

# **METALITERACY**

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# **METALITERACY**

*Reinventing Information Literacy  
to Empower Learners*

**THOMAS P. MACKEY**  
and  
**TRUDI E. JACOBSON**

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This book is dedicated to all of our students who teach us, and to family, friends, and colleagues who expressed such great interest in this project as it moved forward.

—Tom Mackey and Trudi Jacobson

And to John, who spurs me forward.

—Trudi

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**Tom and Trudi**

## Foreword

THESE ARE EXCITING TIMES FOR INFORMATION LITERACY. World headlines are captured by news stories about accessing, misusing, and authenticating information. In November 2013 the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2013) voted in favour of a resolution on media and information literacy. For the first time there is an international policy document in which information literacy is explicitly the main focus. UNESCO member countries are encouraged to endorse this resolution at a national level: citizens can point to the resolution and demand of their governments “What are *you* doing about information literacy?” Indeed, as the authors of this book note in chapter 4, “the continued progression and transformation of information literacy is an international concern.” The time when information literacy could be seen as a quaint preoccupation of librarians is past.

Intellectual engagement with the concept of information literacy has also blossomed. Different schools of thought about information literacy are emerging: the sign of a vigorous, healthy subject field. There is a greater body of research literature and a growing number of completed doctoral studies. All over the world people are exploring what information literacy means, in

their country and culture, in the 21st century. The book you have before you provides a rich contribution to this intellectual debate.

As well as unfolding the thinking behind the metaliteracy model of information literacy, the authors provide a useful review of trends and theories that have contributed to the development of their model. It is also valuable to have examples of, and reflections on, practice.

The authors identify that they wish their model to be one which “allows lifelong learners to create meaning through an interactive and participatory social network” (chapter 1). In chapter 2, they note how, while social media could, in theory, empower everyone to create and interact, in fact the majority of people do not unlock social media’s full potential. They give detailed examples in the final two chapters of how incorporating a metaliteracy approach into teaching practice can help with this process.

I have put collaboration and reflection at the heart of my teaching and assessment of information literacy ever since Bill Johnston and I developed a credit-bearing information literacy course for business school students in the late 1990s (Webber & Johnston, 2000, p. 388). The central role of metacognition and collaboration in the metaliteracy model is important. As the authors say, it “allows us to move beyond rudimentary skills development and prepares students to dig deeper and assess their own learning” (chapter 1). Nowadays, in our fast-moving and competitive world, it is a disservice to learners to deny them the opportunity to reflect explicitly on their information literacy and learning. All citizens deserve teaching that empowers them to self-develop and adapt to change in technology, culture, and society.

Librarians and faculty also need to be lifelong learners. The authors note that development opportunities abound via social media and through channels such as the MOOC which the authors have facilitated. However, books such as this one still have an important place in our learning experience.

**Sheila A. Webber**

*Director of the Centre for  
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- Webber, Sheila, & Johnston, Bill. (2000). Conceptions of information literacy: New perspectives and implications. *Journal of Information Science*, 26(6), 381–397.

## Preface

THE IDEA FOR THIS BOOK EMERGED FROM AN ARTICLE WE PUBLISHED in *College & Research Libraries (C&RL)* in January 2011 titled “Reframing Information Literacy as a Metaliteracy.” A year earlier, we presented on metaliteracy at the Information Literacy Research Seminar as part of the Seventh International Conference on Conceptions of Library and Information Science (CoLIS) at University College London. Energized by the discussion at the conference, we developed the first outline for this book in between sessions. During the research seminar at CoLIS we talked with Sheila Webber and other participants about the metaliteracy framework. The article itself was first made available by *C&RL* as a preprint online and then as an essay within the openly available journal. The posting of the preprint made us aware of the interest in metaliteracy through blogs, tweets, and social bookmarking, illustrating how information moves circuitously through a decentralized social network. The issue of *C&RL* that included the final version of the essay was the first published in a freely available open format. This change by such a high-profile academic journal to an open publishing model suited the themes of the article very well and allowed it to circulate even further.

