Writing Faculty and Librarians Collaborate:

Mapping Successful Writing, Reading, and Information Literacy Practices for Students in a Posttruth Era

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Abstract This article addresses the interrelationship among writing, reading, and information literacy (WRIL) by discussing a collaborative assessment project that generated a criteria map focused on process, enactment, engagement, and attribution. The authors connect this map to the *Framework for Success in Postsecondary Writing* and the *Framework for Information Literacy for Higher Education* but critique the failure of these frameworks to account for the importance of reading. In emphasizing WRIL for students, the authors contend that practitioners must help students understand WRIL practices as dynamic, developing, and complex, and they provide pedagogical suggestions for assigning reference materials, reading as researchers, and sharing visualization tools.

Keywords: dynamic criteria mapping, reading, writing, information literacy, and concept maps

Long before the *Oxford Dictionary* declared *posttruth* to be the 2016 Word of the Year, institutions of higher education prioritized critical thinking, reading, and information literacy, especially among first-year writers. A study on "Why University Students Don't Read" (Hoeft 2012), the Association of American Colleges and Universities (2015) report "Trends in Learning Outcomes Assessment," and studies conducted by Project Information Literacy (Head 2013) underscore the difficulty in reading critically that students experience during the research process.

At a time when fake news prospers, librarians and writing faculty should collaborate to clarify the dynamic interrelationship among writing, reading, and information literacy (WRIL) and to help students learn information literacy competencies. Partnerships among librarians and writing faculty, though, have been hampered by jargon (Carter and Alderidge 2016) and interdisciplinary ignorance of scholarship (Deitering and Jameson 2008; Mazziotti and Grettano 2011).

Our research responds to these challenges and contributes to the disciplinary conversation regarding the dynamic interrelationships involved in WRIL by discussing the results of a collaborative assessment project at Elmhurst University, a small liberal arts institution. Our project, approved by the university's institutional review board, applies dynamic criteria mapping (DCM), a qualitative method of writing assessment developed by Bob Broad (2003). Our adaptation of DCM consisted of a generative process during which librarians and writing faculty defined information literacy and delineated what characteristics of academic argument essays exemplify WRIL proficiency (Behm, Cook, and Kazan 2018). Through the qualitative data generated by this study, we conceptualize information literacy as a developmental process and as a disposition toward information and source material that involves four interrelated critical practices: process, enactment, engagement, and attribution. The conventional framework for credibility (authority, accuracy, currency, relevance, appropriateness, and bias) is subsumed within these critical practices but is applied in increasingly complex ways as students move from novices to experts (Horning 2011). In the appendix we show the synonyms and descriptions used by librarians and writing faculty to define and clarify the dynamic interrelationship among these practices.

First, we discuss the connections among the Council of Writing Program Administrators, National Council of Teachers of English, and National Writing Project's *Framework for Success in Postsecondary Writing* (CWPA, NCTE, and NWP 2011), the *Framework for Information Literacy for Higher Education* (Association of College and Research Libraries 2015), and our faculty-generated criteria map with a critique of how the frameworks fail to account for the importance of reading. Next, we argue for the interconnectedness of cognition and WRIL, focusing primarily on WRIL. Finally, given the importance of WRIL for first-year students in

terms of transfer and for navigating a world of fake news and posttruth beyond the academy, we conclude with pedagogical suggestions. We contend that practitioners must take into consideration and reinforce how WRIL proficiencies are dynamically interrelated not only because we are inviting students into a complex intellectual enterprise but also because we want students to transfer these skills to the multifaceted milieus of social media platforms and the wider cultural context.

Frameworks and Dynamic Criteria Mapping

Of the many implications of our research, two are most topically relevant to this special issue: (1) important interdisciplinary synergies exist among the *Framework for Success*, the *Framework for Information Literacy*, and our research, and (2) both frameworks insufficiently address the role of reading in writing and information literacy. Before our DCM process, we were aware of the national conversation about WRIL as enshrined in the respective frameworks. We were surprised to find that the criteria map that grew out of our process closely paralleled the core concepts, knowledge practices, and dispositions as identified in the *Framework for Information Literacy*, connecting our local assessment to the emerging national conversation in library science. Furthermore, our criteria map also connects with the habits of mind and experiences as articulated in the *Framework for Success*. Broadly, both disciplinary documents underscore habits of mind, particularly the importance of metacognition. Additionally, the respective frameworks and our research also privilege engagement and process, presenting information literacy as a multifaceted, dynamic practice in which reading and writing are central.

