

# WIKIPEDIA AS AN AUTHENTIC LEARNING SPACE

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## INTRODUCTION

Wikipedia is legendary as the amateur-built-and-run encyclopedia with articles on everything from Goo Goo Clusters to the Battle of Nashville. But there are many less familiar, behind-the-scenes areas of Wikipedia that make the site a promising online space for active information literacy learning. Hiding in plain sight behind every Wikipedia article is a “Talk” page, where editors discuss disagreements, assign article ratings, and organize articles into WikiProjects. Guiding the most dedicated volunteer editors, or Wikipedians, are research and writing policies that have evolved via consensus since Wikipedia’s creation in 2001. These policies are quite compatible with the ACRL Information Literacy (IL) Standards that guide instruction librarians.

This paper describes a credit-bearing information literacy course at California State University Maritime (Cal Maritime) that joined the Wikipedia United States Education Program in Spring 2012. The course culminated with a final project in which students significantly expanded a Wikipedia article as well as its sources, using the library’s online and print resources. All of the ACRL IL Standards were addressed with this assignment. More importantly, becoming Wikipedia editors meant that students developed information literacy competencies by writing for an authentic audience. Assessment data presented here suggests that writing for Wikipedia motivated some students to go deeper with their research. Pitfalls and challenges associated with using Wikipedia in the classroom do exist, however. This paper will also summarize adjustments made in a subsequent semester teaching the course.

## AUTHENTIC AUDIENCE, AUTHENTIC ASSIGNMENT

Freshmen in two majors at Cal Maritime are required to take a two-unit course called Information Fluency in the Digital World (LIB100). This course covers competencies from all stages of the research process, and includes

computing sections on introductory data analysis and graphical display of information.

Before the Spring 2012 semester, the final project for the course was an annotated bibliography and a reflective essay. The two instruction librarians teaching LIB100 believed student engagement on this final assignment could be improved upon in the Spring semester, when LIB100 is taken by Marine and Facilities Engineering Technology majors. Engineering Technology (ET) is a particularly hands-on, applied learning program at an institution whose mission statement includes applied technology as a core value. In previous semesters, Cal Maritime instruction librarians had struggled to engage ET majors in the academic research process typically practiced in more traditional academic disciplines.

Aiming to improve student engagement and learning in LIB100, we revised our syllabus and assignments for Spring 2012 to revolve around a final project that would reach a public audience and have practical value for that audience: a Wikipedia article contribution. This choice was bolstered by an article in the *Chronicle of Education* by Derek Bruff, Director of the Center for Teaching at Vanderbilt University. Dr. Bruff described the potential to motivate students when someone besides the teacher, an “authentic audience,” reads their work. He suggested that using social media like blogs and wikis to publish student work can inspire deeper learning, with students motivated by a desire to share what they know with a wider community. An authentic audience for student work is usually associated with an authentic task, something that genuinely needs doing and isn’t purely a learning exercise (Bruff, 2011).

On the Cal Maritime campus, many assignments are completed for authentic audiences: a solar charging station designed and built for campus electric vehicles; an economics debate before a national election; and of course, all the navigation and engineering tasks required to complete the annual summer cruise on the Training Ship Golden Bear. Having LIB100 students practice information literacy

competencies in the very public sphere of Wikipedia seemed like a natural fit with our institution's mission and values.

## WIKIPEDIA AND ACADEMIA

Wikipedia's role in academia has ranged from popular scourge to multi-disciplinary object of study to pedagogical tool. The nature and extent of college student use of Wikipedia has been documented in two Project Information Literacy studies. Seventy-five percent of students reported at least occasionally using Wikipedia for school assignments, with most using it at or near the beginning of the research process (Head, 2010). According 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 (Zickuhr & Rainie, 2011).

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. The author 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" (Grathwohl, 2011).

