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Analyzing Information Sources Through the Lens of the ACRL Framework: A Case Study of Wikipedia
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Abstract

Might the ACRL Framework for Information Literacy for Higher Education be used to analyze information resources? Would a Framework-focused analysis of one commonly used resource, Wikipedia, yield valuable insights for the teaching and learning of key information literacy concepts? Each of the six frames is explored in the light of Wikipedia, and metaliteracy, a founding principle of the Framework, is introduced when it provides additional scaffolding in connection with the goals of a particular frame as a way to enhance student learning opportunities. There are a number of components in Wikipedia that align with the Framework, many of which are associated with its structure and community of editors. The idea of connecting information sources with the Framework is being offered as a conversation starter and as a potential mechanism for thinking of the Framework more broadly.

Keywords: ACRL Framework, Wikipedia, Metaliteracy, 2019 International Conference on Information Literacy

Perspectives edited by Stewart Brower

Analyzing Information Sources Through the Lens of the 
**ACRL Framework: A Case Study of Wikipedia**

The Association of College and Research Libraries (ACRL, 2015) *Framework for Information Literacy for Higher Education* was written with learners in mind: people who strive to be information literate. The *Framework*, using six conceptual lenses, indicates how novices and experts tend to think and engage with these identified concepts. Its knowledge practices and dispositions provide a guide to how one might advance from novice to expert by crossing a threshold of understanding. Clearly, the *Framework* was written to apply to people. Each section of the knowledge practices and dispositions within the frames begins, “Learners who are developing their information literacy abilities” (ACRL, 2015).

But what if the object of scrutiny was changed from a person to a particular source or type of information source? Would it be possible to analyze information resources, either by category or individually, to determine their contribution to and engagement with the goals of the *Framework*, rather than using the *Framework* solely as a roadmap for individuals? Is it possible for resources to embody elements of the *Framework*, and is it valuable to scrutinize them in this light?

Different types of sources naturally provide different elements for analysis. The *Framework* leans toward academic settings, as it was written to engage instructors (including librarians) and administrators with information literacy at institutions of higher learning. While this is the case, the six frames also provide an entry point into information resources that extend beyond academia. Indeed, the goal behind the development of the framework was to encourage a mindset and behaviors that would enable learners to consider these concepts in a range of situations, both curricular and co-curricular (Jacobson & Gibson, 2015). So, might it be interesting to explore not only a resource rather than a person but also one that is viewed as non-academic?

Would a *Framework*-focused close analysis of one commonly-used resource, *Wikipedia*, with its structure and community norms, yield valuable insights for the teaching and learning of key information literacy concepts? And would this extension of the *Framework’s* scope provide clarity into the utility of this ubiquitous but often denigrated source? Would such an analysis of other types of sources yield any benefit? It is clear that *Wikipedia* is not a
typical encyclopedia because of its genesis and the community of individuals who continue to write and add content, yet Wikipedia provides a case study of how a shift in the application of the Framework might prove fruitful.

**Wikipedia in Academia**

There are decidedly mixed opinions about the appropriateness of Wikipedia use in academic settings. Aibar et al.’s study (2015) of faculty members at two large Spanish public universities found that most felt the quality of the articles is “relatively respectable” (p. 675), though not comprehensive; however, they did not use it for teaching purposes. Many professors tell students not to use Wikipedia, although they themselves might refer to it (Konieczny, 2016). They do not trust its accuracy, which stems in part from their lack of understanding about how its articles are written and edited (Bayliss, 2013; Konieczny, 2016), nor are they assured of students’ ability to separate the wheat from the chaff when using it and other online sources. It also does not provide “the complex arguments with which many of us would like our students to grapple” (Patch, 2010, p. 279). Some also dismiss non-academic, anonymous work created collaboratively (Bayliss, 2013; Knight & Pryke, 2012; Konieczny, 2014). Regardless of the debate about the accuracy of Wikipedia, as an encyclopedia, it is a type of information source that professors have long steered their students away from, except for finding background information.