Although our research generated copious qualitative data, owing to space constraints we discuss the respective frameworks only in relation to one student product and our readers' responses to that product in relation to engagement and process. The first-year student's artifact

discussed serial killers, suggesting serial killers have been glamorized by the coverage of their crimes on various media platforms. This glamorization, according to the artifact, deflects attention away from the psychological disorders allegedly experienced by serial killers and disregards the devastating impact of crimes on victims' families. The student artifact attempted to synthesize source material from TV shows, academic journals in psychology, periodicals, and sources in pop psychology. As might be expected, the writing demonstrated confirms what previous research has already articulated about students' difficulty with reading. For instance, it is clear that the student read the source material to mine for quotes (MacMillan and MacKenzie 2012), searching only for what seemed to be the best sentences while failing to understand the context within which sentences appear and the disciplinary and social context within which the original sources appear (Carillo 2014: 127). In mining for quotes only, the student displayed "patchwriting," instances that parallel the observations made by researchers associated with the Citation Project, and demonstrated "poor writing in need of revision" (Jamieson 2018: 43).

In their comments on the artifact, faculty participants criticized the "insufficient development of source material and a real lack of awareness of how that material ought to be used or integrated for effect or to support a point." The student author never "review[ed] the conversation on [serial killers] and fail[ed] to put sources into dialogue with each other." The student demonstrated "little to no engagement [with] the sources" cited, using those sources only to report on common knowledge about serial killers rather than to "engage with or develop an argument." Our faculty participants were continually frustrated by students' inability to read for, engage with, and cultivate authority, failing to situate themselves as authorities within the context of the scholarly conversation and to put themselves in dialogue with their sources by reading and challenging them critically. The *Framework for Success* and the *Framework for*

Information Literacy similarly privilege engagement. The *Framework for Information Literacy*, for instance, devotes a section to "Scholarship as Conversation," stressing the importance of students "entering ongoing scholarly conversation[s]" by "developing familiarity with the sources of evidence, methods, and modes of discourse" within disciplines and informing topics (Association of College and Research Libraries 2015: 8). The *Framework for Success*, too, highlights engagement as a habit of mind that helps students "make connections between their own ideas and those of others" (CWPA, NCTE, and NWP 2011: 4).

Our faculty participants also criticized the seemingly superficial process that the student used in harvesting information sources. For librarians, the superficiality of the student's process was indicated by the "unclear purpose" of the writing, which likely had a cascading effect. The lack of purpose led to poor "source choice" with "lots of extraneous, peripheral sources" that were inadequately contextualized and explicated, which not surprisingly ensured myriad "unsubstantiated claims." With an unclear purpose, the student likely failed to grasp information needs and what types of sources were appropriate and relevant for supporting various claims about the glamorization of serial killers. For librarians and writing faculty participating in our DCM process, these opportunities for improvement indicated that the student followed a truncated research process. As one of our participants noted, the student failed to "have command of the research or the research process." In contrast, our participants contextualized research as a complex, recursive, and iterative process of inquiry where students dive into the messiness of gathering, evaluating, reading, and synthesizing information. This process involves seeing gaps in conversations regarding a topic and purposely engaging conflicting and divergent points of view rather than eliding them. This conceptualization of the research process closely connects with *Framework for Information Literacy*'s core concept of "Research as Inquiry"

(Association of College and Research Libraries 2015: 7) and several of the *Framework for Success*'s habits of mind.