### Wikipedia Education Program

Wikipedia is run by the non-profit Wikimedia Foundation. In fall 2010, Wikimedia began a pilot program with a small number of graduate programs in public policy, offering training materials and volunteer Wikipedia ambassadors to assist faculty willing to assign Wikipedia articles to their students. The success of this program, later called the Wikipedia Education Program, led to its expansion beyond the field of public policy to faculty and courses in a variety of disciplines and four countries. From Spring 2011 to Spring 2013 in the United States alone, between 22 to 42 colleges and universities participated in the program per semester, including Cal Maritime in Spring 2012 and Spring 2013 (Wikimedia Foundation, 2013).

### Core Values

While Cal Maritime librarians chose to assign Wikipedia articles to improve student motivation and engagement, the more we learned about the site, the more we saw areas where Wikipedia's values overlap with those of academia. In previous semesters, like many instruction librarians, we had focused on Wikipedia's uncredentialed, often-anonymous authors indicating its incompatibility with academic research. But after more hands-on experience with Wikipedia, we grew to appreciate its transparency regarding editorial discussion, development of policy, organizational meta-data, and article rating systems. This transparency gives Wikipedia great potential as a platform for discussing and practicing many key information literacy concepts and competencies with undergraduates.

Wikipedia has three core content policies that guide contributors who aspire to make lasting contributions to the site ("Core Content Policies," 2013). Of the three, the most pertinent policy for information literacy instruction is called "Verifiability." This policy states that sources used to write Wikipedia articles should be cited and will ideally be 1) reliable, with a reputation for fact checking and editorial oversight; 2) written by a third-party unaffiliated with either the subject of the article or the Wikipedia contributor working on the article; and 3) published, which Wikipedia defines as information for which an archival copy exists somewhere. Further guidance is found in the guideline document "Identifying Reliable Sources" which emphasizes sources such as reputable news, monographs and textbooks, and in the case of academic subjects, peer-reviewed articles. This guideline also elaborates on the disadvantages of self-published sources, which include blogs, many company and organizational websites, and social media sites ("Identifying Reliable Sources," 2013). "Verifiability" articulates the value Wikipedia places on citation of sources that have been evaluated by a reasonable standard for quality. Students in LIB100 were assigned to read "Identifying Reliable Sources" and practiced distinguishing third party vs. self-published sources of all types early in the semester.

Anyone perusing Wikipedia at length will find many articles that do not adhere to the "Verifiability" policy, as it represents a guiding ideal rather than criteria for publication. But Wikipedia has a volunteer-based review process for recognizing articles that do adhere to its sourcing and writing guidelines. Wikipedia's amateur version of peer review relies on groups of contributors who form WikiProjects and rate encyclopedia articles in broad categories such as Energy, Ships, Marine Life, etc. The highest rating attainable is a Featured Article, which is supposed to indicate an article that is well-written and well-sourced, following accuracy, completeness, neutrality, and style policies at the highest level. Less than .1% of Wikipedia articles have currently achieved this rating ("Featured Articles," 2013). The lowest article rating is a Stub, indicating articles of just a few lines, with few or no sources. Figure 1 shows an example of a table enumerating and linking to all articles rated by the Energy WikiProject.

## WIKIPEDIA ASSIGNMENTS AT CAL MARITIME

To prepare for assigning student work on Wikipedia, two Cal Maritime instruction librarians attended training sessions hosted by the Wikipedia Education Program. During this two-day training, we learned about Wikipedia culture and code, as well as best practices for using Wikipedia in the classroom.

**Figure 1: WikiProject Energy: Article ratings table**

Energy articles by quality and importance							
Quality	Importance						Total
	Top	High	Mid	Low	NA	???	
★ FA		3	4	3			10
★ FL			1	1			2
⊕ GA	7	8	17	22			54
B	23	65	90	91		13	282
C	12	61	128	293		63	557
Start	18	191	502	2,910		312	3,933
Stub	1	26	162	3,015		1,881	5,085
List		60	53	172	4	42	331
Category		1		2	4,151		4,154
Disambig					10		10
File				1	44		45
Portal					2		2
Project	1						1
Template	1	3	7	18	166		195
NA				1	61		62
Assessed	63	418	964	6,529	4,438	2,311	14,723
Unassessed				19		2,904	2,923
<b>Total</b>	<b>63</b>	<b>418</b>	<b>964</b>	<b>6,548</b>	<b>4,438</b>	<b>5,215</b>	<b>17,646</b>