However, some professional academic associations now endorse teaching with Wikipedia. The executive director of the American Psychological Association suggested in 2010 that students and scholars use their combined knowledge to improve Wikipedia (Breckler, 2010). The following year, the president of the American Sociological Association “launched an initiative to encourage sociologists to teach with Wikipedia” (Konieczny, 2014, p. 81). There is now a growing body of literature about the use of Wikipedia in the classroom. Teaching students to edit Wikipedia has been found to enhance information/digital literacy abilities, critical thinking, and motivation, and help to build confidence (Ball, 2019; Evenstein Sigalov & Nachmias, 2017; Konieczny, 2014). The Wiki Education program, currently available in the United States and Canada, has provided support to classes through technology, learning tools, and personal assistance. Overviews of a wide range of academic applications and benefits may be found on the Wiki Education blog (https://wikiedu.org/blog/).
For their part, students do use the resource, though repeated instructor warnings have the effect of tempering students' behavior. Students themselves express concern about it, indicating that it is best used in the early stages of research. They admit to using references within Wikipedia articles, getting background information, or using it to read about a topic in language that is comprehensible to them (Head & Eisenberg, 2010; Selwyn & Gorard, 2016). Many do not fully trust it, though editing within Wikipedia can change such perceptions (Evenstein Sigalov & Nachmias, 2017).

The Structure of Wikipedia

Wikipedia describes itself as “the free encyclopedia that anyone can edit” (Wikipedia Main Page, 2019). But when comparing the infrastructure of a typical encyclopedia, online or in print, to that of Wikipedia, the more traditional one pales in comparison. Wikipedia is not merely the content it includes but the entire community of editors and the structure it is built upon.

New editors are encouraged: “People of all ages, cultures and backgrounds can add or edit article prose, references, images and other media here. What is contributed is more important than the expertise or qualifications of the contributor” (Wikipedia: About, 2019). While it is recommended that new editors register by creating a Wikipedia account, even this is not required. Normally, there is no review process for new editors, but editors may be blocked for acting against the project and community policies (Wikipedia: Blocking Policy, 2019). There are numerous avenues for learning how to create content and edit in Wikipedia, including one-on-one help for novice editors in the Teahouse.

Wikipedia editors have been characterized as a closed and unwelcoming society, making it difficult for new editors to have their work accepted (Doyle, 2018; Jacobs, 2109). Through a review of the literature, Shane-Simpson and Gillespie-Lynch (2017) categorized the reasons for the gender gap into five areas: the contentious nature of Wikipedia, the inclination of women to discuss more and edit content less, the harassment that some women have felt in the community, the way women perceive and interact with other editors, and gender issues in quantity of leisure time available. There is a growing awareness of gender-gap issues within the editor community, as reflected by themes and discussions at recent Wikimania and Wiki North America conferences (Harrison, 2019). It has been recognized that it is important for female editors to be a part of the community and for users to find content that
is of interest to women reflected in the published articles. Ford and Wajcman (2017) explored the varied theories and sources of gender disparity, including the issue of missing biographies of women and other imbalanced coverage, fewer women in computer-related fields, and an intimidating culture. They posited that an infrastructure lens examining three specific elements: architecture, policies and laws, and norms and logic, and the power relations produced by infrastructures, will help to explain gender-related issues. These issues are of serious concern and also provide elements that may be considered in the light of the Framework.

Features integral to Wikipedia allow editors to enter into conversations with one another and to learn about content areas identified as priorities: there are often robust discussions happening behind-the-articles on project pages and talk pages. The history tab allows both editors and readers to track the history of changes to any given article. Additional initiatives exist in which Wikipedia editors or would-be editors are brought together and introduced to editing. An example is the Art+Feminism campaign (http://www.artandfeminism.org/), which began in 2014. In the edit-a-thons connected to this campaign, content about women artists is added to Wikipedia for the use of people throughout the world. These editing events guarantee that additional content related to women's accomplishments is added to this resource, while at the same time new editors are being socialized into the community.

