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Visualizing the Convergence of Metaliteracy and the Information Literacy Framework

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Chapter 9

VISUALIZING THE CONVERGENCE OF METALITERACY AND THE INFORMATION LITERACY FRAMEWORK

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INTRODUCTION

Displaying information in a visual manner frequently enhances clarity. Highlighting thematic elements and their interrelationships can lead to understanding, even insights, that might not otherwise happen. While words describe, well-conceived graphics illuminate in both subtle and overt ways. Synergies between word and image are especially powerful.

The visualization at the heart of this chapter makes connections between two separate but related frameworks: information literacy and metaliteracy. The ACRL *Framework for Information Literacy for Higher Education* acknowledges that it was influenced by metaliteracy, and in particular metacognition.[1] Metaliteracy emerged prior to the development of

the ACRL Framework and was similarly designed to recast information literacy for a new era. While both provide comprehensive models, this chapter will explore the relationships between particular aspects of each: metaliterate learner characteristics and Framework dispositions. Metacognition will have a leading role in this analysis.

The ACRL *Framework for Information Literacy for Higher Education* is informed by a number of theories and models from the fields of library and information science and education.[2] The task force members who crafted the Framework drew upon two in particular, threshold concepts and metaliteracy.[3] Threshold concepts affected both its structure and content, while metaliteracy primarily impacted the content. The document's introduction notes these influences but does not provide much detail. It refers to metaliteracy's four learning domains: affective, behavioral, cognitive, and particularly metacognitive.[4] However, metaliteracy is not represented as a holistic model in and of itself. This is not unexpected, but what is presented provides an incomplete understanding of metaliteracy and its impact. This chapter will delve more deeply into those connections, using a visual representation to clarify how the components might be used in praxis. How might the broader vision of metaliteracy inform librarians' and disciplinary faculty members' understanding and use of the Framework?

LITERATURE REVIEW

Metaliteracy

The metaliteracy framework was originally defined as a *reframing* of information literacy in a digital world that was transformed by Web 2.0, social media, and online communities.[5] Metaliteracy addressed the proliferation of different literacy types, from media literacy to visual literacy, by envisioning a comprehensive and unifying approach to learning through the lens of information literacy. It extended and conceptualized information literacy as a pedagogical model beyond skills development for searching and retrieving information to producing and sharing information in a connected social media environment. This approach was informed by several influences in theory and practice, including the SCONUL Seven Pillars Model developed by the Society of College, National and University Libraries in the United Kingdom. Although still a primarily skills-based model, SCONUL presented competencies in an interconnected way and argued for "the ability to synthesize and build upon existing information, contributing to the creation of new knowledge."[6] The idea of moving information literacy beyond just skills development was supported by James W. Marcum, who argued that we needed more of an emphasis on "learning rather than information, and sociotechnical fluency rather than literacy," which required a much broader conception of the term.[7]

In the first article that introduced metaliteracy, "Reframing Information Literacy as a Metaliteracy," Mackey and Jacobson argued that "metaliteracy expands the scope of information literacy as more than a set of discrete skills, challenging us to rethink information literacy as active knowledge production and distribution in collaborative online communities."[8] As part of this initial conception of the model, information literacy was envisioned *as* a metaliteracy, and the emphasis was placed on reimagining information

literacy to include the collaborative production of new knowledge that is shared across multiple social platforms and open learning environments. Ultimately, information literacy and metaliteracy continued to evolve as distinct frameworks, but the ideas have been interrelated from the start.

As metaliteracy developed further in the book *Metaliteracy: Reinventing Information Literacy to Empower Learners*, Mackey and Jacobson identified the *meta* in *metaliteracy* through the Greek origins of the prefix, which invokes "change" as well as something that happens "after" or "beyond."[9] This theoretical expansion of the definition added to the original conceptualization of the term and situated metaliteracy in relation to both literacy and information literacy. Mackey and Jacobson argued that "while literacy is focused on reading and writing, and information literacy has strongly emphasized search and retrieval, metaliteracy is about what happens beyond these abilities to promote the collaborative production and sharing of information."[10] Further, the *meta* in *metaliteracy* expands the connection to metacognition as well. This is especially important to the development of the model since "metaliteracy also includes a metacognitive component and openness to format and mode that is less pronounced in information literacy."[11]

Metaliteracy continued to advance as a learner-centered model with a unique set of goals and learning objectives that were informed by four domains of learning, including metacognitive, cognitive, behavioral, and affective.[12] This approach emphasized the development of the metaliterate learner, who embodied these four domains and was prepared to play a range of empowering roles, such as producer, participant, communicator, translator, author, teacher, and researcher.[13] This was an important shift from applying information competencies to envisioning the metaliterate learner and what was needed to prepare individuals to be effective in these interrelated roles. The metacognitive domain of metaliterate learning was especially emphasized to develop and reinforce reflective thinking and empowered learning.

