

Wikipedia as Open Educational Practice: Experiential Learning, Critical Information Literacy, and Social Justice

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Abstract

Building on previous research related to information literacy and learning with Wikipedia, this article interprets Wikipedia editing practices as fulfilling the Association of College and Research Libraries' (ACRL) *Framework for Information Literacy in Higher Education* to better understand Wikipedia pedagogy as an Open Educational Practice (OEP) that promotes critical information literacy and social justice. Drawing primarily on data from a large-scale study conducted with students and instructors engaged in Wikipedia-based assignments in the fall of 2016, the authors explore how Wikipedia-based pedagogies directly map on to knowledge practices and dispositions related to authority, information value and process, research, and scholarship as conversation, as presented in the ACRL's *Framework*. Description and analysis of these "frames," and the relevant policies and pedagogical practices engaged in Wikipedia-based assignments, ultimately underscore how viewing Wikipedia as enabling OEPs promotes social justice through improving knowledge equity, understanding and combating systemic biases, and supporting first-generation students' success.

Keywords

Wikipedia, information literacy, social justice, knowledge equity, open educational practices (OEP)

Introduction

Once considered unreliable and perhaps even harmful by college librarians and academics alike (Gorman, 2007), Wikipedia, and its reception in circles of higher education, has changed dramatically over the past two decades. Numerous studies over the years show how the encyclopedia has become both accurate and reliable (Brown, 2011; Giles, 2005; Hwang et al., 2014; Kräenbring et al., 2014; Taraborelli, 2012). Educators and information literacy professionals are increasingly engaging with the Wikipedia community in new ways, from asking students to contribute to and improve encyclopedic articles as classroom assignments, to holding community-organized editing marathons (or edit-a-thons) focused on improving a particular subject area in the encyclopedia (Ayers & Zanni, 2017; Catalani, 2017; Vetter & Harrington, 2013; Vetter et al., 2020; Vetter & Woods, 2018). Although previous debates around Wikipedia focused on its accuracy and reliability (while remaining a tertiary source that is not "authoritative" but instead representative of secondary sources), the conversations around Wikipedia and pedagogy have shifted, as recent and ongoing research into utilizing Wikipedia in the classroom suggests a variety of

benefits from learning to write and edit (and engage deeper in general) with the world's largest open knowledge repository (Cummings & DiLauro, 2017; McDowell & Vetter, 2020; Vetter et al., 2019). While scholars have attended to the needs and opportunities for critical, feminist, and/or social justice work provided by Wikipedia (Edwards, 2015; Gruwell, 2015; Xing & Vetter, 2020), surprisingly little research has centered on the intersections of Wikipedia as an Open Educational Resource (OER), Wikipedia's role in teaching and enabling critical information literacy skills as Open Educational Practices (OEPs), and how Wikipedia can be engaged as enacting social justice through OEPs.

This article builds on previous research related to information literacy and Wikipedia-based education through both a meta-analysis of previous studies and by utilizing open

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data from our previous research in new ways to better understand Wikipedia pedagogy as OEPs. We explore Wikipedia-based pedagogy by framing these practices alongside the Association of College and Research Libraries (ACRL) *Framework for Information Literacy in Higher Education*. This framing helps illustrate how such practices promote social justice through improving knowledge equity, understanding and combating systemic biases, and supporting first-generation students' success. Focusing on metaliteracy and metacognition, rather than a prescriptive model for specific information literacy recommendations, the *Framework* is descriptive of particular dispositions needed for rapidly changing literacy abilities and knowledges. Such a descriptive focus serves well as an analytic tool for pedagogy and practice. While we spend the majority of this article focusing on the *Framework* and how it can help to understand Wikipedia pedagogy, we believe that information literacy is an incredibly important aspect of centering social justice in pedagogical practices, particularly when considering how disinformation campaigns specifically targeted Black, Indigenous, and People of Color (BIPOC) groups during recent American elections (Bond, 2020). What the *Framework* helps with here is both to situate the learnings from Wikipedia as indicative of building information literacies, and to situate, alongside other findings and understandings, how working with Wikipedia can act as a way to enact social justice praxis through these pedagogical practices.

Throughout this article we build upon and reanalyze data from a large study in 2016 which provided ample evidence for the efficacy of using Wikipedia as a learning tool, particularly for learning information literacy (McDowell & Stewart, 2019). Students and instructors alike were found to value Wikipedia assignments highly for teaching and learning information literacy skills. Furthermore, the study suggested that students directly engaged concepts outlined in the ACRL *Framework*, particularly when engaging understandings of systemic biases, construction of information, and value of information.¹ Through the lens of the *Framework*, this article follows this study's lead and digs deeper into illustrating how core concepts within Wikipedia as an OER can be understood as an OEP for teaching information literacy, as well as leading further to understandings of how this OEP can also enact social justice in its practices.

