, frustration, engagement, even a sense of fun.

Assessment of the Pilot: Cal Maritime

1. Student Survey

One instructor administered a two-question survey to one section (n=23) near the end of the semester

TABLE 1
Student Survey

Question 1: Thinking back over our use of Wikipedia this semester, and the learning goals for this class, which statements match your experience? Choose as many as apply:

- I liked researching and writing in a public venue such as Wikipedia
- Doing school assignments in a public venue like Wikipedia made me somewhat or very uncomfortable
- Knowing my work was visible on the Internet caused me to do better work
- Knowing my work was visible on the Internet caused me to do lower quality work
- Submitting class work on Wikipedia had no impact on the quality of work I did
- None of these statements match my experience (please elaborate below)

Question 2: Any other thoughts on your experience using Wikipedia for coursework this semester?

to measure students' affective response to working on Wikipedia, and to have them self-assess the impact of a public audience on their work. Approval to use the following anonymous data was obtained from the Institutional Review Board of Cal Maritime.

Total percentages add to more than 100% because some students reported positive affect but also said the awareness of a Wikipedia audience had no impact on the quality of their work. One student reported negative affect but a positive impact on the quality of his work.

Most students submitted comments in response to the second, optional survey question. A representative sample of student comments, which ranged from enthusiastic to frustrated:

I felt that this was an excellent class in many ways specifically: understanding Wikipedia, understanding citations, understanding how to edit Wikipedia.

I liked the way that this class was structured because I saw a direct application of the work that I completed.

I like the way in which the course relates to the real world now. I especially appreciate how students are using their work to improve the quality and breadth of Wikipedia.

I enjoyed posting research on Wikipedia because it made my work look much more professional.

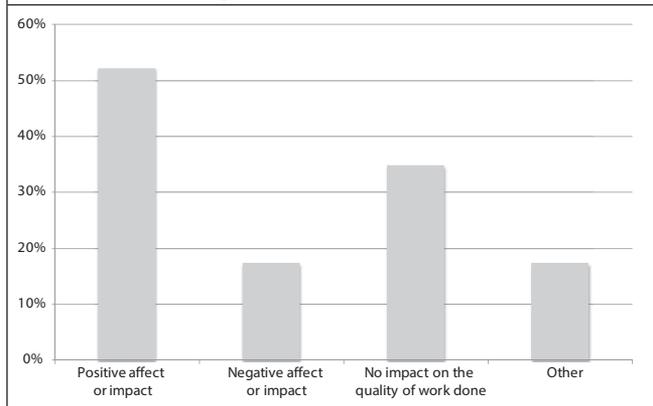
Learning how to best utilize and search in databases was the most valuable thing I took away from this class.

Working on Wikipedia made me a little nervous so I was not able to write as well because I was not writing like myself because I did not want to get criticized on the web.

This was honestly very frustrating. It was not the work it was the way the work had to be done. It would have been better if we just had to do an essay or something because finding something on Wikipedia and finding good solid information was enough to honestly make me want to quit on some assignments.

A class on Wikipedia should be done as an elective and not as a mandatory course for engineers. It's useless to license track engineers who will be spending most of their life at sea with no internet.

FIGURE 1
Students Self-Assess Impact of Wikipedia Audience (n=23)