In the fall of 2011 we presented on metaliteracy in a massive open online course (MOOC) that was hosted by State University of New York (SUNY) Empire State College on creativity and multicultural communication. This was the first ever MOOC offered in the SUNY system and was developed by Betty Hurley-Dasgupta and Carol Yeager. Our contribution to the MOOC allowed us to be a part of an innovative new online format that combined open education with a range of emerging technologies, such as video conferencing, blogging, Twitter, and Facebook. The MOOC reached an international audience that included over 500 participants (Yeager, Hurley-Dasgupta, & Bliss, 2013). We also continued working on our courses, in person and online, thinking about how the metaliteracy framework informs practice.

We had several reasons for exploring a new way of thinking about information literacy and, in fact, redefining it to empower learners. In our own teaching, in the classroom and online, and through several edited book projects about faculty-librarian collaboration, we were keenly aware of the connections between information literacy and emerging technologies. The evolution of Web 2.0 and the revolution of social media and social networking required a fundamental shift in how to think about information literacy in the 21st century. Our own research and writing about information literacy has been informed by changes in technology and the relationships among the librarians, students, and faculty in social media. In addition, emerging literacies such as transliteracy, mobile literacy, and digital media literacy influenced our thinking that what we really needed, instead of yet another literacy type, was an overarching and unifying framework—a metaliteracy—for identifying a comprehensive model. Our first article on this topic and several presentations and conversations with peers and readers of the first essay inspired us to take this idea further with a full treatment in this manuscript.

Since we started writing this book, there have been several important developments, expanding the model and collaborating with others to extend its visibility and reach. A website, [Metaliteracy.org](http://Metaliteracy.org), was created to serve as a central information point. It includes a blog with posts about metaliteracy-related issues, an explanation of what metaliteracy is, an expanded set of learning objectives, and examples of how metaliteracy is being used in practice. True to the collaborative nature of metaliteracy, we encourage others to post examples, suggestions, and comments. We have adapted the learning objectives based on helpful feedback we have received from several people.

We also secured an Innovative Instruction Technology Grant from SUNY for 2012–2013 ([www.suny.edu/provost/iitg2012recipients.cfm](http://www.suny.edu/provost/iitg2012recipients.cfm)). The project was initially named Developing a SUNY-wide Transliteracy Learning Collaborative to Promote Information and Technology Collaboration, but shortly into our work, we realized that metaliteracy was the more appropriate model for the work of the learning collaborative. The co-principal investigators for the grant included faculty members, librarians, and technology experts.

Depending on the particular project, we were also able to call on an instructional design expert and a number of additional faculty members. The learning objectives found on [Metaliteracy.org](http://Metaliteracy.org) originated from the group's work. So too did a metaliteracy badging system and a SUNY intercampus conference in the Conversations in the Disciplines program, *Developing Metaliterate Learners: Transforming Literacy Across Disciplines*.

In fall 2013 we offered Metaliteracy MOOC (<http://metaliteracy.cdlprojects.com>), working with the same format originally designed by Betty Hurley-Dasgupta and Carol Yeager. Metaliteracy MOOC explored many of the key themes in this book and brought together colleagues from the Metaliteracy Learning Collaborative and scholars from around the world. Through this format, we united learners from the University at Albany and Empire State College, and the experience was entirely open to global participants interested in the metaliteracy model.

## BOOK ORGANIZATION

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This book is organized into seven interrelated chapters, providing a theoretical exploration of metaliteracy while grounding it in practice. The first part of the book delves into the theory of metaliteracy and the context in which it was developed. In the first chapter, we introduce metaliteracy through an examination of how the term has been used in other contexts. We also explore the prefix *meta* in relation to our use of the term and conduct a literature review that looks at metacognition, multiple intelligence theory, multiliteracies, multiple literacies, transliteracy, convergence, and multimodal literacy. We frame this discussion through a postmodern perspective and also describe the impact of Web 2.0 and how metaliteracy expands upon our traditional understanding of information literacy. The second chapter examines issues related to how the expansive, decentered social media environment challenges our established assumptions about information literacy. Chapter 3 examines the role of metaliteracy and information literacy in the context of the burgeoning number of literacies focused on technologies (mobile literacy, for example) and formats (such as visual literacy). Each of these literacies has essential elements that would presume associated learning objectives. Chapter 3 therefore concludes with a set of objectives within four primary metaliteracy learning goals. The fundamental changes in the information environment identified in the first three chapters are examined in the context of global information literacies in the fourth chapter, providing an international perspective supporting a metaliteracy framework.