As metaliteracy developed as a pedagogical model, it was applied to the concerns of the post-truth world in the book *Metaliterate Learning for the Post-truth World*.[14] The framing chapter for this volume introduces the fully developed metaliterate learner characteristics in which "these essential attributes reinforce the four domains of metaliteracy (behavioral, cognitive, affective, metacognitive) and underpin the metaliteracy goals and learning objectives."[15] As part of this application of metaliteracy to the challenges of the post-truth world, the goals and learning objectives were also revised to further emphasize the evaluation of both individual and content bias, the ethical considerations of intellectual property, the responsibilities of information production and preparing oneself for pursuing lifelong learning goals. This revision was purposefully aligned with the four domains of metaliterate learning and the introduction of the characteristics of metaliterate learning.[16]

As the theory of metaliteracy expanded, the ideas were put into practice through several projects developed by the Metaliteracy Learning Collaborative, a team of educators at the University at Albany and SUNY Empire State College led by Mackey and Jacobson. This work included several massive open online courses (MOOCs) and a competency-based digital badging system, as well as learning objects and open resources available

at the Metaliteracy.org blog. In addition, Trudi Jacobson led a team of faculty librarians at the University at Albany to develop *The Information Literacy User's Guide: An Open, Online Textbook* that was informed by metaliteracy and has been downloaded over 30,000 times through this open format.[17]

The ACRL Framework

Metaliteracy and the Association of College and Research Libraries (ACRL) *Framework for Information Literacy for Higher Education* both emerged from an interest in redefining a new approach to information literacy that recognized a transformed information environment. This realization inspired novel approaches to information literacy that went far beyond the outdated *Information Literacy Competency Standards for Higher Education*.[18] In addition, each approach more accurately reflected pedagogical practice in the field and the educational potential of a reconceptualization. The structure and overall concept of the ACRL Framework suggested "a cluster of interconnected core concepts, with flexible options for implementation, rather than …a set of standards or learning outcomes, or any prescriptive enumeration of skills."[19] This was a striking contrast to the extensive list of standards and competencies offered by the original *Information Literacy Competency Standards for Higher Education*.

Metaliteracy influenced the ACRL Framework, but the overall organization of the document and thematic emphasis were informed by threshold concepts as described by Meyer, Land, and Baillie.[20] In their discussion of threshold concepts, Meyer, Land, and Baillie argue, "There are certain concepts, or certain learning experiences, which resemble passing through a portal, from which a new perspective opens up, allowing things formerly not perceived to come into view."[21] This approach created a *transformational* opening to learning through some kind of gateway that is much more conceptual than fixed standards or competencies.[22] The ACRL Framework does not include a visual model of this approach, which may limit the conceptual understanding and relatability of the concepts. Practitioners in the field have developed ways to represent the information to highlight key concepts, but this work has not led to a fully realized visualization of the ACRL Framework.

Metaliteracy and Metacognition

The ACRL Framework is similar to the metaliteracy framework because standardized competencies have been replaced by open-ended conceptual structures based on key information and research themes. Both models are similarly decentered to create openings for educators and learners to apply the thematic ideas in a wide range of information environments and across multiple disciplines. The acknowledgment of an affective aspect of learning in the dispositions outlined in the ACRL Framework is similar to the way metaliteracy looks at the entire person through the lens of the four learning domains.[23] Both models move beyond skills-based behavioral activity by addressing a broader approach to learning that supports how people engage with information and each other within complex information environments.

The Information Literacy Standards had emphasized the behavioral and cognitive learning domains, and the need was recognized, in the development of both metaliteracy and the Framework, for a more inclusive vision, adding both the metacognitive and affective learning domains. Gibson and Jacobson expressed this need in a piece written in 2014, during the development of the Framework:

> The process [of moving to enhanced understanding of information literacy threshold concepts] is not solely a cognitive one, but also affective and metacognitive. Learners need to recognize that their own information behaviors can be improved. This may be an uncomfortable or unfamiliar process that they need to monitor regularly. They must also think about their own thinking, checking in to assess if they are being open to and inclined to use new methods, rather than reverting to more familiar behaviors.[24]

The revised definition of information literacy in the ACRL Framework also reflects aspects of metaliteracy:

> Information literacy is 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.[25]

Similar to metaliteracy, this revised definition of information literacy recognizes the integration of multiple competencies that include a reflective, or metacognitive dimension. This recasting of information literacy moves beyond the search-and-retrieval emphasis of the earlier definition and, as with metaliteracy, recognizes the critical importance of the active creation of information as a content and knowledge producer. It also advances the idea of being a responsible contributor to participatory communities and social environments.

At the same time, while these key concepts are embedded in the revised definition, the ACRL Framework does not fully expand upon metacognitive reflection in the same way that metaliteracy has. As part of his original discussion of metacognition, Flavell argued that individuals encounter situations that "provide many opportunities for thoughts and feelings about your own thinking to arise and, in many cases, call for the kind of quality control that metacognitive experiences can help supply."[26] This critical point addresses two key aspects of metacognition that are especially relevant to both information literacy and metaliteracy. First, metacognition is a reflective activity sparked by a variety of everyday situations, and second, it has a self-regulating dimension that empowers individuals to take control of their learning. As Flavell envisioned, metacognition "could someday be parlayed into a method of teaching children (and adults) to make wise and thoughtful life decisions as well as to comprehend and learn better in formal educational settings."[27] Flavell's work is especially relevant today as we

design pedagogical theories and practices to encourage learners to be reflective and purposeful in information environments while taking charge of their learning in these spaces.

Metaliteracy influenced the content of the ACRL Framework, but the metacognitive dimension that is critical for metaliterate learning was not as prominent as it could have been by the time the document was ultimately written and presented. According to Fulkerson, Ariew, and Jacobson, there was interest in expanding the metacognitive component during the drafting of the Framework, but this key aspect was not fully addressed in the published version.[28] As a result, the authors "contend that the diminution of metacognition and metaliteracy in subsequent drafts resulted in a diminishment of the Framework's usefulness as a teaching tool."[29] They make a strong case for why metacognition should be integrated into information literacy, because "without reflection learners will neither change to see themselves as empowered learners with authoritative voices, nor will they be conscious of their own attitudes."[30] By diminishing the influence of both metacognition and metaliteracy, the ACRL Framework does not entirely advance the benefits of reflective learning. In addition, the value of collaboration in participatory environments is another key competency that is also absent from the document. Fulkerson, Ariew, and Jacobson assert that now is the time to revisit the inclusion of both metaliteracy and metacognition in the ACRL Framework and to restore these themes as originally envisioned in the early drafts of the document.[31] In many ways, metaliteracy provides an anchor or focal point for the Framework that extends beyond influence to include a means for envisioning and enacting the frames.