As theoretically informed and pedagogically beneficial as the disciplinary documents are, they insufficiently present and inadequately discuss the role of reading in the writing process and in applying information literacy skills. The *Framework for Information Literacy* mentions reading only in the sense of offering background material for practitioners. There is nothing explicit about the role of reading critically and comprehensively as part of learning, fostering, and applying information literacy. Reading critically and comprehensively, then, seems to be an assumed component of information literacy. Both Alice Horning (2017) and Ellen Carillo (2017) similarly criticize the *Framework for Success* and provide insightful suggestions for how the document could more comprehensively treat the integral role of reading in students' academic experiences. The *Framework for Success* speaks to reading within the context of developing critical thinking, encouraging writing instructors to ensure that students "read texts from multiple points of view . . . and in ways that are appropriate to the academic discipline or other contexts where the texts are being used" (CWPA, NCTE, and NWP 2011: 7). That framework also links reading to cultivating and applying knowledge of disciplinary and genre conventions (9).

However, the *Framework for Success* fails to mention information literacy specifically, though the dispositions and knowledge practices that comprise information literacy are seemingly implicit in the document, particularly in its discussion of curiosity and metacognition. In contrast, the *Framework for Information Literacy* presents information literacy as a metaliteracy, "an overarching set of abilities in which students are consumers and creators of information" (Association of College and Research Libraries 2015: 2). This frames information literacy as a much more complex, dynamic, and interrelated nexus of dispositions and knowledge

practices in which writing effectively and reading critically are assumed and subsumed in terms of importance. As a metaliteracy, information literacy "demands behavioral, affective, cognitive, and metacognitive engagement with the information ecosystem" (2). The *Framework for Success*'s most explicit references to the knowledge practices comprising information literacy are in the section "Developing Critical Thinking through Writing, Reading, and Research" (CWPA, NCTE, and NWP 2011), which exhorts writing instructors to help students "evaluate sources for credibility, bias, quality of evidence, and quality of reasoning" (7), "conduct primary and secondary research using a variety of print and nonprint sources" (7), and "generate questions to guide research" (8). In a subsequent section, the framework also encourages students to "practice various approaches to the documentation and attribution of sources" (9). Only mentioning skills and practices conventionally associated with information literacy, the *Framework for Success* oversimplifies information literacy, singularly referencing the harvesting of sources, evaluation of sources, and attribution of sources.

Our Criteria and Writing, Reading, and Information Literacy

In contrast to the *Framework for Information Literacy* and the *Framework for Success*, our research suggests that reading critically and comprehensively is foundational to practicing information literacy and writing effective, research-based academic essays. Originally, as Horning (2017) and Carillo (2017) suggest, respectively, about research in rhetoric and composition and as Margy MacMillan and Allison MacKenzie (2012) suggest about research in library science, we took the role of reading for granted in conceptualizing information literacy and in designing classroom practices and assignments that were intended to help students develop their proficiency with information literacy. In failing to recognize the central role of

reading, we represented a simplistic understanding of how students learn, develop, and apply information literacy proficiencies.

By analyzing more deeply the data generated during our DCM assessment practice, we now understand that information literacy requires reading comprehension at many levels, including efficiently and correctly identifying an appropriate access point for information; interpreting search results; reading source material critically, deeply, and fully; reading for gaps and concurrences among source material; synthesizing that material within a conversation and in accordance to one's purpose and argument; and reading one's own writing iteratively and critically to determine information needs, inconsistencies in arguments, infelicities in the application of sources, and opportunities for organizational and syntactical revisions.

As shown in the appendix, we suggest that the four constellations emerging from our research—process, enactment, engagement, and attribution—represent the dynamic articulations among WRIL in a way that not only more accurately presents the complexity among these critical practices but also communicates them intelligibly to students and faculty, with the strongest emphasis on enactment and engagement. Some characteristics fit more than one constellation, and we worked collaboratively with library and writing faculty to come to consensus and to construct how we conceptualize information literacy and how elements connect and flow among the constellations of process, enactment, engagement, and attribution. At the time, we identified sources, synthesis, cognition, and writing as the means by which these concepts are embodied and expressed. While the group did discuss reading skills among students, nothing about reading made it into our original map. We considered reading, primarily implicitly, but did not make reading visible (Carillo 2018). While our research set out to understand what students were learning in the information literacy sessions provided by our

faculty librarian, who works with first-year writing courses, the writing faculty who participated discovered that the criteria above—especially when extended to include the range of synonymous responses we gathered under each area—applied to writing. As our discussions evolved, we also discovered that a foundational aspect of what we ask students to do—read—was missing in our criteria. Even though we teach in a state that adopted the Common Core State Standards, which include reading standards (Illinois State Board of Education, n.d.), we did not include reading as an explicit category in early instantiations of our criteria list or map. Figure 1 depicts our revised criteria map that extends our previous research (Behm, Cook, and Kazan 2018) to include reading.