In the second part of the book, we shift from theory to practice. Chapter 5 provides an analysis of findings from an international survey of instructional librarians who incorporate emerging technology in their teaching. This chapter

continues the global perspective established in Chapter 4 while grounding our metaliteracy structure in a quantitative and qualitative analysis of information literacy practices. The sixth chapter presents the first of two case studies, demonstrating that metaliteracy is more than a theoretical construct and has practical implications for today's information literacy instruction. This first case study examines the introduction of Web 2.0 tools in an information literacy course taught by a faculty librarian at a large research university and the development of a second course in order to focus in greater depth on the changing information environment. We close the book in Chapter 7 with a second case study that examines the use of social media tools in a course about digital storytelling to advance critical thinking and lifelong learning for online learners. This chapter illustrates the importance of metaliteracy approaches in an online course that does not necessarily require information literacy instruction but benefits from the integration of this comprehensive model.

## ADVANCING METALITERACY THROUGH PRACTICE

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In a social media age, the idea of developing discrete skills must be replaced by the formation of a comprehensive knowledge set, informed by multiple information sources through individual and collaborative practice. The 20th century saw the fixity of print and tangible documents in small and large collections evolve into online resources, open and online journals, and electronic books. These changes continue in the 21st century, but we have entered a new era defined by radical redefinitions of peer review, access, portability, sharing, and co-creation of new media documents. Today's libraries continue to play a central role in information literacy endeavors, reflecting the changes we have seen in emerging technology, and they are doing so through blended, online, mobile, and virtual modes, providing interactive access to digital materials and archives, electronic journals, e-books, and information commons. Librarians have embraced these technologies and interface with learners through blogs, microblogs, personal learning environments (PLEs), virtual spaces, and expansive social networks.

Without a common understanding about information literacy in these contexts, however, or how it relates to associated literacy formats, we end up with a fragmentation of discrete skills and disconnection among multiple literacies. Very often the development of a new technology sparks interest in learning related skills within educational and real-world contexts, but what are the overarching principles or characteristics to guide educators and learners? How does information literacy fit into this complex and fragmented conception of learning in open and social media spaces? What role does technology play in our understanding of literacy?

This book provides a theoretical and practical exploration of ideas, reinventing information literacy to empower learners. The theory is important to understanding the argument, but it is grounded in practice through useful examples that can be applied in multiple settings. Faculty, librarians, and instructional designers are already using emerging technologies and integrating social media into courses and programs. Our primary purpose with this book is to provide a *meta* perspective for this work and a way to think about information literacy today and in the future, building connections among related literacy types that support learner success. This metaliteracy model provides a way to frame information literacy efforts at your institution, offering a context for collaboration and the meaningful use of open and social resources to advance critical thinking, metacognitive learning, and empowerment.

#### REFERENCE

- Yaeger, Carol, Hurley-Dasgupta, Betty, & Bliss, Catherine A. (2013). cMOOCs and global learning: An authentic alternative. *Journal of Asynchronous Learning Networks*, 17(2), 133–147. <http://sloanconsortium.org/jaln/v17n2/cmooocs-and-global-learning-authentic-alternative>

# 1

## Developing a Metaliteracy Framework to Promote Metacognitive Learning

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**I**N THIS BOOK WE PRESENT A COMPREHENSIVE FRAMEWORK for information literacy that unifies related literacies to advance critical thinking and metacognitive learning. Metaliteracy builds on decades of information literacy theory and practice while recognizing the knowledge required for an expansive and interactive information environment. Today's lifelong learners communicate, create, and share information using a range of emerging technologies such as social networks, blogs, microblogs, wikis, mobile devices and apps, virtual worlds, online communities, cloud computing, and massive open online courses (MOOCs). Metaliteracy expands the scope of traditional information skills (determine, access, locate, understand, produce, and use information) to include the collaborative production and sharing of information in participatory digital environments (collaborate, participate, produce, and share). This approach requires an ongoing adaptation to emerging technologies and an understanding of the critical thinking and reflection required to engage in these spaces as producers, collaborators, and distributors. Metaliteracy is not about introducing yet another literacy format, but rather reinventing an existing one—information literacy—the

critical foundation literacy that informs many others while being flexible and adaptive enough to evolve and change over time.