While the influence of metaliteracy was diminished in the final draft of the ACRL Framework, researchers and practitioners in the field pursue the relationship between information literacy and metaliteracy in theory and practice. For instance, in "Accommodating Faculty Requests and Staying True to Your Pedagogical Ideals in the One-Shot Information Literacy Session," Rachel Scott integrates the ACRL Framework with metaliteracy and metacognition. The author applied question-posing as a metacognitive strategy to transform a required one-shot library session into a participatory learning environment for learners that expanded their understanding of the platforms and information examined.[32] In "Teaching and Learning with Metaliterate LIS Professionals," Nicole A. Cooke and Rachel M. Magee argue that being information-literate or media-literate today is not enough because learners and educators need to expand their critical thinking beyond any particular literacy. The authors combine both metaliteracy and the ACRL Framework into their teaching practices to achieve their pedagogical goals.[33]

In her chapter "First, Teach Students to Be Wrong," Allison Hosier describes how she integrates both metaliteracy and the ACRL Framework in her teaching. She analyzes the learning goals of her freshman seminar course, Empowering Yourself as a User and Creator of Information, with the Metaliteracy Learning Goals and Objectives, selected knowledge practices from the ACRL Framework, and related course topics.[34] In "Exploring Metaliterate Learning through the Frames of Information Literacy," Thomas P. Mackey

explores metaliteracy and the ACRL Framework as complementary models that reinforce innovative learning design. The author describes the relationship between the Characteristics of Metaliterate Learning and the ACRL Framework's six frames of learning through the analysis of a final project developed for a massive open online course (MOOC), Empowering Yourself in a Post-Truth World.[35]

As demonstrated in these examples, the interrelationship between the ACRL Framework and metaliteracy plays out in a wide range of pedagogical practice, from one-shots to MOOCs. Visualizing the areas of convergence between both frameworks will illustrate the potential for using these concepts in tandem.

CONNECTING METALITERATE LEARNER CHARACTERISTICS AND INFORMATION LITERACY FRAMEWORK DISPOSITIONS

Metaliteracy is encapsulated in its core components—characteristics, learner roles, and learning domains—all connected through practice. The chapter authors thus had to determine which of these constructs would serve as the best foundation to make explicit connections between metaliteracy and the Framework. The metaliterate learner characteristics provide a core structure that allows for an explicit connection. As part of this analysis, a new graphic is presented in this chapter that illustrates the relationship between the existing metaliterate learner characteristics and the dispositions embedded in the ACRL Framework.

The Framework, too, has a variety of components to select from: the core descriptions of each frame, the understandings of experts and novices found within those descriptions, and the frame-based knowledge practices and dispositions. The descriptions of each frame and the illustrative selections of knowledge practices and dispositions are challenging to visualize. However, just as the learner characteristics encapsulate who a metaliterate individual is, so too do the suggested dispositions of an information-literate person. While dispositions may appear to be less encompassing than characteristics, they are at the heart of how an individual interacts with their surroundings and specifically the information environment. The absence of a visual representation of this core idea in the official ACRL Framework may prevent the full articulation of this key idea. Providing scaffolding for the dispositions makes it possible to move beyond simple laundry lists of traits. Metaliteracy provides that scaffolding. In the metaliteracy characteristics and information literacy dispositions figure (figure 9.1), each of the eight metaliterate learner characteristics (represented by the inner circles) is linked to congruent Framework dispositions (summarized in the outer boxes). Additional dispositions that might be identified—those in the Framework are not meant to be exhaustive—may also be considered in light of this model.

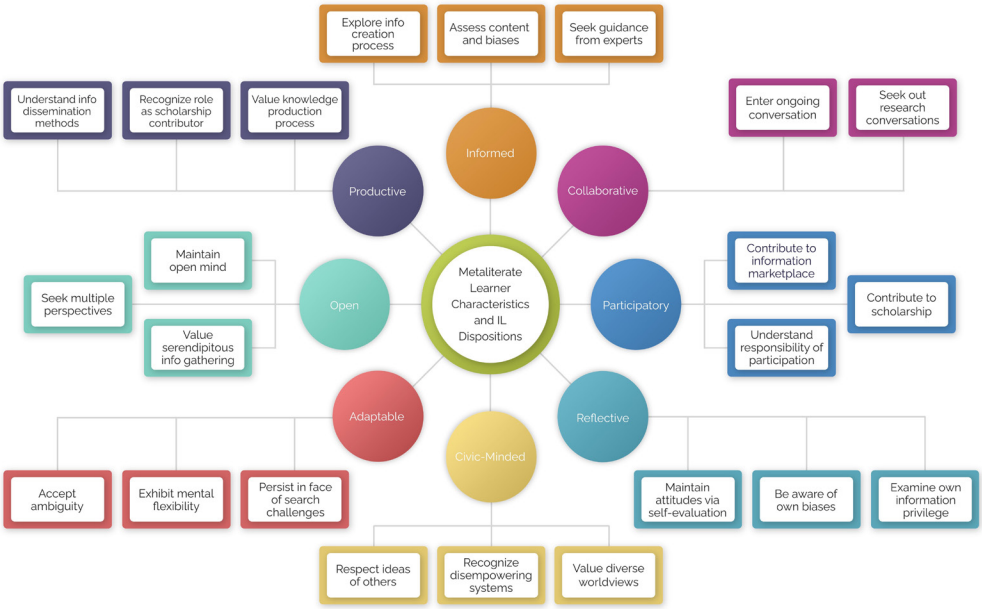

Figure 9.1
Metaliteracy characteristics and information literacy dispositions (See https://metaliteracy.org/ml-in-practice/mlacrl/ for the interactive version of this figure.)