Basics of Wikipedia Pedagogy

When trying to understand Wikipedia pedagogy as OEP, it is first helpful to note that there is no set way to utilize Wikipedia as a teaching tool, and even in the numerous studies regarding Wikipedia pedagogy there is no single approach, as multiple types of assignments, subject matters, and ways to implement them are addressed. This being said, there are numerous overlaps in skills and experiences that are directly connected to the space of Wikipedia in what we have referred to previously as "experiential epistemology" (McDowell & Vetter, 2020) as

learners must face specific expectations and rules that require developing certain skills to contribute to Wikipedia. With this understanding, when we discuss pedagogy and Wikipedia, we refer to the conceptual knowledges, dispositions, and skills required to make a significant contribution (such as writing an article or expanding a stub-class article).

Although not everyone will teach in the same way or cover every step, the rough scaffolding of learning to make a major contribution (often assigned as an alternative to a college research project) to Wikipedia typically aligns with the following process:²

1. *Learning to evaluate a Wikipedia article*, which includes learning the language and form of Wikipedia to understand what makes for a good article. Such evaluation will often include the identification of particular gaps in content/information, and how those gaps might be better covered or how the article should be improved, overall.
2. *Selecting an article/topic to contribute to*, which includes understanding what information is available on a topic. This step in the process requires that the student be able to contrast the information represented in the existing Wikipedia article with external secondary sources to demonstrate how the article can be improved through additional research.
3. *Researching the topic*, which requires learning proper research skills. Students need to be able to identify credible sources, as defined by the Wikipedia community, but also need to be able to show an awareness of how different sources may be better suited to improving content in Wikipedia.
4. *Annotating and summarizing the research*, which teaches comprehension and understanding of different forms of knowledge. During this step, students learn to blend and summarize multiple sources of information, and "translate" that content into a neutral and encyclopedic style.
5. *Drafting the article*, which requires understanding the topic as a conversation, as well as the expected form of Wikipedia. When drafting, students are also exposed to and practice the conventions for making connections between different Wikipedia articles ("Wikilinks") as well as specific documentation methods.
6. *Editing and responding to feedback*, which requires participating in a larger conversation and reflection on information interpretation by a general audience and understanding the form of Wikipedia. Wikipedia assignments often require that students leave a message on the article's "Talk page" to inform others in the Wikipedia community of the changes they have made. Assignments may also include a form of peer review (either within the classroom community or beyond it) to help the student-writer gain perspective on their contributions and how they might be improved.³

Any instructor who has taught some sort of research or writing assignment should be familiar with these basic steps. However, as one student mentions when asked about their motivations, this assignment departs from the typical essay in a few important ways:

I guess the fact that it's not only being read by my professor. It's going to be something that's published on a public forum. So there was some pressure but it's been motivating me to do a better job because I know I use WP a lot and it's a very helpful source. (McDowell, 2017)

Both the public aspect and the expectations laid out by numerous policies on Wikipedia create a space where students are both encouraged to excel at their assignment and discouraged to make a perfunctory effort. This motivation sets up these learnings as *necessary* to undergo rather than composing something that resembles, as another student describes a typical essay assignment, “throwing information into the void” (McDowell, 2017). This scaffolding, bolstered by the public and community aspects of Wikipedia, is key to linking the learnings garnered from Wikipedia with the *Framework*.

Wikipedia Pedagogy and the Framework

The ACRL formally adopted the *Framework for Information Literacy for Higher Education* in 2016. Described as a “cluster of interconnected core concepts,” the framework is meant to be understood and applied flexibly for teaching information literacy (Framework for Information Literacy for Higher Education, 2015, p. 7). Implementation of these concepts couldn't be more timely, as 2016 (as well as the years following) demonstrated a dramatic uptick in “problematic information” (Jack, 2017) related to fake news, misinformation, and other problems of authenticity and deceit, especially in digital media. Organized around six central frames, the *Framework* “draws significantly upon the concept of metaliteracy, which offers a renewed vision of information literacy as an overarching set of abilities in which students are consumers and creators of information who can participate successfully in collaborative spaces” (p. 8). Furthermore, the *Framework* also forwards an expanded definition of information literacy emphasizing “dynamism, flexibility, individual growth, and community learning” (p. 8).