<insert figure 1 near here>

Process

Under the category of process, participants grouped "analytical awareness," which demands that the writer provide insight and explanation, and "knowing information need," which requires action on the part of the writer in terms of the research process but also necessitates knowing what information to share with the audience—what they already know and what they value. Faculty valued diverse viewpoints, curiosity, inquiry, and recursivity—all features that easily translate to writing with an expansive view and with inquisitiveness. The very process of reading with purpose, "the deliberate and thoughtful use of reading strategies, particularly when students are engaged in a unit of inquiry where they encounter information overload, is compatible with interventions used in the various stages of the ISP [information search process]. . . . Reading strategies become interventions for information processing as well as reading comprehension" (Messenger 2015: 24). Thus, WRIL are intertwined in this learning moment (information overload) that demands students revisit these components and question their work and themselves. Evidence-based reading strategies, such as "making and checking predictions,

activating prior knowledge, and asking and answering questions" (Hall 2012: 266), apply to all three areas of WRIL. One could say that students begin the process as readers of information sources and end the process as readers of their own work. Using "activating prior knowledge" as just one example, experienced readers consider what they already know about an author, text, and subject when they approach a reading task. Researchers start with what they know about a subject to formulate a research question, consider what disciplinary-specific databases will be relevant for their work, and determine their actual information need. Writers begin with what readers know and value in order to persuade them of something new.

Enactment

This second category encompasses how students demonstrate skills in using acquired information to support an argumentative position while embracing complexity; provide context, perspective, and awareness of the discourse inherent in a topic and sources; and show awareness of bias (avoid "cherry-picking" sources) and source credibility. Faculty readers felt these contributed to an overall sense of the writer being informed on the issue. This category was also one that writing faculty saw resonating with writing pedagogy and assessment in that writers are asked to take a stand on an issue but must do so by being cognizant of ethical appeals that evolve from grappling with complexity and understanding discourse communities. Reading, like information literacy, is something that students enact by both exploring sources and perspectives and offering their own reading, selection, and interpretation of these sources.

Enactment is essential as students move from novices to experts because they don't simply learn to do these things once and then reproduce their knowledge. Rather, with every new rhetorical situation, students must rely on and refine their repertoire. When we think of enactment in light of the threshold concept that "all writers have more to learn" (Rose 2015: 59),

we can see how writing, along with reading and researching, necessitates putting what students are learning into practice and anticipating missteps as part of this process. Knowing how to read is not the same as knowing how to read as a historian; knowing how to write is not the same as knowing how to write as a poet; and knowing how to Google is not the same as knowing how to find, assess, and deploy situationally useful information. Each situation requires a new enactment.

Knowing how to read, research, and write is not the same as knowing how to do so with purpose, either. Enactments by novice readers, to extend Horning's (2011) analysis of novice and expert readers and the meta-awareness experts develop, are superficial in their inability to understand their purposes for reading different research sources and to understand what purposes those research sources serve in relation to argument. With guidance, students can learn to be "more goal directed," as Edwin B. Van Lacum, Miriam A. Ossevoort, and Martin J. Goedhart (2014: 262) argued in their study of working with first-year students reading journal articles in the life sciences. As students develop as readers, researchers, and writers, they gain a better understanding of which strategies are more effective given the rhetorical situation and genre. Anne M. Britt, Jean-François Rouet, and Amanda M. Durik (2018: 163) hypothesized that "non-expert readers use minimal plans and goal structures and update them iteratively and opportunistically." But we can help students build their tool kits more deliberatively and purposefully. We can assist them in developing strategies over time through "scaffolding [that] supports meta-cognitive activities involved in getting meaning" (Horning 2011: 6) from the WRIL process, as we discuss below.