This first chapter examines the metaliteracy framework and how we arrived at this expanded conception of information literacy. In the first section of this chapter, “Metaliteracy,” we provide an overview of the term and describe how it has been used in other settings. In the second section, “The *Meta* in Metaliteracy,” we provide a background on the prefix *meta* as it relates to this redefinition of information literacy. Then, in “Metacognition,” we outline a few key concepts related to this expansive and complex area of study and connect the term to our metaliteracy model, especially in relation to what it means to be a thoughtful metaliterate learner. The next section, “Toward a Metaliteracy Framework,” identifies significant trends in information literacy and multiple approaches to literacy. Each section of this first chapter leads to a discussion of “The Metaliteracy Model” that provides a visual representation of the overall concept and integrated elements.

## METALITERACY

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The use of the term *metaliteracy* suggests a way of thinking about one’s own literacy. To be metaliterate requires individuals to understand their existing literacy strengths and areas for improvement and make decisions about their learning. The ability to critically self-assess different competencies and to recognize one’s need for integrated literacies in today’s information environment is a metaliteracy. This metacognitive approach challenges a reliance on skills-based information literacy instruction and shifts the focus to knowledge acquisition in collaboration with others. The metaliterate individual has the capability to adapt to changing technologies and learning environments, while combining and understanding relationships among related literacies. This requires a high level of critical thinking and analysis about how we develop our self-conception of information literacy as metacognitive learners in open and social media environments.

The term *metaliteracy* has been applied previously in several different contexts and academic disciplines related to the study of literacy. According to Ingraham, Levy, and colleagues (2007), “when the focus is on interaction with information irrespective of medium, information literacy itself may be seen as a meta-literacy that in the net-worked environment embraces a range of other literacies” (p. 162). Although not fully developed as a comprehensive redefinition of information literacy, this assertion recognizes the all-encompassing potential of information literacy in relation to other literacies. Spitzer, Eisenberg, and Lowe (1998) argue that “visual literacy, media literacy, computer literacy, and network literacy” (pp. 23–26) are “implicit in information

literacy” (p. 13). The authors define a clear link among related literacies and acknowledge technology-mediated influences on information literacy. According to the *Encyclopedia of Library and Information Science* (Kent, Lancour, & Nasri, 2000), “the metaliteracy revolution” is part of a larger communications revolution that includes transformations in language, literacy, and telepresence” (p. 135). While this previous definition predates the rapid growth of social media, the impact of computer-mediated communications and hyper-text informs an understanding of metaliteracy based on significant changes in communications “in all possible forms—symbolic, oral, and telepresence” (p. 138). This recognition of multiple modes of communication through digital technologies is central to our definition as well, but with an added emphasis on social media.

In another example of metaliteracy terminology, Heather Lotherington (2004) argues that educators must consider the role of computer games on cognition and “how these sophisticated digital metaliteracies are increasingly required of contemporary communication” (p. 318). She also links metaliteracy to multiliteracies: “How children enact digital literacies and how they interweave modern and postmodern literacies requires a sophisticated organizing and orienting knowledge: a metaliteracy to access multiliteracies” (p. 312). Lotherington defines digital metaliteracies as “ways of entering the chaos of postmodern texts; ways of navigating digitized knowledge programmed into varying platforms” (p. 315). As we will see in this first chapter, Lotherington’s rationale for metaliteracy, and its relationship to multiliteracies, is similar to the argument we present because it is inspired by radical changes in digital technologies and communications. Our conception of metaliteracy, however, pushes the boundaries further by promoting a comprehensive reinvention of information literacy for revolutionary social media environments.

Jen Webb and Tony Schirato (2003) examine Pierre Bourdieu’s (Bourdieu, 1992; Bourdieu & Wacquant, 1992) conception of reflexivity as a form of metaliteracy. Webb and Schirato (2003) argue “reflexivity is best understood as a collective, rather than an individual process, and it is largely specific to those fields that have institutionalized, through the mechanisms of training and dialogue, a disposition for subjects to turn those mechanisms ‘against themselves’” (p. 551). Bourdieu (2000) originally stated, “By turning instruments of knowledge that they produce against themselves, and especially against the social universes in which they produce them,” individuals are prepared to escape “economic and social determinisms” (p. 121). According to this definition, reflexivity is a form of critical inquiry within a discipline that continuously reflects back on itself. Bourdieu (2000) provides a theoretical perspective that extends beyond the individual to a larger discipline. At the same time, Webb and Schirato (2003) assert that this reflexive approach to a field of study has implications for individuals as well because they are a part of

the larger collective and contribute to the conversation within a community (p. 551).