Rather than offering a prescriptive definition of information literacy, the *Framework* views information literacy as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (p. 8). This definition of information literacy reaches beyond simply evaluating information in regard to misinformation or disinformation, and instead, emphasizes valuing information and understanding it in

context, in conversation, and as important skill sets that are foundational to learning. This understanding of information literacy is then activated in particular “knowledge practices” and “dispositions” associated with each of the six frames. Knowledge practices are “demonstrations of ways in which learners can increase their understanding of these information literacy concepts,” while dispositions “describe ways in which to address the affective, attitudinal, or valuing dimension of learning” (p. 8). The six frames of the *Information Literacy Framework* are as follows: Authority Is Constructed and Contextual; Information Creation as a Process; Information Has Value; Research as Inquiry; Scholarship as Conversation; Searching as Strategic Exploration. Through each of these frames we consider how OEPs related to Wikipedia-based teaching can be understood in terms of both the knowledge practices and dispositions, which together culminate in the acquisition of this expanded definition of information literacy.

Authority Is Constructed and Contextual

The frame “Authority is Constructed and Contextual” recognizes the situated nature of authority, and thus credibility, based on the particular context of both the creator of a piece of information and the particular ways that information is both needed and used. This frame links to numerous aspects of the Wikipedia assignment, beginning with evaluating a Wikipedia article, as this exercise begins the learners' understanding of how the encyclopedia functions. The manner in which Wikipedia is constructed, particularly around its policies of reliability and verifiability, not only acknowledges the first frame in the *Framework*, but it actively instills these learnings in those who learn to understand and edit Wikipedia. Part of this is due to the fact that learners must develop extensive research skills to “use research tools and indicators of authority to determine the credibility of sources” as well as “understanding the elements that might temper this credibility” (p. 12), but it goes beyond just learning information sourcing.

Students encountering Wikipedia in an academic context for the first time are often skeptical of the encyclopedia's credibility, given the many narratives they have heard regarding its crowd-sourced, “anything goes” model. Those of us researching Wikipedia-based education are fascinated, accordingly, by the dramatic shift in attitude that students express *after* working on a Wikipedia-based assignment. McDowell and Stewart (2019) found that, when examining student perceptions of learning outcomes before and after a Wikipedia-based assignment, “the most significant shift is in the increased reliability students placed on Wikipedia after having edited” (n.p.). However, this alone is not indicative of information literacy, as simply an attitudinal shift from Wikipedia is “unreliable” to Wikipedia is “reliable” only indicates categorical trust, it is when learners move beyond this to “trust but verify” (a

paraphrasing of numerous responses from the study data as well as anecdotal evidence from teaching) where one can see the overlap with the *Framework* take place. Beginning with learning to evaluate, and then reiterated during the drafting and editing processes, learners come to realize how difficult (and by extension, rigorous) contributing to the encyclopedia actually is, and learn to identify the construction outside of their own work. Student responses during this study further demonstrate the process of learning as students begin to understand how information and authority are constructed in the Wikipedia community:

I didn't know anything about what happened behind the curtains of Wikipedia . . . I didn't know, again, there's a huge discussion, it gets reviewed by your peers, other people, Wikipedia, and everyone else. I thought it was you click on edit and you just say whatever you want and somehow you submit it and that was it. I think it to be more credible now knowing how much work goes behind it and it's not just simple as cut and paste from different links so I find it more credible now than I did before. I see myself defending Wikipedia now, I guess.

This parallels Vetter's findings in a smaller study related to students' motivations and perceptions of authority in the Wikipedia-based writing project. Vetter argues that Wikipedia OEPs provide students an opportunity to understand their own authority as writers by working on a Wikipedia article edit. As one student-participant voiced,

I held the authority, even with an online ambassador helping me and [offering] guidelines to follow. It is all my decision on what the page would consist of and how professional it would be. I cared about the assignment, so I wanted to make sure that everything looks as good as possible for readers and for [the] general public. (Vetter, 2014)

Connecting these data to the *Framework*, student reflections demonstrate how "learners come to respect the expertise that authority represents while remaining skeptical of the systems that have elevated that authority and the information created by it" (p. 12). Students recognize the complex system of authority that scaffolds Wikipedia and how to interact with it, which instills in them the understanding of the interplay of authority and the context of that authority within given information systems.