Engagement

Readers categorized papers as satisfactory or proficient, as opposed to developing, when writers resisted settling on a simplistic argument or characteristic of a group of people or field of research and instead persisted in accommodating alternative perspectives into their writing. Faculty used words like *understood*, *interpret*, *rhetorical awareness*, and *comprehension of source material*—all various ways of talking about reading (see appendix). This combination of persistence, complexity, and comprehension speaks to the very essence of the role a writer takes as someone who is struggling to make meaning through the recursive process of thinking critically about a position amidst competing information and within a relevant conversation. Students engage both in reading research and in using the research to identify other sources, what we refer to as "breadcrumbs" below.

Engagement also involves evaluating the credibility of source material. However, according to Sam Wineburg and Sarah McGrew (2019), how students have traditionally been taught to evaluate source material is incomplete. An approach like lateral reading—"leaving a site after a quick scan, opening up new browser tabs along the screen's horizontal axis to judge the credibility of the original site" (4)—introduces a new evaluative process that functions as both a reading and a research strategy. The artifacts suggested to us that developing students were more likely to avoid this complex engagement.

Attribution

While we might have expected this criterion to be reduced to documentation, participants responded to how students introduced their sources and the extent to which these introductions and tag phrases were employed strategically to strengthen (or weaken) a source's credibility and a writer's argument. Both the actual sources—type, quantity, quality, variety, and authority—and

how students represented them through writing choices (e.g., tag phrases, quotations, paraphrases, and summaries) enriched this category beyond internal citations and a works cited list to focus on how writers represent their sources rhetorically. We didn't diligently compare students' sources to their representation of them to identify instances of patchwriting (Howard, Serviss, and Rodrigue 2010), but we could readily see cases in which students "patched" sources to buttress their argument when quoted material in fact seemed to be arguing against the writer's stance. Some of the very papers in which students carefully introduced their sources with descriptions, institutional affiliation, and tag phrases were the same ones in which we noticed a disconnect between a source and the use of that source, which we parse as evidence that students need to spend more time on the reading process to comprehend and summarize the information before moving to using it.

Thus, while our constellations and map illuminated the articulations between writing and information literacy, we now argue that just as we added writing as a practice, we need to add reading as a practice (see fig. 1). We need to account for reading's role and depict it as part of the dynamic process that we ask students to embrace.

Pedagogical Strategies

From a pedagogical perspective, how can instructors teach students to go beyond simple search strategies and to cultivate effective reading practices during the writing of research projects? The librarians in our project stressed that information literacy depends on students engaging the process as curious researchers, negotiating the messy recursivity of finding, reviewing, and evaluating source material. For writing faculty, one of the rewards for participating has been the professional development that librarians have provided in helping them understand how to teach students to perform sophisticated strategies of research. In enacting DCM, our project has

identified textual features and criteria revealing the complex interplay of WRIL, such as the transfer of metacognitive skills and engagement to different texts and contexts. In *Teaching Readers in Post-truth America*, Carillo (2018: 5) asked, "In a culture that does not agree on the principles of evidence and rationality or on facts, how does one teach reading, writing, and thinking?" In this section, we suggest a few ideas ranging from multifaceted projects to visualization tools.

Reading Reinforcement and Research Variety

To enhance their process and engagement, students need to learn to find and read a variety of sources that span audiences, with themselves included as intended readers of newspaper articles and media reports. In writing about the intersection of scientific literacy and information literacy, Cassie Majetic and Catherine Pellegrino (2014) detailed a multistage project in which students learn research skills by engaging in preparatory reading of a scientific article followed by discussion, summary, and reflection. At a subsequent library session, the students locate the original science research reported on by the media and other scientific sources relevant to the topic. Students learn helpful research skills but are also being led through a process that involves focused reading, finding primary sources, and evaluating relevance. The process of "fact-checking and verifying source material through information literacy skills" (111) speaks to the connections among WRIL: students practice writing summaries over a period of time while developing their critical thinking skills as they use additional reading questions to foster analysis and evaluation.