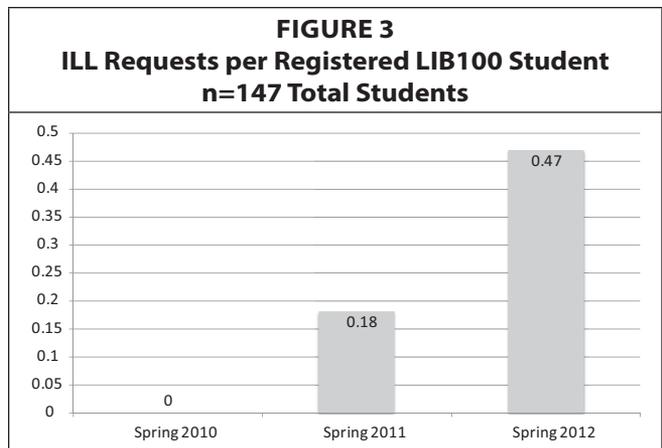
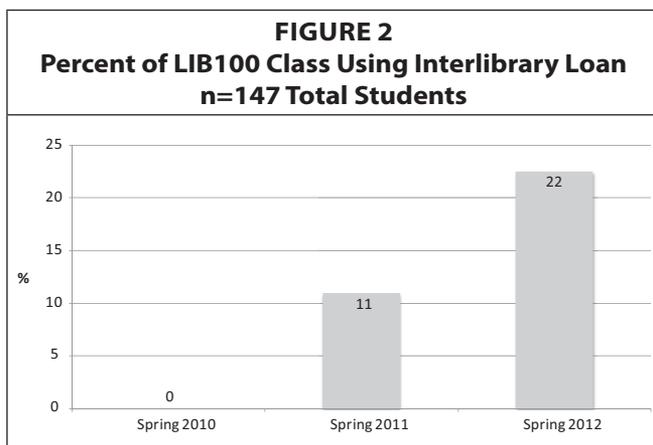
The survey indicates a significant number of students in this section did not feel motivated by Wikipedia's authentic audience, while about half reported a positive impact or attitude about the project. One unexpected thread through some comments was the perception that LIB100 was a class about Wikipedia, rather than an information fluency class using Wikipedia as a platform.

2. Research Practice Data: Interlibrary Loan

The Cal Maritime instruction coordinator compared the interlibrary loan (ILL) records of LIB100 students who completed Wikipedia-editing assignments with ILL records of LIB100 students who did not, just for the semester in which the students were enrolled in the class. The sample (n=147) included all students registered for LIB100 in spring 2010, spring 2011, and spring 2012 semesters (six sections total). These students were primarily freshman Engineering Technology majors, but the sample also included a small number of Business, Global Studies, and Marine Transportation majors, and a small number of upperclassmen.

Only the instance of using the ILL service was recorded; the material borrowed (titles of books, articles, etc.) was not identified or collected. During all three semesters in question, the ILL service used at Cal Maritime was provided via WorldCat. Because ILL data had already been collected during the normal course of providing ILL service in the library, no subject consent was gathered, but approval for the data analysis was obtained from the Institutional Review Board at Cal Maritime.

The percentage of LIB100 students using ILL was twice as high in classes working on a Wikipedia article compared to the previous year's classes, and the number of requests more than doubled.



There are several limitations to this method of evaluation. No attempt was made to determine if the ILL requests made by students were intended for work in LIB100, work in another course, or for personal use. Students selected their own research topics for all semesters, but topics selected for the Wikipedia project may have had less coverage by in-house sources than those topics researched in previous semesters.

Finally, a Library website redesign in Summer 2010 placed the WorldCat search box more prominently on the Library's homepage. This redesign may have caused students to be more likely to use ILL services in both the spring 2011 and 2012 semesters.

Nevertheless, the significant increase in use of a low-convenience library service in 2012 compared to 2011 suggests that some students may have been more motivated by a Wikipedia project to persist to a greater degree with research for authoring a Wikipedia article. Further research is needed on who uses Interlibrary Loan, why it is used, and with what impact, to determine if use of ILL reflects higher levels of motivation.

3. Variety of Sources Cited

Finally, the instruction coordinator looked at the primary artifact of student learning, the student-created Wikipedia articles. Because some students in one section worked with a partner, Cal Maritime students created a total of thirty-eight Wikipedia articles in spring 2012. These articles cited a total of 204 sources, an average of 5.4 sources per article.

To assess variety of source type, each source was identified as belonging in one of ten categories: books, patents, magazine articles, daily news articles, scholarly journal articles, .org websites, .mil/.gov/.edu websites, .com/.net websites, international (non-U.S.) websites, and company directories.

Student Wikipedia articles cited an average of three different source types. The source type cited most often in student articles was library books (64%), followed by .com websites, .org websites, and magazine articles, each used in over half the student articles. Most of these source types adhere, at least superficially, to Wikipedia's core policy document "Identifying Reliable Sources," which emphasizes secondary sources from reputable publishers and organizations, with an aim to providing information written in a neutral, encyclopedic style, rather than the more argumentative research paper style.⁵⁷

The final project assignment did not require students to use any particular type or number of source categories, although students knew their work would be evaluated partly on their selection of reliable sources as defined by Wikipedia policy. Given variety in source type was optional, and the most common choice (books) was arguably the least convenient to access, this data supports the notion that student research persistence for authoring Wikipedia articles was relatively strong.