Finally, as noted in the above quote, learners must also develop their "own authoritative voices in a particular area and recognize the responsibilities this entails." As students learn to seek out "accuracy and reliability, respecting intellectual property, and participating in communities of practice" (*Framework*, p. 13), they also make gains in terms of self-efficacy and agency, which helps to ensure success throughout their careers (more on that later). It is important to note here that students (and indeed any novice Wikipedia editor) have and may come into contact with types of gatekeeping or even overt harassment when attempting to assume

authority and edit in Wikipedia, and women and BIPOC have particularly been subjected to gatekeeping and harassment ("Harassment Survey" [Wikimedia Foundation Support & Safety Team, 2015]). While the Wikimedia Foundation continues to work on the encyclopedia's climate, and has recently adopted a code of conduct to address these specific issues, "Universal Code of Conduct" (Universal Code of Conduct/Project—Meta, 2021), both students and teachers should be aware of the potential for being met with gatekeeping or hostility by other editors, as they would when contributing to any open digital platform.⁴

Information Creation as a Process

The frame "Information Creation as a Process" speaks directly of how Wikipedia articles are assembled. ACRL understands this frame as the ways that "iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences," and suggests that the "dynamic nature of information creation and dissemination requires ongoing attention to understand evolving creation processes" (p. 14). Learners face this throughout the Wikipedia assignment, but particularly in the drafting and editing phases, as editing and writing Wikipedia is iterative in its nature, rather than written in one fell swoop. Furthermore, learners must understand how information comes together and constantly edit and revise, moving sentences and reorganizing article structures to improve pages. Carra Leah Hood, writing about a Wikipedia-based assignment from the perspective of composition pedagogy, recognizes how information creation is a process by describing textual production in Wikipedia and other digital writing environments as an "inversion of writing objectives": "texts forever in process instead of in progress toward a final, complete version—relocation of the space in which process occurs—public instead of private space—and deflation of the cultural value assigned to the final product" (2007, n.p.).

This understanding is further reflected in students' responses to working through a Wikipedia-based writing assignment. While this particular respondent uses the term "knowledge" rather than information, they recognize the iterative and developmental flow of information in Wikipedia in a fairly sophisticated interpretation:

Wikipedia is forever changing the way we see knowledge and how it is distributed in the twenty-first century. It allows us to see the dynamic process that is writing, and demystifies the processes behind the writing. Before Wikipedia we were never able to see the whole process from start to finish. We were only able to see the finished product, the ink on the pages that had been printed only after several edits and revisions . . . Now, with Wikipedia we can look back to an article's poor first draft all the way to its much more robust and meaty current state. (Vetter, 2013)

The ACRL frame for "Information Creation as a Process" demonstrates how "experts [should] look to the underlying

processes of creation as well as the final product to critically evaluate the usefulness of the information” as well as how novices can “begin to recognize the significance of the creation process, leading them to increasingly sophisticated choices when matching information products with their information needs” (p. 14). Because learners are actively constructing information within a specific norm-governed community, the Wikipedia-based assignment provides opportunities to understand both (1) how an assessment of information should look toward process and product and (2) how their processes contribute to the overall legitimacy of the information at hand.

Information Has Value

The third frame in the *Framework* speaks of the value of information, and Wikipedia is a perfect space for teaching about information value beyond transactional economics. While Wikipedia is the *free* encyclopedia anyone can edit, the *free* part of Wikipedia relates to its ability to be accessed and edited. The *Framework* describes that “information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world” (p. 16), which lines up directly with numerous aspects of teaching Wikipedia. This is part and parcel of what Wikipedia *is* and is reflected throughout learners’ experiences with exploring and editing Wikipedia. Students understand Wikipedia not only as means of education as they are introduced to utilizing Wikipedia’s information carefully and responsibly, but also learn both influence and how to understand it through grappling with Neutral Point of View (NPOV), as well as understanding the world through its representations.

Wikipedia’s strict definition and enforcement of NPOV or Neutrality policy may seem at odds with contemporary notions of social justice, and has indeed been criticized as prohibiting subjective and/or embodied ways of writing and knowing (indeed, this is also the limitation of the encyclopedic style) (Gruwell, 2015; Menking & Rosenberg, 2021). While we are sympathetic to this concern, we ultimately realize that this is the double-edged sword of the encyclopedic nature of Wikipedia. Without NPOV, Wikipedia would be awash with enormous amounts of misinformation, conspiracy theories, self-advocacy, and marketing. Neutrality in Wikipedia does not equate to some false notion of objectivity, but rather maintains that edits to articles are written in such a way as to fairly represent what has been written on a particular topic in secondary sources (whether the sources cover things properly is unfortunately part of a larger systemic problem, which we find to be an excellent teaching moment for students, particularly for those concerned with representation). Learning to work within this particular constraint and bringing more subjective and embodied viewpoints into other spaces in the encyclopedia (such as userspace and talk pages), can also provide students with

important opportunities to exercise a range of communication practices in the encyclopedia.