Retrieved May 31, 2013 from

[http://en.wikipedia.org/wiki/Wikipedia:WikiProject\\_Energy](http://en.wikipedia.org/wiki/Wikipedia:WikiProject_Energy)

In the Spring 2012 semester, we taught three sections of LIB100 with a total of 48 students. Students were introduced to the same search and evaluation competencies taught in previous semesters, using academic, professional, and open web resources. Via reading and discussion assignments, students learned about Wikipedia policies and critiqued a set of scholarly and popular articles on Wikipedia quality. All students created a user page and practiced coding on a personal test page, called a Sandbox. They learned about the site's architecture, including History pages, which show every previous version of every article on Wikipedia. They identified undeveloped Wikipedia articles in maritime history and engineering and made source recommendations on those articles' Talk pages. 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, some with a partner; most students in the other two sections selected pre-existing articles to enhance or revise, all working individually and adding at least 1000 words of new content. Near the end of the semester,

students submitted drafts and conducted peer review of another student's article. They created graphical slide decks reflecting on their experiences editing Wikipedia. Final article drafts (38 total) included inline citations, internal links and an APA bibliography of sources.

**Table 1: Aligning Wikipedia Assignments with ACRL Information Literacy Standards**

Editing on Wikipedia	ACRL IL Standard
Identifying articles that need development	1
Locating reliable secondary sources and news	2
Distinguishing between third-party and self-published sources; comparing Wikipedia articles to comparable articles from Oxford Encyclopedia of Maritime History	3
Synthesizing and summarizing from multiple sources	4
Documenting sources using in-line citations and consistent citation style; locating public domain and Creative Commons-licensed images	5

## ASSESSMENT

Anecdotally, compared to previous semesters teaching LIB100, instruction librarians believed they were seeing more students outside of class, inside the library during Spring 2012. Many students stopped by to discuss assignments, as well as pick up materials at the circulation desk (instruction librarians' offices at Cal Maritime are directly behind the circulation desk). Conversations with students about their Wikipedia projects reflected greater levels of both enthusiasm and frustration – in other words, more engagement.

In the best cases, students completed well-researched articles or article expansions worth bragging about. One student compared his experience developing his Wikipedia article to previous research paper experiences using a more iterative, more complex flow chart illustration. In the worst cases, students found working on the Wikipedia platform very confusing and/or intimidating, and preferred to keep their work in their Wikipedia Sandbox.

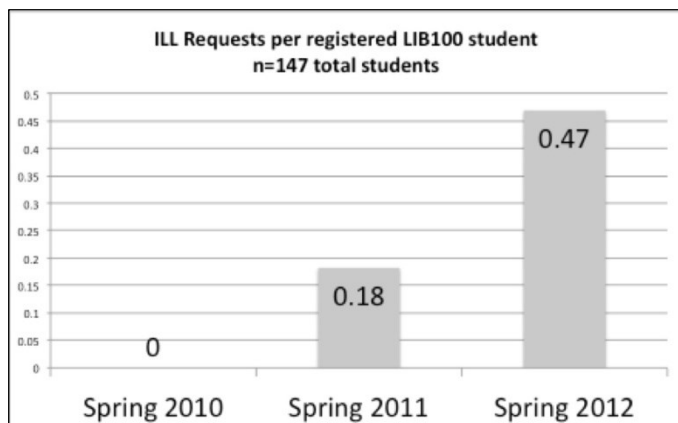
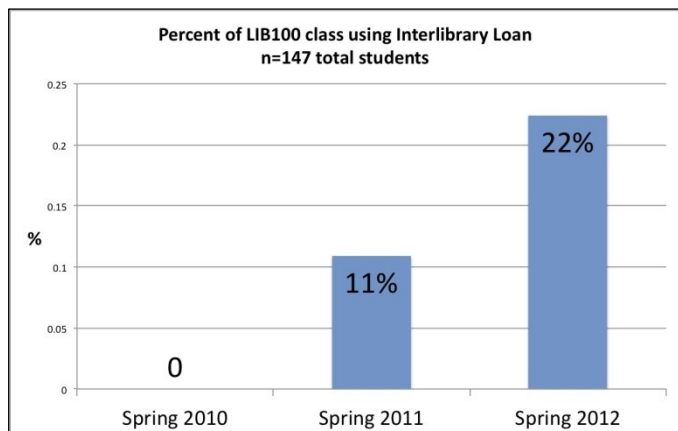
After the semester concluded, the Instruction Coordinator collected three types of data to formally assess levels of student engagement with their final assignment. Inspired by a recent qualitative study by Project Information Literacy, which found employers value persistence in solving information problems in the workplace (Head, 2012), the Instruction Coordinator gathered data that could reflect research persistence: interlibrary loan borrowing, variety of source type, and students' self-assessment via a survey.