Further analysis of the quality of student work, including the quality and appropriateness of sources selected for the topic, is pending a second sample of student-authored Wikipedia articles in spring 2013.

Case: ENG 310 and COMM/LIB 211 at Channel Islands

From 2006-2009, a faculty librarian and a faculty member from English co-taught ENG 310, a 3-unit, upper-division, writing-intensive research methods course. Students were each asked to choose one author, and spend the entire semester researching and writing about that author. Their first paper was always a small biographical paper with minimal research (3-5 sources), and the semester ended with students producing a major formalist critique paper on their author, with at least 15 or more cited sources. In between these assignments, students were asked to examine the Wikipedia page on their author (or create one if there wasn't one already). In examining their author's Wikipedia page, students were asked:

- *Based on the research you've already done on your author, how accurate is their Wikipedia page? How complete?*
- *What is the scope of the page? What is "intent" of the page?*
- *What is the authority of the source material? Of the authors? How can you tell?*

- *Are you as an "authority" able to contribute resource content or edit the page in any way?*
- *What information was not there that you expected to find?*

While some students each semester found their author's pages to be accurate and robust, the vast majority of students were often surprised at the inaccuracies, inconsistencies and incomplete nature of the Wikipedia entries. Most were surprised at the "non-scholarly" nature of the sources cited on the pages. Students were then asked if they felt that after their six weeks of researching their author (at that point in the semester) that they were "expert" enough to contribute accurate, meaningful content to their author's Wikipedia page. Each semester this would lead to wonderful dialogue among students in the class as they were asked to reflect critically on notions of "authorship" and expertise:

- *Were the contributors who first created the Wikipedia page experts on that author? How could they tell?*
- *After researching your author, are you now the experts?*
- *Do you have to be an expert to contribute to Wikipedia? If not, does this devalue expertise?*

Since 2009, a faculty librarian and a faculty member from Communication co-created and have co-taught an interdisciplinary course called Discerning Information in an Interconnected World. The course meets CI's critical-thinking requirement and provides students with strategies to help them make sense of an information-saturated world. Throughout the course, students critically assess information, differentiate the perspectives of information-seekers from providers and evaluate sources of knowledge through issues such as authorship, authority, information seeking behavior, gatekeeping, intellectual property and emerging information communication technologies. In this course, students are asked *What is information? Does information have value? What does it mean to be information literate? Should people be? Are you?* In addressing these questions, students create podcasts, Wikipedia pages, Facebook entries and Twitter posts.

Working in groups, students are asked to create or add to existing Wikipedia pages on topics chosen by the instructors. Students are asked to think critically about their topic in addressing the following questions:

- *Who is your target audience for the page and why? Who is likely to visit this page? What in-*

formation will your audience expect to find on the page when they get there?

- *What is the scope of the page? What is your intention in including or not including information on the page?*
- *What is your frame of reference or point of view: to inform? to be all-inclusive or just to cover one aspect of the topic?*
- *What types of reference sources and external links did you include and why?*

Groups present their pages to the class and must address these questions. After, students reflect on the creation process, focusing on authorship and audience.

Overwhelmingly, students look at Wikipedia much differently as creators and authors of information than they do as consumers of content. Because they work in groups, students find that they have to come to a consensus on what content to include, which is so different from the academic writing in which they normally engage. Students are quite surprised to find that their content has often been removed or edited by other (non- CI student) Wikipedia users- this truly underscores the changeable, temporary nature of Wikipedia content. Creating content for Wikipedia always affords great “teachable” moments and prompts much critical reflection:

- *How did “audience” influence your choice of content?*
- *In terms of authority or expertise, if content was edited or removed by others, why is one source considered better or more worthy of inclusion than another source? According to whom?*
- *Are one person’s edits more valuable or trustworthy than another’s? According to whom?*
- *If both an “expert” in a field and they as students can create a Wikipedia entry, are they themselves now “experts”?*
- *Will the audience for that Wikipedia page be able to tell the students’ entry from the experts’? Does it matter?*

Lessons Learned

The Cal Maritime Experience

While researching and writing for Wikipedia appeared to be motivating for a significant number of students, others felt uncomfortable writing for a public audience or frustrated by the need to identify a genuine

information need on Wikipedia. There remains the question of whether this type of assignment is a good fit for college freshmen. Most courses participating in the U.S. Education Program are upper division or graduate level courses.