Students also learn about copyright and intellectual property by exploring plagiarism and how the Creative Commons licenses operate while writing and contributing to Wikipedia. The *Framework* is particularly applicable when it mentions that “experts understand that value may be wielded by powerful interests in ways that marginalize certain voices” (p. 16), as Wikipedia learners often come into direct conflict with systemic biases and learn how information representations have created knowledge gaps that need addressing. As one student explains,

It’s not random, the information that’s missing from Wikipedia. It’s a history of the knowledge of the events that have been documented and historicized in the world, and that’s what’s on Wikipedia right now. I feel like there’s a process of trying to diversify that information. (McDowell & Stewart, 2019)

Unsurprisingly, the *Framework*’s “Knowledge Practices” for this frame reads as a list for what to expect Wikipedia learners to absorb through their process. In particular, the first five are incredibly apt:

1. Give credit to the original ideas of others through proper attribution and citation;
2. Understand that intellectual property is a legal and social construct that varies by culture;
3. Articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain;
4. Understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information;
5. Recognize issues of access or lack of access to information sources (p. 16).

From crediting each source, to understanding how copyright functions, to grappling with a lack of reliable sources for a given topic, the Wikipedia assignment often requires learners to grapple with each aspect of these practices that underscore “Information has value.”

Research as Inquiry

The *Framework*’s fourth frame, “Research as Inquiry,” emphasizes research dispositions such as criticality and open-mindedness to multiple perspectives. Knowledge practices described within this frame include the ability to synthesize and organize information from multiple sources, and to “monitor gathered information and assess for gaps or weaknesses” (p. 18). As with many other frames, these learnings are embedded throughout the Wikipedia assignment, but in particular during the research and article selection phase,

as learners grapple with appropriate ways to find all aspects of a given topic. As an online tertiary reference (encyclopedia), writing in Wikipedia provides students with opportunities to both assess the state of an article (to discover gaps in coverage and plan their own contribution) and to search for, evaluate, synthesize, and organize multiple sources to contribute new information to the article. Students working through this complex process become especially aware of how sources are compiled and synthesized to create new information (because they themselves have recently gone through the process). One description of the awareness that information is constructed from other sources is voiced by a student in a focus group as follows:

It makes me more aware of articles or something, whatever I'm reading or am exposed to, their sources. It makes me, taking things with a grain of salt more, because then if something I write can be read and seen by a lot of people, then probably someone has done that too, to whatever I'm reading. (McDowell & Stewart, 2019)

When asked more specifically, "How useful was your assignment for developing certain skills?," McDowell's (2017) student focus group participants were also quick to identify research skills:

Definitely research skills. As difficult as it was to cite primary sources it also was really helpful to be able to know how to navigate them as well as find secondary sources to back them up which could be helpful for other things in the future now that I feel like I have access to the archives I feel like I could potentially use it for other projects. That's an important skill that I think that I got from it. (McDowell, 2017)

Wikipedia writing assignments help students understand the different roles that primary and secondary sources can serve in encyclopedic writing. Such "strategic perspectives on inquiry" also aid students by providing them with a "greater repertoire of investigative methods" (*Framework*, p. 18) to be used on future projects, as this student notes.

Furthermore, because the encyclopedia strives for a NPV, students not only synthesize multiple sources, they also practice representing a diversity of perspectives without placing too much emphasis on any one source or viewpoint:

I feel like, because everything had to have a citation, I ended up doing more research into the topic. Obviously, it's a synthesis, but in a lot of ways, it was like a very incredibly sophisticated book report, which is different, because you're not arguing for any one specific stance. Your obligation is to think of yourself as an encyclopedia, rather than as an individual. I think I said it to [the other student] when I was reading her article: because this is so public, your job isn't to convince somebody that your position is right or wrong. Your job is to state scientifically and sociologically backed up fact that may prove one viewpoint or disprove another viewpoint, but it's backed up by something. (McDowell, 2017)

As becomes evident, Wikipedia-based assignments can provide opportunities for practicing an open yet critical stance while also "seek[ing] multiple perspectives during information gathering and assessment" (*Framework*, p. 19). Finally, the Wikipedia assignment demands that students "follow ethical and legal guidelines in gathering and using information" (p. 19) as Wikipedia content is copyrighted under a Creative Commons license and all content must be effectively summarized and documented to avoid both plagiarism and copyright infringement.