This visualization of the characteristics of the metaliterate learner in relation to the dispositions of the ACRL *Framework for Information Literacy for Higher Education* illustrates the convergence of both models. This integrated and expanded figure demonstrates the areas for potential overlap as well as current gaps in congruence. The circular and flexible nature of the metaliteracy model, which has been applied to all of the metaliteracy diagrams to date, provides an open context for this mapping of ideas. The following sections examine the alignment of each of the metaliteracy characteristics with particular Framework dispositions,[36] ordered by the characteristics as they appear in figure 9.1, beginning with the top position and proceeding clockwise. While figure 9.1 includes the corresponding dispositions in shortened form, the following text and the interactive version of the figure (URL in the caption) provide the full wording of the dispositions.

Informed

Being an *informed* consumer of information is a vital aspect of metaliteracy that reinforces ongoing critical thinking related to how we research and analyze information. This characteristic in particular "traces back to the core information literacy principles that effectively differentiated between technology skills and broader information proficiencies."[37] This requires learners to ask critical questions about the origin of information, how accurate and reliable it is, and the extent to which it contains bias. The informed

characteristic supports all of the other metaliteracy attributes within a comprehensive framework and reinforces the value of producing information from the perspective of an informed consumer. Doing so encourages individuals to process, produce, and publish information that is accurate and verifiable.

The following Framework dispositions align with the informed characteristic:

- are inclined to seek out the characteristics of information products that indicate the underlying creation process [Information Creation]
- develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview [Authority]
- seek guidance from experts, such as librarians, researchers, and professionals. [Searching][38]

In addition to the dispositions listed above, there is another disposition that also relates to this characteristic:

- realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search [Searching][39]

The critical evaluation of information is the process that allows individuals to become informed. The information we assess today takes a wide variety of formats, arrives via different modes of transmission, and, of course, ranges in nature from evidence-based to opinion pieces. Absolute accuracy is not always possible to discern or even attain, but there are markers for accuracy based on expertise, evidence, and relevance. The informed characteristic and a number of the Framework dispositions emphasize the importance of valuing high-quality information and recognizing that this takes time and understanding, both of factors surrounding the information, such as its creation process, and of one's own needs.

The informed metaliteracy characteristic supports all the other metaliteracy attributes because it is core to critical thinking in today's information environment. Being informed impacts the creation of information, the quality of collaboration, and the level of engaged participation, including one's role as a citizen. Informed individuals possess the inclination to be adaptable to new technologies and information settings and to understand and value openness, all processes and competencies that require reflection. The Framework dispositions encompassed by metaliteracy's informed characteristic draw on three of the frames: Authority Is Constructed and Contextual, Information Creation as a Process, and Searching as Strategic Exploration.

The informed characteristic clearly encompasses the idea of evaluation, but as part of a thoughtful, nuanced process that is reflective as well. The dispositions express the idea that there is ambiguity in identifying the best quality information. For example, Authority Is Constructed and Contextual's "motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways"[40] recognizes that this is not a straightforward process.

To be informed takes sustained work and therefore time. The critical stance identified in a Research as Inquiry disposition must be internalized as a value so that individuals are willing to put in the necessary effort to achieve a particular research goal. In short, if one is not committed to the habits of mind that are necessary to be informed, one cannot

claim to be either metaliterate or information-literate. This requires a reflective process about one's thinking and learning that is especially advanced through metaliteracy.

Collaborative

Being *collaborative* is essential in today's social information environment and reinforces productive dialogue among all participants. From a metaliteracy perspective, "The metaliterate learner is actively engaged in professional, personal, and collegial partnerships that include like-minded viewpoints but also support diverse perspectives that expand and challenge individual preconceptions or beliefs."[41] This requires individuals to extend beyond their own familiar communities to engage with people who have unique perspectives and viewpoints. Metaliterate learners work together to create knowledge communities that are cooperative, participatory, and informed.

The following Framework dispositions align with the collaborative characteristic:

- recognize they are often entering into an ongoing scholarly conversation and not a finished conversation [Scholarship]
- seek out conversations taking place in their research area [Scholarship][42]

Collaboration is a key feature of metaliteracy, as illustrated by the originating visual featured in the first metaliteracy MOOC, in which it intersects across defining metaliteracy elements.[43] A refined version of this figure also appeared in the first metaliteracy book, and by that time collaboration was visualized as a key outcome of metaliteracy.[44] This emphasis on collaboration distinguished metaliteracy from the information literacy standards of the time, which largely cast information-related skills as individual undertakings. The increasingly participatory and dynamic environments in which information circulates, develops, and evolves requires that individuals not only know how to retrieve and synthesize information for their own purposes, but also how to responsibly exchange, share, and cocreate information in these spaces.

The Framework acknowledges this shift in information creation processes with a revised definition of information literacy that includes "participating ethically in communities of learning."[45] Not surprisingly, the collaborative characteristic is most evident in the Scholarship as Conversation frame. This frame emphasizes that knowledge creation is an ongoing and cooperative process undertaken by communities of scholars, researchers, and learners who contribute their varied perspectives and interpretations. These interactions can take place in various venues, both formal and informal. By recognizing the connections and overlaps between scholarly conversations and interactions that take place in social media and online communities, students may be able to better grasp the inherently collaborative nature of information production and likewise recognize their own roles and responsibilities as contributing participants in these spaces.