The enthusiasm and quality of work by those students who were positively impacted by the Wikipedia assignment inspired a second iteration of the course in spring 2013. Responding to student feedback from the pilot, most Wikipedia work was done in the second half of the semester. The first half was spent in “classic” LIB100 mode, with two research assignments submitted to just the instructor. After the course midpoint, the focus shifted to Wikipedia: identifying final project articles, using new research competencies to gather and evaluate information, learning wiki-coding, and following Wikipedia community policies. The current instructor gave students the option to author their final project with a partner; collaboration could ameliorate frustration or discomfort with the platform.

The Channel Islands Experience

Both the Wikipedia author-page examination assignment as well as the Wikipedia group project continue to be used with students at CI. Both are hands-on, active-learning and interactive, and easily facilitate critical thinking and reflection by students. The activities are highly instructive and are more effective at enabling student learning than a standard lecture would be on the topic. With these assignments, Wikipedia is a tool that promotes self-discovery and peer-teaching in the classroom. As with any tool, one needs to know how it works and how to use it to be able to get the most out of it. Working with Wikipedia is just one tool of many that we as instructors would like our students to have.

Opportunities for Instruction Librarians

Evaluating, researching, and editing Wikipedia articles by students has shown great promise for the development of research and critical thinking skills. Instruction librarians who do not teach credit-bearing courses can:

Partner with faculty on campus who are assigning Wikipedia articles. Students in these classes may seek library resources with greater persistence than for other classes. The portal for the U.S Education program lists participating institutions but not all fac-

ulty who assign Wikipedia articles work through that program.

Offer instruction on Behind the Scenes (or Under the Hood) on Wikipedia. The History and Talk page of a Wikipedia article offer insight into the process and people behind an article that may have thousands of edits, illustrating the “research conversation” we seek to convey to undergraduates. Categories, Lists, and WikiProjects are forms of meta-data that can help with selecting a topic, providing disciplinary context, and identifying search terms.

Introduce Wikipedia’s policy on Identifying Reliable Sources. The section on the lesser reliability of “self-published” sources (including Wikipedia itself) can be particularly helpful in lessons on evaluating website quality. Given Wikipedia’s popularity with students as a “real world” source, identifying its fairly traditional criteria (in theory if not in reality) may, ironically, lead students to give more credence to academic standards.

Don’t be afraid to incorporate Wikipedia into your courses or one-shot sessions! Whether examining the scope and the resources of a page, considering author expertise or contributing content, Wikipedia affords hands-on, active learning opportunities and facilitates student reflection and critical thinking.

Conclusion

In the best cases, contributing to Wikipedia can have a meaningful and lasting impact on student learning. Interviewed nearly a year after her Wikipedia project was complete, one LIB100 student told her former instructor, “I really liked becoming a Wikipedian. I liked knowing that lots of people were working together, over time, to make articles better.”⁵⁸

Further research is needed to assess the usefulness of data such as interlibrary loan borrowing and variety of source type to measure research habits such as persistence and iterative searching. Also needed is more direct assessment of student work on Wikipedia.

Based on the authors’ experiences, Wikipedia can be an effective classroom tool in a variety of ways, encouraging students to persist further in the research process, engage in knowledge creation, and deepen critical thinking. Like any classroom tool, Wikipedia may not be right for every teaching situation, but librarians are encouraged to explore the unique opportunities that an open, editable information resource like Wikipedia affords.