Scholarship as Conversation

As a tertiary source where nearly every statement is sourced, Wikipedia illustrates how scholarship, and indeed knowledge in general, is a conversation. Learners experience this firsthand when introduced to evaluating a Wikipedia article as Wikipedia is constructed through secondary sources and each source must be cited. Any preconceived notions of information as monolithic or unconnected are quickly dispensed with when learning how to edit Wikipedia as different pieces of information must be blended to effectively cover the topic. Furthermore, Wikipedia's NPOV policy helps instill and understand how to represent that "while some topics have established answers through this process, a query may not have a single uncontested answer" (*Framework*, p. 20), as policy dictates representation of the knowledge that is out there, not a myopic look at the topic.

Learners must contend with changing and differing opinions in the knowledge landscape, recognizing that "communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations," and are "inclined to seek out many perspectives, not merely the ones with which they are familiar" (*Framework*, p. 20). Information representation on Wikipedia requires learners to understand not only that there is a conversation, but that there are often many conversations, and that properly representing them requires understanding of the conversations as well as how to represent them without "undue weight," the aspect of NPOV which requests that information be represented on Wikipedia according to its secondary coverage, and not overrepresent fringe or isolated views.

While this framework is particularly important for those who are exploring new research and inquiry while entering into a conversation, the authorship of a Wikipedia article is not "simply" the digestion and summarization of that conversation, but also includes participation in conversations about the topic and how it should be covered. Learners both witness and are invited to participate in "scholarship as conversation" on an article's "Talk" page where editors discuss source credibility, writing clarity, article organization, and inclusion of information (Dowell & Bridges, 2019). In essence, learners must be fluent enough in the "conversation" of the topic to understand what should exist within the article, as well as be

able to participate in the “meta-conversation” about the article itself on the talk page.

Searching as Strategic Exploration

The final frame maps well to Wikipedia in regard to information representation, as learners must understand strategic exploration to edit Wikipedia articles. The *Framework* recognizes that “searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops” while also acknowledging how “searching identifies both possible relevant sources as well as the means to access those sources” (p. 22). This points directly to the necessary mode of inquiry when editing Wikipedia. Learners embarking on researching their contribution must evaluate different sources, pursue different avenues and areas of searching, and develop critical evaluation skills to understand, interpret, and summarize these sources in their authorship. This is where college students are often introduced to library database systems and experience firsthand how their access to information is privileged and often firewalled, which in turn teaches them how to find alternative sources to link in their citations. Students learn to “manage searching processes and results effectively” as well as “use different types of searching language” (p. 22) to seek out proper sources. Furthermore, students also “understand that first attempts at searching do not always produce adequate results” and “persist in the face of search challenges” while “seek[ing] guidance from experts, such as librarians, researchers, and professionals” (p. 23).

Through this exploration of these frames we see that learning to contribute to Wikipedia offers an incredibly effective way to build the necessary skills to enable what the *Framework* calls “the reflective discovery of information” as learners explore the production of information and participate “ethically in communities of learning” (p. 8). While Wikipedia can be exceptionally helpful in this manner, it is definitely not an all-encompassing magic bullet, as it does not teach primary research skills or argumentation (although it can teach how to identify one). The *Framework* offers ways to evaluate what learning with Wikipedia can offer, but it also illustrates that the information landscape and the skills required to navigate it are vast and immense. Wikipedia relies on utilizing secondary sources, which can be limiting to learners—the frames “Research as Inquiry” and “Information Creation as a Process” for example, highlight that there are deeper lessons to be had through conducting original research so as to understand the processes of scientific and journalistic inquiries. What Wikipedia does offer is a way to think beyond normative exercises in research and writing, and instead offer understanding and participation in a larger, more interconnected knowledge system that has immediate impact on the learner, as well as the rest of the world. Furthermore, and maybe most importantly, what

Wikipedia offers to learners is the ability to diversify the world’s information landscape and to participate in a project with historic and immense possibility.

Wikipedia Pedagogy as Social Justice

Teaching information literacy in the context of Wikipedia promotes “participating ethically in communities of learning” and already actively works toward social justice in multiple ways. On a basic level, the skills that learners gain are crucial to educational success as well as foundational to critical engagement in social, political, and economic issues. Minority groups have been targeted in increased frequency by misinformation campaigns (Bond, 2020), and engaging learners from these communities can directly combat these issues. Wikipedia can also engage broader social justice issues by empowering students as critical producers of knowledge, a key component in building an engaged citizenry. Beyond these information literacy and knowledge production skills, however, Wikipedia pedagogy has more direct impacts on social justice, both for the students and for the encyclopedia itself. Not only can teaching with Wikipedia benefit at-risk students by helping them gain a sense of self-efficacy, but these very same students also help Wikipedia to improve and diversify its content, which in turn benefits the billions of readers of Wikipedia.