Bourdieu's work is relevant to metaliteracy because he asserts a critical social theory that challenges individual bias to consider the disciplinary and social contexts for intellectual thought and knowledge (Bourdieu & Wacquant, 1992, pp. 39–40). In the book *An Invitation to Reflexive Sociology* by Pierre Bourdieu and Loic J. D. Wacquant (1992), reflexivity “is cursorily defined as the inclusion of a theory of intellectual practice as an integral component and necessary condition of a critical theory of society” (p. 36). Based on this explanation, “its primary target is not the individual analyst but the *social and intellectual unconscious* embedded in analytic tools and operations” (p. 36). This approach emphasizes the social context of knowledge production. To further underscore this point, reflexivity is seen as “a collective enterprise rather than the burden of the lone academic” (p. 36). Ultimately, “reflexivity aims at increasing the scope and solidity of social scientific knowledge” (pp. 36–37). Although Bourdieu and Wacquant (1992) do not explicitly refer to metaliteracy in this particular work, the intellectual process they describe in the social sciences is a critical theory that emphasizes the importance of collective knowledge. This is a valuable perspective as today's social media environments are similarly focused on how we create and share knowledge within a common network. The individual is a key part of this process, but the social context helps shape the experience. Social media environments are socially constructed spaces that rely on the contributions of individuals to create meaning. Metaliteracy expands the scope of how to use these spaces as individuals and requires a critical perspective that reflects on the networked environment itself and how knowledge is produced and shared.

In *Understanding Bourdieu*, Webb, Schirato, and Danaher (2002) argue, “If literacy involves the capacity to read the situation and game from a particular perspective, metaliteracy involves the capacity to move strategically into different positions in one's reading of the situation and the game” (p. 143). This definition suggests a high level of critical awareness that requires an understanding of the diverse perspectives of others within a larger social environment (p. 143). The authors provide the example of a group of students working on a multimedia project. They describe a team of students with varying skill levels, such as the students who have the capacity for multimedia production techniques and those students who may not be as well versed in digital imaging but have an understanding of marketing (p. 143). According to the authors, “In each case, the students have *literacies*: but they will only develop *metaliteracy* to the extent that they are able to understand each other's areas of knowledge and respond to the different perspectives other people may bring to multimedia” (p. 143). In this example, metaliteracy emphasizes the social setting for multimedia production and not just the individual skills required to produce a technology project.

In a social media environment, the larger social context extends beyond the classroom to include a network of users and participants. The development of a social media project, and not just multimedia, requires another layer of understanding about communication and interaction across a vast network. Social media requires virtual collaboration that could take place from any location, at any time, and connects users with a wide range of skills and knowledge.

The concept of metaliteracy has also been explored in relation to how children read picture books (Arizpe & Styles, 2003) and as an expansion of critical information literacy in electronic environments (Kerka, 2000). In addition, metaliteracy has been described as a set of strategies for indigenous populations to counter traditional narratives and assumptions to participate in academic discourse (Gilmore & Smith, 2005). The term *metaliteracy* is found throughout the literature in varying contexts, although not as a fully developed expansion of how information literacy is envisioned.

The purpose of this book is to build on our previous work in this area to develop metaliteracy as a reinvention of information literacy. We see this approach as a comprehensive framework for open, online, mobile, and social media environments. In our preceding article on this topic, “Reframing Information Literacy as a Metaliteracy,” we argue:

Metaliteracy promotes critical thinking and collaboration in a digital age, providing a comprehensive framework to effectively participate in social media and online communities. It is a unified construct that supports the acquisition, production, and sharing of knowledge in collaborative on-line communities. Metaliteracy challenges traditional skills-based approaches to information literacy by recognizing related literacy types and incorporating emerging technologies. Standard definitions of information literacy are insufficient for the revolutionary social technologies currently prevalent online. (Mackey and Jacobson, 2011, pp. 62–63)