Assignments like these reinforce close reading habits, evidence of which we sometimes fail to see even when students are careful with the formalities of attribution but fail to grasp a scholar's stance. Requiring research variety creates the conditions for building WRIL skills and

encouraging students to read laterally, thus emulating what professional fact-checkers do (Wineburg and McGrew 2019). By providing this structure and helping students hone a process that goes beyond academic writing, we can enable them to be rhetorically savvy when they encounter media reports on a range of topics against the backdrop of fake news and posttruth.

Reading Reference Sources as an Entry Point

Starting with academic encyclopedias prepares students for how to read when they locate their research and helps them engage the context of source materials, which is precisely the knowledge that novices lack. Not always helpful for providing context, scholarly articles tend to be narrowly focused. We argue that, with proper guidance, discipline-specific encyclopedias, such as the *Encyclopedia of Social Theory*, can be more productive places to start. Students may avoid encyclopedias because they don't directly answer their research question, and faculty may be resistant to encouraging this reading because it seems overly simplistic to a practiced scholarly mind. These sources, though, can be used in the same way as the journalistic ones in our previous suggestion: to allow students to read and interrogate scholarly discourses. From a reading perspective, using reference sources allows students to locate themselves as readers and writers in the context of the larger scholarly conversation.

Reading as a Researcher by Using Breadcrumbs

Even when students employ an information literacy frame, especially while locating and evaluating sources, it is even more important for them to learn how to read as researchers. In the same way that Carillo (2014: 119) proposed that we must focus on "teaching students *how to learn* to read rather than arguing for a particular reading approach," we want students to view each source as a breadcrumb that calls for a certain kind of reading while leading to additional sources. In finding a source, novice researchers often approach it vertically, carefully reading

that one source rather than reading all the sources laterally to delineate a disciplinary conversation and understand how sources serve as signposts to other information (Wineburg and McGrew 2019). Horning (2011: 5) argued that expert readers possess and apply a highly attuned meta-awareness of texts when reading them, including metatextual awareness, which involves understanding "the organization and structure" of texts; metacontextual awareness, which pertains to "where a text comes from and how it fits into the larger scheme of things"; and metalinguistic awareness, which relates to an understanding of "the language of a text." This meta-awareness on textual, contextual, and linguistic levels is an applicable framework for understanding the complexities of the research process. What Horning identifies as moving from novice to expert reader similarly occurs when students progress from novice to expert researchers. We can teach students to research in the way that Carillo (2014) and Horning (2011) contend we teach them how to read—with a focus on the process and the awareness used by expert researchers: Which database do I select and how do I decide? When I do a search, what parameters should I use (and why) to narrow my 10,000+ results? While novice researchers simply locate any breadcrumb, expert researchers don't focus on any one breadcrumb and instead use sources to outline the disciplinary terrain on a topic.

To move from novice to expert, students need to practice their WRIL skills in a controlled environment. We propose that students be limited to a select number of databases and be intentionally taught how to "read" those databases. In a survey jointly conducted by ProQuest and the *Library Journal* (2019: 12), 95 percent of academic librarians agreed that "students often struggle to identify which information sources are accurate, reliable, and trustworthy." While we concur, we are skeptical that the answer is the "ease of access" offered through "multi-format databases" (2–3), as determined by this industry-sponsored research. Instead, students need to

ask how a works cited list points to other sources. How does a date of publication, title, source, or length mark a productive trail? What signposts will lead off track? If we can help students read information and think of research in this way, we can guide them to transferring these skills to the reading they do online and outside the classroom.

Providing Visualization Tools

Figure 1 demystifies the WRIL process for students and provides an alternative to the many text-based documents they receive, such as assignment sheets and rubrics, thereby enhancing multimodal learning and enriching discussions. Visualization tools are especially useful in courses that rely heavily on texts and discussion (e.g., literature and writing courses). A graphic representation of WRIL appeals to multiple senses and aids in retention and understanding. Linda B. Nilson (2016: 329), for instance, pointed out that "material presented in both modes [verbal and visual] activates both sides of the brain, roughly doubling the number of neurons firing and synapses forming." A visual representation helps students understand the complex recursivity of dynamic literacy practices, making them concrete for students.