First-generation students (defined here as undergraduate students whose parents do not have a bachelor’s degree) comprise the largest percentage (59% in 2015–2016) of students enrolling in colleges and universities in America, and also are at a significantly higher risk (56% vs. 40% of continuing education students) of not completing a degree within 6 years (“First Year Experience” [RTI International, 2019]). First-generation students are often left confused and overwhelmed in the complex collegiate systems, dealing with juggling numerous factors with little familial support. Among many institutional factors, self-efficacy remains a significant factor for degree completion and student retention (Thomas, 2014). Self-efficacy has been shown to have a significant impact on student identity (Stets et al., 2017; Williams et al., 2018) and Wikipedia offers a learning experience that supports students’ intrinsic needs of feeling competent, having autonomy, and feeling related to the scholarly community (Ryan & Deci, 2016, 2017). Wikipedia-based projects provide opportunities for public engagement with an authentic audience, which is far more motivating and engaging for students than traditional assignments (Cummings, 2009; Dowell & Bridges, 2019; Kill, 2012; Kuhne & Creel, 2012; McDowell & Stewart, 2019; Patch, 2010; Roth et al., 2013; Sweeney, 2012; Tardy, 2010; Vetter, 2014; Vetter et al., 2019). These exercises have been shown to suggest encouragement and motivation to students (particularly first-generation and underrepresented groups) as students can participate in their own learning process and find motivation and satisfaction—partially due the immediate impact on Wikipedia (Dowell & Bridges, 2019;

McDowell & Stewart, 2019; Vetter et al., 2019), all of which contribute to establishing a scholarly and scientific identity (Skinner et al., 2017).

Beyond student success, Wikipedia pedagogy as an OEP also serves to tackle issues of diversity and inclusion in the Wikipedia community itself. As has been well-documented over the past decade, the current demographic of Wikipedia editors is problematically homogeneous, with White, English-speaking, male users making up the majority of contributors (Ford & Wajcman, 2017; Hill & Shaw, 2013; Konieczny & Klein, 2018). While higher education demographics vary depending on institution, program, and geographical area, including Wikipedia-based assignments and asking students to register an account immediately diversifies the encyclopedia because most institutions of higher education are already dramatically more diverse than the current editor base for English Wikipedia. Accordingly, building Wikipedia writing assignments into college-level instruction provides an effective and rapid antidote to Wikipedia's lack of diversity in terms of race, gender, class, age, and other social markers.

However, inviting college students into the Wikipedia community does more than just diversify the editorial ranks of the encyclopedia. These students also serve the broader purpose of improving the diversity of information Wikipedia actually covers. Because editors also bring their own motivations and interests to Wikipedia editing, a diverse editorship also means that new editors representing differences in terms of specific social, cultural, and ethnic identities will leverage their own interests into editing activity. A Wikipedia-based education allows for a more diverse editorship that actively acknowledges and fills the encyclopedia's knowledge gaps. While we do not know as much about student-editors' involvement in the encyclopedia after their course assignment ends, we do know that a significant portion of instructors adopting the Wikipedia-based assignment do so to address issues of social justice and/or equity, and even short-term editors (particularly thousands of them) can vastly improve the diversity of knowledge representation (Xing & Vetter, 2020).

As with many things in the classroom, these learnings have potential for social equity impacts outside of the classroom as well. Not only is Wikipedia the largest OER, which makes accessibility to its knowledge vastly more equitable than many other repositories of knowledge, but Wikipedia as an OEP has ramifications beyond the classroom, to all "learners" of Wikipedia. Despite its high learning curve and gate-keeping concerns, the potential for Wikipedia to help instill critical information literacy skills in the larger public remains largely untapped. Wikipedia is not only the largest repository of knowledge, but it is also one of the most accessed repositories, making it a prime space to invite learners of all ages to discover and explore its innerworkings. Disinformation threatens the very fabric of society, from outright lies and mistruths in politics, to health and wellness, to breaking down friendships and families with conspiracy theory and

fear mongering, and much more. Information literacy has always been a critical life skill, but now more than ever it is apparent that it remains key to a vibrant and healthy democracy, a healthy populace, and an engaged citizenry. With Wikipedia there is an opportunity for a double-edged attack on injustice—both engaging and informing literacy and improving representation, with both of them improving the participants' skills as well as their agency (both in participation and representation).