It is this community, and the fact that there would not be a Wikipedia without it, that differentiates this encyclopedia from others. Therefore, in the analysis that follows, the elements of the ACRL Framework that are highlighted will not necessarily relate to other tertiary sources, unless they use a wiki platform.

Wikipedia and the Frames

Walker and Li (2016) explored the role of various Wikipedia-related activities in addressing the goals of the Framework in a chemistry course. While their analysis of Wikipedia as a learning tool included two components specific to chemistry and biochemistry, the others apply to a broad range of learning situations. Their approach to the Wikipedia/Framework relationship differs from the current article in that they analyzed a classroom application of Wikipedia in the pursuit of improving information literacy abilities, rather than analyzing Wikipedia itself.
Each of the six frames will be explored in the light of *Wikipedia*. The focus will be on the explanatory content at the beginning of each frame, but selected knowledge practices and dispositions will also be addressed. Consideration will be given to both the structure of *Wikipedia* in connection to the frame as well as to the possibilities that *Wikipedia* offers for teaching information literacy using the *Framework*. The frames are not discussed in alphabetical order but rather based on the degree to which *Wikipedia* illuminates their content.

When it provides additional scaffolding in connection with the goals of a particular frame and enhances student learning opportunities, the discussion will introduce metaliteracy concepts (Jacobson & Mackey, 2013; Jacobson, Mackey, O’Brien, et al., 2018). The *Framework* itself used metaliteracy as a founding principle, along with the idea of core concepts.

**Information Creation as a Process**

This frame delves into how information is produced and shared, and how differences found within these two characteristics give definition to the information products. The frame encompasses elements such as the importance of considering a particular information need, recognition that perceptions of information products vary based on the information creation process, and the implications of dynamic versus static information. All of these elements, and others listed in the frame, are pertinent to *Wikipedia*.

The defining characteristic of *Wikipedia*, it might be argued, is how it is created. *Wikipedia* is crowdsourced and as dynamic as a source might be. Understanding the exact nature of this creation process is critical to understanding the information that one finds in articles on the site. The opinions of faculty members and students mentioned earlier in this article often stem from a lack of understanding about how this information is created and then appears in, or disappears from, *Wikipedia*. Learning more about these creation and post-creation processes allows individuals to be far better at determining the value of information in *Wikipedia*. For example, scrutiny of the page statistics information, available from the view history tab, provides an overview of how many people have been involved in the creation of a particular *Wikipedia* article.

*Wikipedia* provides an in-depth opportunity to consider key elements of this frame, one of which is the role of pre- and post-publication editing and reviewing, and the potential

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contributions such reviews add to the quality of a source. The knowledge practice “Articulate the capabilities and constraints of information developed through various creation processes” (ACRL, 2015, p. 14) demands that learners truly understand Wikipedia's creation process before they can claim such mastery. The dynamic nature of information in Wikipedia is an enormous strength, but it is only through understanding the editorial processes in place that this becomes clear.

Individuals who edit in Wikipedia are able to gain first-hand experience with the information creation process. While actively participating is not required to understand Wikipedia's connection to the “Information Creation as a Process” frame, creating content in Wikipedia provides an immersive experience that brings the frame to life. Writing an article; finding high-quality references; undergoing the scrutiny, editing, and decision-making of other editors; and recognizing that one's work is not static, all provide individuals with a first-hand and immediate opportunity to grasp core components of this frame. But in order to do so, the community norms, policies, and processes must be fully understood, giving a visceral, behind-the-scenes application of “Information Creation as a Process.”