Notes

1. Wikimedia Foundation. “Wikipedia Education Program.” (2013): http://outreach.wikimedia.org/wiki/Wikipedia_Education_Program. The U.S. Education Program, funded by the non-profit Wikimedia Foundation, began in 2010 as a pilot focused on improving Wikipedia articles about U.S. Public Policy. The program provided support materials and Wikipedia “ambassadors” for faculty willing to assign Wikipedia articles in their courses. By spring 2012, the program had expanded to more than 55 courses in a range of disciplines in the United States, as well as a smaller number of university courses in Brazil, Canada, and Egypt.
2. Jim Giles, “Internet Encyclopaedias Go Head to Head.” *Nature* 438, no. 7070 (2005): 900–901.
3. Encyclopaedia Britannica. “Fatally Flawed: Refuting the Recent Study on Encyclopedic Accuracy by the Journal *Nature*.” (March 2006): http://corporate.britannica.com/britannica_nature_response.pdf.
4. Alison Head, “How Today’s College Students Use Wikipedia for Course-related Research.” *First Monday* (2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2830/2476>
5. Katharine Q. Seelye, “Snared in the Web of a Wikipedia Liar.” *The New York Times*, December 4, 2005, <http://www.nytimes.com/2005/12/04/weekinreview/04seelye.html>
6. Noam Cohen, “A History Department Bans Citing Wikipedia as a Research Source.” *The New York Times*, February 21, 2007, <http://www.nytimes.com/2007/02/21/education/21wikipedia.html>
7. Lucy Holman Rector, “Comparison of *Wikipedia* and other Encyclopedias for Accuracy, Breadth, and Depth in Historical articles,” *Reference Services Reviews* 36, no. 1(2008): pp. 7–22.
8. David Lindsey, “Evaluating Quality Control of Wikipedia’s Feature Articles.” *First Monday* 15 (2010). <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2721/2482>.
9. Kathleen Zickuhr and Lee Rainie, “Wikipedia, Past and Present.” Pew Internet and American Life Project, 2011. <http://www.pewinternet.org/Reports/2011/Wikipedia.aspx>.
10. Casper Grathwohl, “Wikipedia Comes of Age.” *Chronicle of Higher Education* 57, no. 20 (2011): B2.
11. William Badke, “What to do with Wikipedia?” *Online* 32, no. 2 (2008), <http://www.infotoday.com/online/mar08/Badke.shtml>
12. Ann M. Lally and Carolyn E. Dunford, “Using Wikipedia to Extend Digital Collections,” *D-Lib Magazine* 13, nos. 5–6 (2007), <http://www.dlib.org/dlib/may07/lally/05lally.html>.
13. Dreanna Beldon, “Harnessing Social Networks to Connect