Participatory

The *participatory* characteristic recognizes the interactive and social dimension of information environments and is closely related to being collaborative in these spaces. Participation involves interaction with individuals in cooperative community settings and social

media environments. As part of this ongoing process, "individuals are free to express themselves online but must also consider the public responsibilities that accompany the production and sharing of creative works."[46] Metaliterate learners create new knowledge by working closely with individuals and groups in a wide range of social settings that are often mediated by technology. They build collaborative and participatory communities that take responsibility for the information that is published through media.

The following Framework dispositions align with the participatory characteristic:

- see themselves as contributors to the information marketplace rather than only consumers of it [Information Has Value]
- see themselves as contributors to scholarship rather than only consumers of it [Scholarship]
- understand the responsibility that comes with entering the conversation through participatory channels [Scholarship][47]

This shift in the role of the learner from passive information consumer to active participant and contributor in information environments is a key concept for both metaliteracy and the Framework. The rapid production and distribution of information (and misinformation) through social media environments require that learners not only understand the nature of information production and sharing but also recognize their responsibilities as participants in these dynamic environments.

Metaliteracy encourages learners to take on active roles in their own learning and in the production of new knowledge. The participatory characteristic encompasses critical and collaborative engagement with information in a variety of formats. The original reframing of information literacy as a metaliteracy asserted that "information-literate individuals acquire the ability to understand information using different forms of technology.… This constitutes a practice of critical engagement with one's world as active and participatory learners."[48] By actively engaging in the information creation process, learners are more likely to develop a stronger understanding and appreciation of the value of all different types of information.

The Information Has Value and Scholarship as Conversation frames articulate both the empowerment and the responsibilities associated with participation in information environments. In online spaces in which information circulates freely, it's critical that learners not only understand copyright laws, but also actually develop a deeper appreciation for the original information and ideas of others. At the same time, open access resources, interactive technologies, and collaborative tools such as Creative Commons provide learners with opportunities to have a significant impact by sharing their contributions and building on the creations of others. Leveraging appropriate technologies and responsibly engaging in online communities empowers learners to share their unique perspectives and develop a richer worldview.

Reflective

The *reflective* characteristic reinforces the metacognitive dimension of metaliteracy and is embedded in the metaliteracy goals and learning objectives.[49] This characteristic advances Flavell's assertion that metacognition is both reflective and self-regulating.[50]

From a metaliteracy perspective, the reflective characteristic "fosters thinking about one's own thinking and the self-regulation of one's own literacy and learning."[51] Metaliterate learners play an empowering role in reflecting on what they already know and where they need to expand their knowledge areas. Being reflective supports the ability to take charge of one's own learning and also to become more aware of how individuals develop as metaliterate learners.

The following Framework dispositions align with the reflective characteristic:

- develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview [Authority]
- are conscious that maintaining these attitudes and actions requires frequent self-evaluation [Authority]
- are inclined to examine their own information privilege [Information Has Value][52]

While the following dispositions are not included in the visualization, they do address elements of reflection found in two additional frames, Research as Inquiry and Searching as Scholarly Exploration:

- seek appropriate help when needed [Research]
- demonstrate intellectual humility (i.e., recognize their own intellectual or experiential limitations) [Research]
- seek guidance from experts, such as librarians, researchers, and professionals [Searching]
- persist in the face of search challenges, and know when they have enough information to complete the task [Searching][53]

The reflective characteristic aligns with the metacognitive learning domain that is a vital component of metaliteracy. Reflecting on and regulating one's own learning is a necessary precondition to all of the metaliterate learner characteristics. Metacognition is noted specifically as having influenced the content of the Framework, as it is "crucial to becoming more self-directed in [the] rapidly changing ecosystem."[54]

Dispositions connected to metacognition, or the reflective characteristic, are found in four of the six frames. The metaliteracy characteristic considers "the role of thinking about one's own thinking and self-regulating one's own learning" for overarching, lifelong learning.[55] The dispositions found in the Framework are both all-encompassing and more focused on a particular frame. They range from knowing when to seek help (Research as Inquiry, Searching as Strategic Exploration), recognizing one's own limitations and biases (Authority Is Constructed and Contextual, Research as Inquiry), and needing self-evaluation and persistence (Authority Is Constructed and Contextual, Searching as Strategic Exploration).

Civic-Minded

The *civic-minded* characteristic is essential for effective participation in social settings because it emphasizes the responsibilities of being a part of any community. Being civic-minded "requires civic responsibility and a focus on the public interest" that "must extend to social media environments and online communities that depend upon community-based accountability."[56] This characteristic reinforces the idea that joining a community

is not enough and also requires purposeful civic engagement as a responsible contributor and participant. Doing so relies on related characteristics such as being reflective about one's engagement with social communities, open to new perspectives, collaborative with others, and participatory in a shared space.

The following Framework dispositions align with the civic-minded characteristic:

- respect the original ideas of others [Information Has Value]
- recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage [Scholarship]
- question traditional notions of granting authority and recognize the value of diverse ideas and worldviews [Authority][57]

Being civic-minded prepares individuals to make valuable and purposeful contributions to communities as individuals and in collaboration with others. This quality reinforces the potential value and impact of both formal and informal participation because everyone is encouraged to play an active role in building community. This characteristic emphasizes the responsibility of being an information producer and participant since all members of the community depend upon the contributions made by everyone.

The civic-minded characteristic is similar to aspects of the Framework's Information Has Value, Scholarship as Conversation, and Authority Is Constructed and Contextual frames. The disposition "respect the original ideas of others" is situated within the Information Has Value frame, which supports several dimensions of information "as a means of negotiating and understanding the world."[58] This approach provides a way to understand information and related responsibilities, such as access, copyright, and attribution within a real-world social context. Rather than looking at information as something to be searched for and retrieved, it is also understood as a means for content creation and communication.