Of metaliteracy's four goals, the third, “Produce and share information in collaborative and participatory environments,” is closely aligned with this frame (Jacobson, Mackey, O'Brien, et al., 2018). There are a number of appropriate metaliteracy learning objectives:

- See oneself as a producer as well as consumer of information,
- Participate conscientiously and ethically in collaborative environments,
- Share knowledge accurately and effectively through the production of content using appropriate and evolving formats and platforms, and
- Translate information presented in one manner to another in order to best meet the needs of a particular audience.

All four metaliteracy learning domains are represented within these learning objectives: affective, behavioral, cognitive, and metacognitive. Metaliteracy's emphasis on the idea of a learner being an information producer is evident in these learning objectives in a way that does not emerge in the text of the ACRL frame. The first objective above is critical as a starting point, as it involves recognition of one's involvement in the creation process. Without this realization, it is difficult to even imagine a place for oneself as an information creator.
Wikipedia is of striking value as a teaching tool in connection with the “Information Creation as a Process” frame. One disposition needed to move towards mastery is, “Accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes” (ACRL, 2015, p. 15). Wikipedia provides a complex entity that, while not truly emerging, is full of ambiguity, not least in relation to the quality of the content, article by article.

Scholarship as Conversation

The brief description of the “Scholarship as Conversation” frame is, "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" (ACRL, 2015, p. 20). An examination of Wikipedia in light of this frame reveals two diverging paths. The frame as it is written involves negotiating meaning. Tertiary sources, such as encyclopedias, reflect accepted knowledge. Even updated, the descriptions of the states of various fields do not fully reflect the conversations currently taking place within a discipline. This is also true of Wikipedia, where primary research is not welcome, and indeed, researchers are prohibited from contributing primary discoveries (Wikipedia: No original research, 2019). In this particular sense, Wikipedia does not provide a good understanding of “Scholarship as Conversation.”

However, where Wikipedia does excel is in the conversation that takes place behind the scenes. The dynamic features of Wikipedia provide the possibility for such conversations. Writing on an article’s talk page is a way to negotiate meaning with other editors interested in capturing a particular topic. In this case, the conversation is not between the original scholars in that discipline but rather those who are sharing information about it. This conversation can also be seen on the history pages of articles where changes are tracked and described. While the processes involved do not always work flawlessly, they do provide a window, rarely available elsewhere, into the creation and content of an information resource. Therefore, Wikipedia provides a nuanced understanding of what a conversation might look like.

Other components of this frame, such as the knowledge practice connected with learners engaging in scholarly conversation at an appropriate level, encourages individuals to interact with other Wikipedia editors in the development of articles. While doing so can be an uncomfortable experience for some learners, scaffolding with the metaliterate learner
roles and learning domains helps to provide individuals with a sense of empowerment (Jacobson, Mackey, & O’Brien, 2018; Jacobson, Mackey, O’Brien, et al., 2018). Metaliteracy emphasizes roles such as producer of information, translator of information, and participant in online social environments. Metaliteracy also addresses the importance of collaborating in dynamic online spaces and recognizing one's own responsibilities while doing so.

Metacognition, one of metaliteracy's four learning domains, foregrounds the importance of reflecting on one's own thinking and learning, and plays an important role in this process.

Another “Scholarship as Conversation” knowledge practice concerns barriers that learners may face in entering the conversation in a particular discipline. Being a contributor to a Wikipedia article is a way to enter that conversation, even if obliquely. It allows learners to "see themselves as contributors to scholarship rather than only consumers of it" (ACRL, 2015, p. 21), a frame disposition that is also a key tenet of metaliteracy.

Information Has Value

As content-rich as it is, Wikipedia is not a balanced source. Editors are volunteers and write about topics that interest them. The vast majority of editors are males, resulting in a gender bias that is evidenced in its content (Wikipedia: Gender bias and editing on Wikipedia, 2019), as previously mentioned. It is important for both those who consume information in Wikipedia, as well as those who produce it, to understand this limitation. This weakness directly speaks to one of the knowledge practices of the “Information Has Value” frame: "understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information" (ACRL, 2015, p.16). Unlike many other sources, the dynamic nature of Wikipedia means that this weakness can be addressed. This speaks to an aspect of this frame, "value may also be leveraged by individuals and organizations to effect change and for civic, economic, social, or personal gains" (ACRL, 2015, p.16).