- with Audiences: If You Build It, Will They Come 2.0?" *Internet Reference Services Quarterly* 13, no. 1 (2008): 99-111.
14. Lauren Pressley and Carolyn J. McCallum. "Putting the library in Wikipedia." Online, 32, no. 5, (2008): 39-42. http://www.infotoday.com/online/sep08/Pressley_McCallum.shtml.
 15. Lily Luo, "Web 2.0 Integration in Information Literacy Instruction: An Overview." *The Journal of Academic Librarianship* 36, no.1, (2010): 32-40.
 16. Badke, 2008b; Adam Bennington, "Dissecting the Web through Wikipedia." *American Libraries* 39, no.7 (2008): 46-48.
 17. Eric Jennings, "Using Wikipedia to Teach Information Literacy." *College & Undergraduate Libraries* 15, no. 4 (2008): 432.
 18. Jennifer Hoyer, "Information is Social: Information Literacy in Context," *Reference Services Review* 39, no. 1 (2011): 10-23; Meredith Farkas, "Participatory Technologies, Pedagogy 2.0 and Information Literacy." *Library Hi Tech* 30, no. 1 (2012): 82-94.
 19. Greg Bobish, "Participation and Pedagogy: Connecting the Social Web to ACRL Learning Outcomes." *The Journal of Academic Librarianship* 37, no. 1 (2010): 63.
 20. Anne-Marie Deitering and Sara Jameson, "Step by Step Through the Scholarly Conversation: A Collaborative Library/Writing Faculty Project to Embed Information Literacy and Promote Critical Thinking in First year Composition at Oregon State University." *College and Undergraduate Libraries*, 15:1 (Spring 2008): 75
 21. Helena Francke and Olof Sundin, "Negotiating the Role of Sources: Educators' Conceptions of Credibility in Participatory Media." *Library & Information Science Research* 34 (2012): 169-175.
 22. Badke, 2008c.
 23. Wikipedia, "School and University Projects/2003-2008 Past Projects." (2013) http://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/2003-2008_past_projects
 24. Davida, Scharf, "Mythbusting: College Students as Wikipedia Editors: A Surprising New Pathway to Information Literacy," (lecture, MERLOT Conference: Teaching and Learning in a Networked World, San Jose, August 13-16, 2009), <http://library.njit.edu/library/staff/scharf/Scharf-Mythbusting-2009.ppt>.
 25. Piotr Konieczny, "Wikis and Wikipedia as a Teaching Tool." *International Journal of Instructional Technology & Distance Learning* 4, no. 1 (2007): np.
 26. Ibid.
 27. Ibid.
 28. Lim T. Henga and Marimuthua Rasaya, "Let's Wiki in Class." *Procedia - Social and Behavioral Sciences* 67 (2012): 269 – 274.
 29. Andrea Forte and Amy Buckman, "Writing, Citing, and Participatory Media: Wikis as Learning Environments in the High School Classroom." *International Journal of Learning and Media* 1, no. 4 (2010): 23-43.
 30. Ibid., 270.
 31. Damien S. Pfsiter, "Networked Expertise in the Era of Many-to-many Communication: On Wikipedia and Invention." *Social Epistemology* 25, no. 3 (2011): 217-231.
 32. Ibid.
 33. Mathieu O'Neil, "Shirky and Sanger, or the costs of crowdsourcing." *Journal of Science Communication* 9, no. 1 (2010): 1-6.
 34. Ibid.
 35. Bronwyn T. Williams, *Shimmering Literacies: Popular Culture & Reading & Writing*. New York: Peter Lang, 2009.
 36. Ibid., 44.
 37. Andrew Keen, *The Cult of the Amateur*. New York: Doubleday/Currency, 2007.
 38. Johanna E. Hartelius, "Wikipedia and the Emergence of Dialogic Expertise." *Southern Communication Journal* 75, no. 5 (2010): 505-526.
 39. Ibid.
 40. O'Neil, 2010b.
 41. Lawrence M. Sanger, "The Fate of Expertise After Wikipedia," *Episteme* 6, no. 1 (2009): 52-73.
 42. Ibid.
 43. Rik Hunter, "Erasing 'Property Lines': A Collaborative Notion of Authorship and Textual Ownership on a Fan Wiki." *Computers and Composition* 28 (2011): 40-56.
 44. Ibid.
 45. Karen Weingarten and Corey Frost, "Authoring Wikis: Rethinking Authorship through Digital Collaboration." *Radical Teacher* 90 (2011): 47-57.
 46. Mark Warschauer and Douglas Grimes, "Audience, Authorship, and Artifact: The Emergent Semiotics of Web 2.0." *Annual Review of Applied Linguistics* 27 (2007): pg. 1, 23 pgs.
 47. Ibid.
 48. Weingarten and Frost, 2011b.
 49. Williams, 2009b.
 50. Ibid.
 51. Warschauer and Grimes, 2007b.
 52. Alison J. Head, *Learning Curve: How College Students Solve Information Problems Once They Join the Workplace*. Sonoma, CA: Project Information Literacy (2012), http://projectinfolit.org/pdfs/PIL_fall2012_workplaceStudy_Full-Report.pdf : 8-14.

53. Lynn S. Connaway, Timothy J. Dickey and Marie L. Radford, "If It is Too Inconvenient I'm Not Going After It: Convenience as a Critical Factor in Information-Seeking Behaviors." *Library & Information Science Research* 33, no.3 (2011): 179-190.
54. Joanna Duy and Vincent Larivière, "Relationships Between Interlibrary Loan and Research Activity in Canada." *College & Research Libraries* (forthcoming), <http://crl.acrl.org/content/early/2012/07/23/crl12-378.full.pdf+html>
55. Head, 2012, 13.
56. Association of College and Research Libraries, "Information Literacy Competency Standards for Higher Education." (Chicago, IL: ALA, January 18, 2000). <http://ala.org/acrl/standards/informationliteracycompetency>.
57. Wikipedia, "Identifying Reliable Sources," (2013) http://en.wikipedia.org/wiki/Wikipedia:Identifying_reliable_sources
58. Andrea Beery (Cal Maritime student), in discussion with Michele Van Hoeck, February 14, 2013.