The civic-minded characteristic is reinforced through the disposition "recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage." This disposition supports the Scholarship as Conversation frame, which advances research as a scholarly dialogue among participants. Doing so requires responsible and civic engagement within participatory environments that are both formal and informal. Aspects of the civic-minded characteristic can be found in the disposition "question traditional notions of granting authority and recognize the value of diverse ideas and worldviews," which is part of the Authority Is Constructed and Contextual frame. This frame supports the role that experts play in society and the importance of communities to provide context for how authority is understood. These are concepts that are supported through a civic-minded approach to information production and participation.

Adaptable

Being *adaptable* prepares individuals for flexible learning environments and emerging technologies that continuously change and evolve. The adaptable characteristic supports the ability "to be responsible and flexible to new ways of learning and knowing, including

approaches mediated by technology."[59] Metaliterate learners are empowered to effectively apply technologies for content creation and participation, while being aware of personal privacy and information security. They are also reflective about their technology adoption and use. They think carefully about the role technology plays in our society and the impact it may have on what they create and how they communicate.

The following Framework dispositions align with the adaptable characteristic:

- accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes [Information Creation]
- exhibit mental flexibility and creativity [Searching]
- persist in the face of search challenges, and know when they have enough information to complete the information task [Searching][60]

The constantly evolving information landscape requires that learners not only have an understanding of current information technologies, but also be able to adapt as new technologies and formats emerge. Metaliteracy promotes the adaptable characteristic as an essential component of lifelong learning. Metaliterate learners are open to change, willing to learn and try new things, and able to reassess and adjust by reflecting on personal learning strategies, strengths, and areas that need improvement.

The adaptable characteristic is encompassed in the Information Creation and Searching frames. Adaptability is a valuable asset during the search process, which typically requires an iterative approach when selecting keywords and attempting various search strategies. The *exploration* component of the Searching as Strategic Exploration frame promotes the idea that learners should embark on a search task with an open mind and embrace the nonlinear path that research typically entails. Learners who exhibit the dispositions in this frame are open to new discoveries while using a variety of information sources and strategies to reassess original goals and needs as understanding develops.

Metaliterate learners exhibit adaptability as both consumers and creators of information. The included Information Creation disposition emphasizes the need for learners to make their own judgments on the value of a particular source of information while considering the potential impact of its format and mode of delivery, rather than automatically ranking certain formats above others. Metaliteracy takes this concept further by encouraging learners to consider the impact of format and mode when *creating* information, taking into account the adaptations that may be required to translate information for diverse audiences.

Open

The *open* characteristic supports transparent teaching and learning in a wide range of social communities. Consider the importance of "being open to new ideas, insights and perspectives" in divisive or contested social environments because this characteristic "allows individuals to think beyond their own biases that might limit their learning experiences."[61] This approach prepares individuals to have empathy in social spaces and to gain a deeper understanding of individuals and groups that may have different perspectives from their own. Metaliterate learners openly create and share knowledge by working collaboratively with others as both teachers and learners. This characteristic

expands upon the original metaliteracy reference to open educational resources (OERs) by considering openness itself as a quality that a metaliterate learner possesses, and not just a document type.

The following Framework dispositions align with the open characteristic:

- develop and maintain an open mind when encountering varied and sometimes conflicting perspectives [Authority]
- seek multiple perspectives during information gathering and assessment [Research]
- recognize the value of browsing and other serendipitous methods of information gathering [Searching][62]

While the following dispositions are not included in the visualization, they do address two more elements of openness, one found in Research as Inquiry, and the other pulling in the Scholarship as Conversation frame:

- maintain an open mind and a critical stance [Research]
- suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood [Scholarship][63]

The open characteristic encompasses participation in communities, as a learner, a teacher, and an information creator and sharer. It recognizes the importance of being open to new ideas, insights, and perspectives that are contributed by others in person or by online community members. In today's highly polarized society, being open is critical to the discourse needed to find common ground and to move on to the possibility of new insights informed by multiple perspectives.

Relevant dispositions come from three of the frames: Authority, Research, and Scholarship. The first of these dispositions is considered through the lens of authority. It specifically mentions "developing and maintaining an open mind when encountering varied and sometimes conflicting perspectives." Research as Inquiry's "maintaining an open mind" mirrors the same disposition found in Authority Is Constructed and Contextual, while Scholarship as Conversation includes a disposition relating specifically to assessing scholarship only once one is situated in the appropriate scholarly conversation.

Being open to diverse perspectives, ideas, people, and communities enriches and informs learners. This openness extends to considering oneself and others, who may not have official credentials, as teachers, while acknowledging the value of their information contributions. This quality reinforces civil discourse because all perspectives are considered and valued. Being open also means situating oneself in a conversation or information exchange, be it scholarly or not, to become familiar with the particulars before making judgments. Openness can be seen as a characteristic that provides scaffolding for six dispositions across three frames that have several different emphases.

Productive

The *productive* characteristic is key to metaliteracy because it supports the foundational idea that learners are producers of information. This aspect "reinforces being a creative producer of original and repurposed content, both individually and in collaboration with others."[64] As a transformative quality, being productive means that learners are not just passive consumers of information but also active producers who understand the way that

information is created and shared. Information in this context is a form of communication that tells a meaningful story in creative, informed, and reflective ways.