Metaliteracy contributes additional context connected to this frame and the importance of recognizing the value that an individual may contribute. Wikipedia's openness to editors allows individuals to “see themselves as contributors to the information marketplace rather than only consumers of it” (ACRL, 2015, p. 17), which is a core component of metaliteracy. The metaliteracy learning objectives for this frame partially overlap those of "Information Creation as a Process," highlighting the connection between these two frames:
• Share knowledge accurately and effectively through the production of content using appropriate and evolving formats and platforms,

• Translate information presented in one manner two another in order to best meet the needs of a particular audience, and

• Recognize diverse cultural values and norms to create and share information for global audiences

The first two bullets make it clear that the value of particular information to others is an integral part of the information creation process.

Editing in Wikipedia provides first-hand experience of an additional element of this frame: intellectual property. Wikipedia does not encourage direct quotations from sources, unlike the convention in academic writing. Learners who come from the academic setting often struggle with how to include content without quotes and without plagiarizing. This struggle provides an environment to truly grapple with the overall concept of needing to “Respect the original ideas of others,” a disposition from this frame (ACRL, 2015, p. 17).

Wikipedia articles are often enhanced by images, which lead to another learning opportunity to explore the inclusion of potential images that meet licensing requirements. The dynamic, open nature of Wikipedia provides an enhanced opportunity to understand the "Information Has Value" frame, that of contributing content. For those who use Wikipedia to consume content, the ability to reuse images that appear in articles or in the repository for these images, Wikimedia Commons, provides a learning opportunity that contrasts with a number of other sources, such as Google images or other images randomly found online.

Authority is Constructed and Contextual

Wikipedia provides an excellent case study for exploring the constructed and contextual nature of authority. Academics look to an author’s education, experience, and previously written contributions as markers of authority. Authority is also dependent upon peer review undertaken by others with commensurate education and experience. This lack of markers of traditional authority is a key source of the premise that Wikipedia is not a reputable place to get information. The frame starts, “Information resources reflect their creators' expertise and credibility and are evaluated based on the information needs of the context in which the information will be used” (ACRL, 2015, p.12). As a source that makes
it difficult to determine the identity, let alone the expertise, of article authors and Wikipedia editors who might review them, it is not surprising that academics suspect Wikipedia's accuracy.

Konieczny (2016) posited that Wikipedia provides "an environment in which expert authority is more likely to be questioned, and where reliable knowledge can be created through a collaborative practice" (p. 1530). The collaborative creation of knowledge is more typical outside of academia than the peer-review model, and thus provides an environment in which students come to understand the role that they can play in providing information to others.

However, the frame also highlights that information created by some is privileged over that created by others. It indicates that an understanding of this concept leads to further examination of the authority of an information source. Wikipedia makes this possible through the discussions on the talk page and the history of the edits—a non-traditional type of examination to determine authority, as often required for academic settings. One of the knowledge practices found in the “Authority is Constructed and Contextual” frame directly applies to the structure of Wikipedia. This point, “Understand the increasingly social nature of the information ecosystem where authorities actively connect with one another and sources develop over time” (ACRL, 2015, p. 13), is connected to metaliteracy’s emphasis on collaboration and participation online. Much of the information we encounter is found online and on non-academic platforms. It is imperative that in order to successfully navigate information, individuals need to be able to use non-traditional methods of determining authority.