Bibliography

- Association of College and Research Libraries. "Information Literacy Competency Standards for Higher Education." ALA, January 10, 2000, <http://ala.org/acrl/standards/information-literacycompetency>.
- Badke, William, "What to do with Wikipedia?" *Online* 32, no. 2 (2008), <http://www.infotoday.com/online/mar08/Badke.shtml>.
- Belden, Dreanna, "Harnessing Social Networks to Connect with Audiences: If You Build It, Will They Come 2.0?" *Internet Reference Services Quarterly* 13, no. 1 (2008): 99-111.
- Bennington, Adam. "Dissecting the Web through Wikipedia." *American Libraries* 39, no. 7 (2008): 46-48
- Bobish, Greg. "Participation and Pedagogy: Connecting the Social Web to ACRL Learning Outcomes." *The Journal of Academic Librarianship* 37, no. 1 (2010): 54-63.
- Cohen, Noam. "A History Department Bans Citing Wikipedia as a Research Source." *The New York Times*, February 21, 2007, <http://www.nytimes.com/2007/02/21/education/21wikipedia.html>.
- Connaway, Lynn S., Timothy J. Dickey and Marie L. Radford, "If It is Too Inconvenient I'm Not Going After It: Convenience as a Critical Factor in Information-Seeking Behaviors." *Library & Information Science Research* 33, no.3 (2011): 179-190.
- Deitering, Anne-Marie and Sara Jameson, "Step by step through the scholarly conversation : A Collaborative Library/Writing Faculty Project To Embed Information Literacy And Promote Critical Thinking In First Year Composition At Oregon State University." *College and Undergraduate Libraries*, 15, no.1 (2008): 57-79.
- Duy, Joanna and Vincent Larivière. "Relationships Between Interlibrary Loan and Research Activity in Canada." *College & Research Libraries* (forthcoming), <http://crl.acrl.org/content/early/2012/07/23/crl12-378.full.pdf+html>
- Encyclopedia Britannica. "Fatally Flawed: Refuting the Recent Study on Encyclopedic Accuracy by the Journal Nature," March 2006, http://corporate.britannica.com/britannica_nature_response.pdf.
- Farkas, Meredith. "Participatory Technologies, Pedagogy 2.0 and Information Literacy." *Library Hi Tech* 30, no. 1 (2012): 82-94.
- Forte, Andrea and Amy Buckman. "Writing, Citing, and Participatory Media: Wikis as Learning Environments in the High School Classroom." *International Journal of Learning and Media* 1, no. 4 (2010): 23-43.
- Francke, Helena and Olof Sundin. "Negotiating the Role of Sources: Educators' Conceptions of Credibility in Participatory Media." *Library & Information Science Research* 34 (2012): 169-175.
- Giles, Jim. "Internet Encyclopaedias Go Head to Head." *Nature* 438, no. 7070 (2005): 900-901.
- Grathwohl, Casper. "Wikipedia Comes of Age." *Chronicle of Higher Education* 57, no. 20 (2011): B2.
- Hartelius, E. Johanna. "Wikipedia and the Emergence of Dialogic Expertise." *Southern Communication Journal* 75, no. 5 (2010): 505-526.
- Head, Alison. "How Today's College Students Use Wikipedia for Course-related Research." *First Monday* 15, no. 3 (2010), <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2830/2476>.
- Head, Alison J. *Learning Curve: How College Students Solve Information Problems Once They Join the Workplace*. Sonoma, CA: Project Information Literacy, 2012, http://projectinfolit.org/pdfs/PIL_fall2012_workplaceStudy_FullReport.pdf
- Henga, Lim T. and Rasaya, Marimuthua. "Let's Wiki in Class." *Procedia - Social and Behavioral Sciences* 67 (2012): 269 - 274.
- Hoyer, Jennifer. "Information is Social: Information Literacy in Context", *Reference Services Review* 39, no. 1 (2011): 10 - 23.
- Hunter, Rik. "Erasing 'Property Lines': A Collaborative Notion of Authorship and Textual Ownership on a Fan Wiki." *Computers and Composition* 28 (2011): 40-56.
- Jennings, Eric. "Using Wikipedia to Teach Information Literacy." *College & Undergraduate Libraries* 15, no. 4 (2008): 432.
- Keen, Andrew. *The Cult of the Amateur*. New York: Doubleday/Currency, 2007.
- Konieczny, Piotr. "Wikis and Wikipedia as a Teaching Tool"