A visual representation also facilitates conversations regarding the importance of applying reading practices to harvest source material, situate sources within disciplinary conversations, and reflect on their processes of finding, evaluating, and using source material rhetorically. It would seem especially useful to have visualization tools for students who are new to the academy, for the very activities (like reading) that themselves seem intangible and have even eluded researchers and professional organizations. As an active learning technique, concepts maps—"asking students to create their own graphic representation of the concepts in a field" (Covington, von Hoene, and Voge 2017: 205)—can be used productively in the classroom at any time. For instance, concept maps "can act as an 'early warning' tripwire in the feed-

forward process by which instructors can revise their instructional strategies to better accommodate difficulties being experienced by students" (206). For our purposes, asking students to construct concept maps at multiple points in their WRIL process could provide insights into students' evolving understanding of these complex literacy practices.

Guided WRIL sharpens students' skills of evaluation, making them less susceptible to disinformation and less likely to spread misinformation, Dictionary.com's (n.d.) 2018 Word of the Year. The same basic questions that we equip students with when reading and writing—who? what? why? when? where?—can be used when students are gathering information and going online. The very act of being aware of their WRIL practices and other dynamic literacy practices functions as an antidote to fake news. Generating a criteria map initially meant for us as an assessment tool serves a secondary purpose focused on student use: they can actually employ the criteria and graphic to make conscious choices as they write, read, and research in their classes and in their everyday lives. It can function as another tool in their "toolbox of reading strategies" (Rodrigue 2017: 251), possibly making them less susceptible to misleading sources, tweets, and posts. As students cultivate dynamic literacy practices and meta-awareness, they can devise their own graphic that uniquely characterizes their process and understanding.

Conclusion

Like the values embedded in algorithms online, the principles embedded in our classrooms and institutions can be hard to discern without thoughtful reflection. The DCM process that we facilitated made apparent how we value information literacy—process, engagement, enactment, and attribution. Through thoughtful reflection and analysis of the data, we began to realize and delineate the multifaceted, dynamic interrelationships involved in WRIL. These complex literacy practices threaten to overwhelm students, however, especially the first-year students we focus on

in our research. But acknowledging this complexity, limiting it as necessary, and making WRIL visible to students through visualization tools can provide them with access points for participation. We want students to participate as engaged citizens in the world around them, deliberately and strategically applying their WRIL skills to enact conscientious citizenship, evaluate information, and deploy source material effectively. We can encourage them to do so by fostering their engagement in the democratic process and helping them see how their WRIL skills can be used in spaces beyond the classroom. In an age of posttruth, fake news, and misinformation, our WRIL skills have never been more important to filtering specious information, encouraging sincere discourse, and strengthening democratic ideals.

Appendix

Information Literacy Criteria: Guide for Researched Arguments in First-Year Writing

Process	Enactment	Engagement	Attribution
Library (re)sources	Command of research and argument	Persistence	Cite sources
Range of sources	Thesis	Inquiry	Works cited
Number of sources	Facilitate an argument	Grasp	Quotations
Source genre	Analytical awareness	Engaged	Paraphrasing
Academic sources	Bias awareness	Curious	Attribution
Scholarly sources	Resisting confirmation bias	Recursive	Tag
Analytical awareness	Cherry picking	Understood	Introducing
Relationships among source material	Conversation	Interpret	Not traceable
Appropriateness of source material	Explore	Inability to distinguish information from opinion	Authority
Relevance	Conflicting/complex	Accommodation of alternative perspectives	Background
Knowing information need	Integration/incorporation	Contrast sides	Terms
Credibility	Claim	Dialogue	Quality of source material
Quotes	Facts, evidence, and examples	Complexity	Quantity of source material
Cites	Support	Rhetorical awareness	Type of source
Digging deeper	Synthesize sources	Demonstration of critical thinking	Variety
Grappling with viewpoints	Contextualizing source material		Range of source material
Curious researcher	Grouping sources		Conversation
	Acknowledging perspectives		Visual representation of sources

Inquiry Recursive	Discerning the credibility of sources	Demonstration of being informed	Demonstration of methods

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Figure 1. Dynamic literacy practices