Understanding how and why to engage Wikipedia allows us to build pedagogies with social justice at their core for all types of learners: from engaging learners in the knowledges and dispositions of the *Framework*, to motivating learners to find their voice, to actively combating systemic biases and knowledge gaps on the world's largest repository of knowledge. Like the *Framework*, we offer mostly description rather than prescription here to illuminate the connections between understanding Wikipedia as "just" an OER and engaging Wikipedia in pedagogical practice to enact social justice both for information literacy skills and motivation, and to improve knowledge equity for everyone.

Limitations and Future Research

This research is both limited by scope in that it is particularly focused on utilizing the *Framework* to analyze experiential learning on Wikipedia and it is limited by its utilization of focus group data that were collected without the *Framework* in mind. We hope future research in this area might seek to develop quasi-experimental testing in regard to teaching with Wikipedia and information literacy, as well as examine more directly how the enactment of social justice aspects in Wikipedia pedagogy can act as a motivator both for instructors and (and especially for) students. We have plans for both of these areas of inquiry, and hope that others will join the conversation.

Unlike proprietary and closed systems such as Facebook and YouTube (and indeed much of the web), Wikipedia operates from a participatory ethic that has resisted the prevailing logic of surveillance capitalism. It has an ambitious mission, and although its community is motivated by a diverse set of values, many of these motivators may not overlap with those who often contribute to more commercial UGC platforms. This being said, one of the major themes that pervade the qualitative data in regard to learning with Wikipedia is that students found the transparency of Wikipedia (once they were instructed and trained how to grok it) to be incredibly helpful in understanding how it functions, and how they experience many of the themes of the *Framework*. The transparency that Wikipedia provides remains in stark contrast to how the majority of UGC platforms function, particularly the ones so often associated with spreading misinformation and disinformation. If the transparency of Wikipedia is key to garnering information literacy skills (and evidence suggests it is), we believe this suggests that the lack of transparency

on UGC platforms might be one of the factors that begs further inquiry in regard to information literacy, misinformation, and social justice.

Conclusion

In conclusion, we would offer the following to those interested in Wikipedia as an educational and functional space for social justice—for investigators, students, and educators of all types: (1) much like any new place, learning to navigate and Wikipedia is best done with someone who can help guide you. Newbies, find a mentor. Mentors, find newbies. Cushioning the strangeness, overwhelming rules and skills, and the potential terseness of engaging on the internet requires compassion and care;⁵ (2) channel passion and find spaces to engage with that match interests. Representation on Wikipedia is lacking in numerous ways, so there are many places to help improve articles on marginalized people and subjects; and (3) practice forgiveness with yourself (as you are learning) and others (as they are too), and realize you are not in this alone (there are hundreds of thousands of Wikipedians with all sorts of interests). Together, we can utilize Wikipedia to engage, learn, and promote these broad issues of social justice. One edit at a time.

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Notes

1. These data were published openly but the cited study only tangentially connected to the ACRL *Framework*. The current article represents a significant expansion on this connection, as well as forwarding contemporary concerns around pedagogy and social justice. We utilize a meta-analysis of both this focus group data and data from other studies to better understand Wikipedia education as an OEP utilizing the Framework. See Zachary J. McDowell, Fall 2016 Student Learning Outcomes data release. 14 June 2017. Distributed by Wiki Education Foundation. <https://github.com/WikiEducationFoundation/research>
2. This scaffolding is based upon the 20 years combined experience of the authors teaching with Wikipedia as well as from numerous studies; it also closely mirrors one of the assignment examples recommended by the Wiki Education Foundation, a nonprofit dedicated to assisting instructors to teach with Wikipedia. More information at www.wikiedu.org

3. Note that although typically assignments must “come to an end” and students must come to a space where the article is “done” for the class, we do not include this as a step as students learn that Wikipedia articles are never finished, but rather are always open to editing and improvement.
4. Much like any introduction to a community, it is exceptionally helpful to have guidance from persons experienced in that community. As we also cover in the conclusion, this is very helpful as there are norms, rules, and systems that many are not aware of in any community, especially online ones. We have worked with numerous such people over the past decade and highly recommend the expertise from the Wiki Education foundation for new learners, as they provide scaffolding, training, and feedback for instructors as well as students.
5. See footnotes above in regard to both scaffolding and guidance. The Wiki Education Foundation is an excellent resource for those who require guidance and mentorship in this area, and much of our work in this area has been made possible both directly and indirectly because of their work.

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