- International Journal of Instructional Technology & Distance Learning* 4, no. 1 (2007): np
- Lally, Ann M. and Carolyn E. Dunford. "Using Wikipedia to Extend Digital Collections," *D-Lib Magazine* 13, nos. 5-6 (2007), <http://www.dlib.org/dlib/may07/lally/05lally.html>.
- Lindsey, David. "Evaluating Quality Control of Wikipedia's Feature Articles." *First Monday* 15, no. 4 (2010), <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2721/2482>.
- Luo, Lili. "Web 2.0 Integration in Information Literacy Instruction: An Overview." *The Journal of Academic Librarianship* 36, no.1, (2010): 32-40.
- O'Neil, Mathieu. "Shirky and Sanger, or the costs of crowdsourcing." *Journal of Science Communication* 9, no. 1 (2010): 1-6.
- Parker, Kevin R. and Joseph T. Chao. "Wiki as a Teaching Tool." *Interdisciplinary Journal of Knowledge and Learning Objects* 3 (2007): 57-72.
- Pfister, Damien S. "Networked Expertise in the Era of Many-to-many Communication: On Wikipedia and Invention." *Social Epistemology* 25, no. 3 (2011): 217-231.
- Pressley, Lauren and Carolyn J. McCallum. "Putting the library in Wikipedia," *Online*, 32, no. 5, (2008): 39-42. Retrieved from http://www.infoday.com/online/sep08/Pressley_McCallum.shtml
- Rector, Lucy Holman. "Comparison of *Wikipedia* and other Encyclopedias for Accuracy, Breadth, and Depth in Historical articles," *Reference Services Reviews* 36, no. 1 (2008): pp. 7-22.
- Sanger, Lawrence M. "The Fate of Expertise After Wikipedia," *Episteme* 6, no. 1 (2009): 52-73.
- Scharf, Davida. "Mythbusting: College Students as Wikipedia Editors: A Surprising New Pathway to Information Literacy," (lecture, MERLOT Conference: Teaching and Learning in a Networked World, San Jose, August 13-16, 2009), <http://library.njit.edu/library/staff/scharf/Scharf-Mythbusting-2009.ppt>
- Seelye, Katharine Q. "Snared in the Web of a Wikipedia Liar." *The New York Times* (December 4, 2005), <http://www.nytimes.com/2005/12/04/weekinreview/04seelye.html>.
- Warschauer, Mark and Douglas Grimes. "Audience, Authorship, and Artifact: The Emergent Semiotics of Web 2.0." *Annual Review of Applied Linguistics* 27 (2007): pg. 1, 23 pgs.
- Weingarten, Karen and Corey Frost. "Authoring Wikis: Rethinking Authorship through Digital Collaboration." *Radical Teacher* 90 (2011): 47-57.
- Wikimedia Foundation. "Wikipedia Education Program." (2012). Retrieved from http://outreach.wikimedia.org/wiki/Wikipedia_Education_Program
- Wikipedia. "Identifying Reliable Sources." (2013). Retrieved from http://en.wikipedia.org/wiki/Wikipedia:Identifying_reliable_sources
- Wikipedia. "School and University Projects/2003-2008 Past Projects." (2013). Retrieved from http://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/2003-2008_past_projects
- Williams, Bronwyn T. *Shimmering Literacies: Popular Culture & Reading & Writing*. New York: Peter Lang, 2009.
- Zickuhr, Kathleen and Lee Rainie. "Wikipedia, Past and Present." Pew Internet and American Life Project (2011). Retrieved from <http://www.pewinternet.org/Reports/2011/Wikipedia.aspx>.