A disposition found in this frame that relates to metaliteracy is the need to "develop an awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview" (ACRL, 2015, p. 13). This stems from the affective and metacognitive learning domains emphasized in metaliteracy, which are reflected in its first goal, "Actively evaluate content while also evaluating one's own biases." Wikipedia emphasizes a neutral point of view, but for both readers and editors of Wikipedia, without the reflection needed to assess one's own biases, it is possible to unwittingly accept or include article content you agree with, neglecting to fill gaps by seeking missing components or those you have issues with.
While the knowledge practices, traits, and dispositions relating to the “Authority is Constructed and Contextual” frame are associated with people, there is a way to apply them to the concern that Wikipedia is being compromised by a lack of diverse voices and interests. Yet Wikipedia is a living, growing organism and, through the awareness and efforts of its editors and the Wikimedia Foundation, it is striving to reflect knowledge constructed, or in this case reported, more inclusively.

Research as Inquiry

“Research as Inquiry” focuses on identifying problems or questions of interest in an academic discipline or area of interest outside of academia and then applying one’s energy to solving them. The issues might range from the basic to those that are thornier, requiring advanced research methods. A vital disposition for this frame is “Consider research as open-ended exploration and engagement with information” (ACRL, 2015, p.19).

Because Wikipedia does not report or support the addition of primary research, readers will not find models of inquiry-based research. As a tertiary source, Wikipedia limits editors to finding missing information rather than filling gaps in knowledge. Some of these gaps may become evident in the discussions on talk pages.

Wikipedia’s value in connection with this frame comes from its impetus to prompt learners to use other sources. The list of references at the end of articles is one of the elements that lead researchers to sources that have the potential to provide more scope for research as inquiry. A metaliteracy learning objective that adds nuance to this element of the frame is “Verify expertise but acknowledge that experts do exist.” Wikipedia embodies this idea through its strong emphasis on reliable sources, even scholarly sources. Articles that do not cite their sources are flagged and may even be removed (Wikipedia: Reliable Sources, 2019). This exemplifies the reality that experts are able to provide information that might be used with confidence.

Searching as Strategic Exploration

Wikipedia’s value for this frame is similar to its value for the “Research as Inquiry” frame. “Searching as Strategic Exploration” explores ideas connected with information evaluation and mental flexibility in the pursuit. Wikipedia itself is just one source, although it is one rich with internal links, and provides avenues for pursuing additional resources through the external links and article references. These sources might be considered analogous to the
disposition found under this frame of seeking guidance from experts. Given Wikipedia’s emphasis on reputable sources, article references might help to encourage this disposition.

The “Searching as Strategic Exploration” frame includes a telling sentence, “Experts realize that information searching is a contextualized, complex experience that affects, and is affected by, the cognitive, affective, and social dimensions of the searcher” (ACRL, 2015, p.22). While Wikipedia has the potential to move novices towards such a threshold, it requires a sophisticated understanding to see this path. The omnipresence of Wikipedia and the quantity of information it contains may lead novices to use it as their main source of information, not recognizing the complexity of the searching experience. This is a situation in which the warnings of professors are advantageous.

Conclusion

There are a number of components in Wikipedia that align with the Framework, suggesting that an analysis of Wikipedia might serve as a contained but rich case study of how the Framework can serve as a construct whose utility extends beyond individuals’ information literacy understanding and progress. Individual frames shed light on this resource, and metaliteracy, which influenced the Framework, highlights additional elements of Wikipedia, particularly as an immersive teaching tool.

Wikipedia is an information source unlike most others. Its structure, prominence, and potential contribute to the conversations and the disputations about its value. Using the Framework as a lens to examine Wikipedia has proven to be an interesting exercise, one where additional analysis most certainly could be undertaken. Information resources with fewer moving pieces, considered either individually or by category, might not yield such a number of interesting connections with the Framework, but that would only be determined after more scrutiny.

This idea of connecting information resources with the Framework is being offered as a conversation starter and as a potential mechanism for thinking of the Framework more broadly. The question then occurs, are there other ways that the Framework might be envisaged and other situations in which it might be applied that will situate information literacy in unexpected ways? What pedagogical applications might be taken from such explorations? And might the influence of metaliteracy on the Framework be brought into higher relief through this altered lens?
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