## Interlibrary Loan Usage

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.

**Figure 2: Interlibrary loan usage data**



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. A significant increase in use of a low-convenience library service in 2012 compared to previous semesters 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.

A more detailed discussion of the rationale and limitations to using ILL data in this way was reported in an ACRL 2013 proceedings paper on this project (Van Hoeck & Hoffmann, 2013).

### Variety of Source Type

The Instruction Coordinator did a citation analysis of the 204 sources cited by students for their Wikipedia articles. 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. 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.

### Student Survey

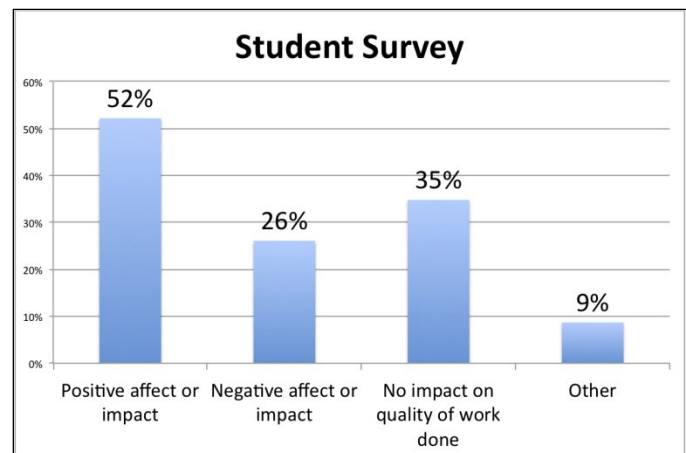
One instructor administered a two-question survey to one section (n=23) near the end of the semester to measure students' affective response to working on Wikipedia, and self-assessment of the impact of a public audience on their level of effort.

**Table 2: Student survey, Spring 2012**

*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)

**Figure 3: Student survey results, Spring 2012**



About half the students in this section reported a positive impact or attitude regarding their work on Wikipedia. Total percentages add to more than 100% because some students reported positive affect but also said their 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.

## CONCLUSION

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. The enthusiasm and quality of work by students who were positively impacted by the Wikipedia assignment inspired a second iteration of the course in Spring 2013, which benefitted from student feedback from the pilot and additional instructor experience.

The most significant adjustment pushed most Wikipedia work to the second half of the 2013 semester, with the initial two research assignments submitted privately to the instructor. The number of suggested WikiProjects, or broad topic categories, from which students could identify stub-class articles for final projects, was increased from two to thirteen. Finally, all students were given the option to author their final project with a partner, anticipating that voluntary collaboration could ameliorate frustration or discomfort with the platform.

As of this writing, student survey results from Spring 2013 were still outstanding, as survey questions were included on the official course evaluation form. But anecdotally, the student enthusiasm-to-frustration ratio was higher this semester. We intend to revisit the Wikipedia assignment in Spring 2014, as it offers a unique opportunity for students to demonstrate information literacy in a real world setting.

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