The following Framework dispositions align with the productive characteristic:

- understand that different methods of information dissemination with different purposes are available for their use [Information Creation]
- see themselves as contributors to scholarship rather than only consumers of it [Scholarship]
- value the skills, time, and effort needed to produce knowledge [Information Has Value][65]

The productive characteristic of metaliteracy is reinforced by the Information Creation as a Process and the Information Has Value frames. The disposition "understand that different methods of information dissemination with different purposes are available for their use" (Information Creation) demonstrates a significant shift in how information literacy is understood as a means for creating and producing and not just an entity for accessing and retrieving. This is a critical recasting of information because it defines this process as an iterative one that involves research as a core activity for the creation and revision of content that is then shared as an outcome of this work.

Metaliteracy's *productive* characteristic also aligns with the dispositions "see themselves as contributors to scholarship rather than only consumers of it" from the Scholarship as Conversation frame and "value the skills, time, and effort needed to produce knowledge," as part of the larger Information Has Value frame. Both dispositions support active creators of content and contributors to information environments who understand the value of information as producers and not just consumers. This particular frame expands the scope of information itself as more than a commodity and instead as a way to better understand our world. Doing so involves an understanding of intellectual property and the contributions made by experts in our society.

Overall, the characteristics of the metaliterate learner align well with the six frames of information literacy and related knowledge practices and dispositions. This sampling of potential overlap in theory can be strengthened and realized through everyday practice.

APPENDIX AND TABLES

The appendix and tables 9.1 and 9.2 summarize the information captured in figure 9.1 and the analyses of the eight characteristics above. The appendix, arranged by metaliterate characteristic, provides the complete wording of the aligned dispositions and identifies the originating frame.

The tables, one arranged by metaliteracy characteristic and the other by frame, provide illuminating snapshots of the relationship between the two literacy models. Table 9.1 shows that two of the eight characteristics—reflective and open—are associated with four frames and three—informed, civic-minded, and productive—are aligned with three frames. The collaborative characteristic, however, aligns only with Scholarship as Conversation. The Framework's introduction states that it was influenced by metacognition in particular. This is to some extent borne out by the links between disposition and characteristic,

which indicate that four frames include reflective dispositions: Authority Is Constructed and Contextual, Information Has Value, Research as Inquiry, and Searching as Strategic Exploration. However, the small total number of dispositions (7 out of the 38 in the *Framework*) connected with the reflective learning domain show the influence was limited.[66]

Table 9.2, which uses frame as the organizing principle, clearly shows that dispositions connected to Research as Inquiry have little overlap with the metaliterate characteristics. While it is aligned with only two characteristics, reflective and open, two of the other five frames are connected to four characteristics, and two—Scholarship as Conversation and Searching as Strategic Exploration—are connected to five of the eight characteristics. We explore these connections and distinctions further in the discussion section that follows.

Table 9.1
Overlap of information literacy disposition frames with metaliterate learner characteristics

Metaliteracy Learner Characteristics	Framework Frames
Informed	Authority, Information Creation, Searching
Collaborative	Scholarship
Participatory	Information Has Value, Scholarship
Reflective	Authority, Information Has Value, Research, Searching
Civic-Minded	Authority, Information Has Value, Scholarship
Adaptable	Information Creation, Searching
Open	Authority, Research, Scholarship, Searching
Productive	Information Creation, Information Has Value, Scholarship

Table 9.2
Frame dispositions aligned with metaliterate learner characteristics

Framework Frames	Metaliteracy Learner Characteristics
Authority Is Constructed and Contextual	Civic-Minded, Informed, Open, Reflective
Information Creation as a Process	Adaptable, Informed, Productive
Information Has Value	Civic-Minded, Participatory, Productive, Reflective
Research as Inquiry	Open, Reflective
Scholarship as Conversation	Civic-Minded, Collaborative, Open, Participatory, Productive
Searching as Strategic Exploration	Adaptable, Informed, Open, Reflective

DISCUSSION

In our analysis of which dispositions align with which characteristics of the metaliterate learner, we found that there is a clear connection between the metaliteracy and information literacy models. There are several examples of dispositions that are required to show evidence of having that characteristic. Metaliteracy provides a scaffolding that moves the dispositions from elements of conceptual understandings about information, research, and scholarship into components of lifelong learning and lifelong engagement with information.

By using metaliteracy's characteristics as an organizing principle, the resulting visual (figure 9.1) ties together dispositions across frames, providing a new lens through which to understand and use the Framework. Similarly, this approach provides an opening or pathway to apply metaliteracy from a Framework perspective, to enhance those ideas and even fill in gaps that may not be fully realized in the document. Providing scaffolding for the dispositions makes it possible to move beyond simple laundry lists of traits. When teaching learners the core concepts of the six frames, metaliteracy is an organically connected, broadly conceived overlay that highlights concrete personal lifelong learning elements.

The confluence of characteristics and dispositions strengthens the argument that activities and assessments based on checklists or standards are inadequate. For example, being informed means evaluating information based on factors relevant to a specific situation, and that situation may not conform to generalized criteria. Sources of information are myriad and evolving, and to be informed is to understand the potential complexity of the information environment while also assessing relevant but possibly conflicting sources. The dispositions highlight the ambiguity of identifying the most effective information for a particular purpose. For example, Authority Is Constructed and Contextual's "motivate themselves to find authoritative sources" highlights the nonlinear path that assessing authority may take. Such models as the CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose) Test do not adequately address the issues encompassed by this *informed*-related cluster of dispositions.[67]

When identifying dispositions that align with the characteristics, the authors found that the metaliteracy qualities were especially action-focused, whereas many of the dispositions, while not entirely passive, were less product-focused. For example, one of the dispositions connected to the productive characteristic is "see themselves as contributors to scholarship rather than only consumers of it," rather than something such as "contributes to scholarship." However, there is a knowledge practice that begins "contribute to scholarly conversation at an appropriate level." This is true for a number of items captured in the figure and indicates that, ideally, both dispositions and knowledge practices would be positioned to capture each characteristic more fully. In other words, the dispositions alone do not entirely capture what are in the characteristics, but if joined by some of the knowledge practices, they would include more of the learner as producer aspect, rather than just trying to prepare individuals to produce. However, the complexity of such a visualization would be daunting, both to create and to process.

While there are clear connections and overlaps between the characteristics and dispositions, the visualization also identifies distinctions between the metaliteracy and information literacy models. Notably, the *collaborative* characteristic in the figure includes only two related dispositions that come from the Scholarship as Conversation frame. These dispositions assert that information-literate learners seek out and enter into scholarly conversations and that they recognize the value of their own contributions and the contributions of others. However, they stop short of describing the *cocreation* of knowledge that is envisioned by metaliteracy. Multiple frames emphasize shared interactions and conversations (e.g., Information Creation's "accept that the creation of information may begin initially through communicating in a range of formats or modes" and Research as Inquiry's "seek multiple perspectives during information gathering and assessment"). Yet they do not fully articulate the joint endeavors and productions that are enabled by social media and online communities. Collaboration is defined as "the action of working with someone to produce something."[68] While the dispositions describe shared dialogue and interaction in information communities, the Framework needs a much stronger emphasis on the collaborative production of information that takes place in these social environments. This emphasis is embedded in the metaliteracy model and would provide a worthwhile point of overlap between both approaches.

CONCLUSION

This chapter explores the relationships between two prominent frameworks that seek to prepare learners as participants and contributors to the current information landscape. By illustrating the connections between the metaliterate learner characteristics and the ACRL Framework dispositions, the authors hope to define areas of overlap and facilitate the development of these vital competencies in today's learners.

While both the ACRL Framework and the metaliteracy framework are comprehensive models, the clarity of each benefits from this convergence of ideas in theory and practice. Academic librarians look to the Framework for guidance in their information literacy instruction but may not have a complete road map for how to practically teach these complex concepts. Additionally, since the ACRL Framework is intended to impact all of higher education and metaliteracy is an open model, disciplinary faculty and academic administrators should be a part of this conversation as well to make decisions about how best to prepare our learners for an ever-evolving information environment.

By better understanding the Framework's connections to the metaliteracy model from which it was partially derived, all stakeholders, including librarians, faculty, administrators, and learners, will gain a more practical grasp on its origins and underlying principles. The succinctness of the metaliteracy characteristics may help illuminate the core ideas behind the Framework dispositions that educators should aim to foster in their students. Likewise, for those seeking a deeper understanding of metaliteracy, the alignment between metaliterate learner characteristics and information literacy dispositions provides a useful visualization that highlights both the overlaps and distinctions between these two models.

As part of this conversation, we encourage our readers to consider the connections between metaliteracy and the Framework beyond the characteristics and dispositions analysis found in this chapter. Each model contains additional elements that may potentially be linked in ways that will enrich the understanding and application of both. This convergence between theory and practice, and between metaliteracy and the Framework, will unite our efforts to best serve our learners.

APPENDIX

FRAMEWORK DISPOSITIONS ORGANIZED BY METALITERACY CHARACTERISTICS

Framework Dispositions	Frame
Informed	
Develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview	Authority Is Constructed and Contextual
Are inclined to seek out characteristics of information products that indicate the underlying creation process	Information Creation as a Process
Realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search	Searching as Strategic Exploration
Seek guidance from experts, such as librarians, researchers, and professionals	Searching as Strategic Exploration
Collaborative	
Recognize they are often entering into an ongoing scholarly conversation and not a finished conversation	Scholarship as Conversation
Seek out conversations taking place in their research area	Scholarship as Conversation
Participatory	
See themselves as contributors to the information marketplace rather than only consumers of it	Information Has Value
See themselves as contributors to scholarship rather than only consumers of it	Scholarship as Conversation
Understand the responsibility that comes with entering the conversation through participatory channels	Scholarship as Conversation
Reflective	
Develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview	Authority Is Constructed and Contextual
Are conscious that maintaining these attitudes and actions requires frequent self-evaluation	Authority Is Constructed and Contextual
Are inclined to examine their own information privilege	Information Has Value
Seek appropriate help when needed	Research
Demonstrate intellectual humility (i.e., recognize their own intellectual or experiential limitations)	Research

Framework Dispositions	Frame
Seek guidance from experts, such as librarians, researchers, and professionals	Searching
Persist in the face of search challenges, and know when they have enough information to complete the task	Searching
Civic-Minded	
Question traditional notions of granting authority and recognize the value of diverse ideas and worldviews	Authority Is Constructed and Contextual
Respect the original ideas of others	Information Has Value
Recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage	Scholarship as Conversation
Adaptable	
Accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes	Information Creation as a Process
Exhibit mental flexibility and creativity	Searching as Strategic Exploration
Persist in the face of search challenges, and know when they have enough information to complete the information task	Searching as Strategic Exploration
Open	
Develop and maintain an open mind when encountering varied and sometimes conflicting perspectives	Authority
Maintain an open mind and a critical stance	Research as Inquiry
Seek multiple perspectives during information gathering and assessment	Research as Inquiry
Suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood	Scholarship
Recognize the value of browsing and other serendipitous methods of information gathering	Searching as Strategic Exploration
Productive	
Understand that different methods of information dissemination with different purposes are available for their use	Information Creation as a Process
Value the skills, time, and effort needed to produce knowledge	Information Has Value
See themselves as contributors to scholarship rather than only consumers of it	Scholarship as Conversation

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