The primary goal of this reframing is to repurpose information literacy for the 21st century by identifying associations to relevant literacy types, such as visual literacy, digital literacy, mobile literacy, and media literacy. Our reason for using the term *metaliteracy* as part of this redefinition is to build on earlier information literacy research and practice while reconfiguring the term to reflect the dramatic changes in today’s social media environment. We also see this as a way to transcend any particular literacy and instead to focus on the overall knowledge required to critically engage in today’s networked settings. While many theories have emerged focusing on multiple literacies, and multiple intelligences, metaliteracy provides a core concept for revising information literacy to meet the pedagogical challenges of the social media age. Our goal is to recast information literacy to make it relevant in networked learning

environments and to provide examples in later chapters, through case studies, for how this can be done.

## THE *META* IN METALITERACY

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As part of this dynamic model, metaliteracy identifies inherent connections to related literacy types. The term *meta* traces back to the Greek origins of the prefix that has multiple meanings. According to *A Dictionary of Ecology*, the term is defined in this way: “The Greek *meta*, meaning ‘with’ or ‘after’, used as a prefix implying change and meaning ‘behind’, ‘after’, or ‘beyond’” (Allaby, 2011). For instance, the word *metamorphosis* from Greek mythology describes significant change or transformation and is applied in multiple disciplinary contexts in the arts and sciences (Mazzolini, 2003). The *Oxford English Dictionary (OED)* emphasizes similar meanings by defining the term as “denoting change, transformation, permutation, or substitution.” In addition, the *OED* states that the term *meta* is “prefixed to the name of a subject or discipline to denote another which deals with ulterior issues in the same field, or which raises questions about the nature of the original discipline and its methods, procedures, and assumptions.” This definition allows us to envision metaliteracy as a way to raise critical concerns about literacy and information literacy in a social media age. Metaliteracy is a form of critical inquiry that provides a way to question our basic assumptions about information literacy and how we have been teaching it. 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. Metaliteracy also includes a metacognitive component and openness to format and mode that is less pronounced in information literacy.

The prefix *meta* has also been used to explain key components of our complex Internet environment. For instance, a *Dictionary of the Internet* defines the term as “a prefix placed before a word in order to describe properties about the original word. For example a metafile is a file which contains data about files, metadata is data about data” (Ince, 2009). Similarly, the *OED* recognizes *meta* as a prefix “to technical terms to denote software, data, etc., which operate at a higher level of abstraction.” Our use of the word *metaliteracy* in this book describes a unifying construct that combines literacies while acknowledging fundamental changes in the information environment. Metaliteracy moves beyond traditional definitions of information literacy as an ordering of discrete skills to create a comprehensive framework that supports collaborative knowledge acquisition, which is ideal for learning in participatory social media settings.

The prefix *meta* also reflects a postmodern reinvention of information literacy. According to Roberts (2000), “At the most basic level, the word ‘post-modern’ suggests a period that comes after the modern” (p. 112). Postmodernism is a theoretical construct that emerged in the late 20th century and has been applied in the arts, literature, cultural studies, architecture, and philosophy to describe a break from the modern era. While modernism emphasized the notion of the artist or writer working in isolation on individual and ambitious expressions or narratives, postmodernism describes a shift to a multiplicity of ideas and styles that challenges linear narratives and historical assumptions. This is a useful perspective as we consider the nonlinear nature of information in today’s networked environments and the role of metaliteracy as a way to challenge some of our assumptions about information literacy as only skills based.

As Jean-François Lyotard (1984) asserts in *The Postmodern Condition: A Report on Knowledge*, “A work can become modern only if it is first post-modern. Postmodernism thus understood is not modernism at its end but in the nascent state, and this state is constant” (p. 79). Lyotard’s definition of postmodernism describes an end to a movement or period of time but also acknowledges the beginning of a new era. We have seen a similar shift in how we understand information, from discrete elements in print and paperbound journals that were previously accessed and retrieved through single or binary pathways to the creation and publishing of various forms of digital information in dispersed social environments. Lyotard argues that “knowledge is altered as societies enter what is known as the postindustrial age and cultures enter what is known as the postmodern age” (p. 3). We have seen the realization of this new era, defined by rapid technological change in computing, the Internet, the World Wide Web, and social media. As Lyotard states:

As for the second function, it is common knowledge that the miniaturization and commercialization of machines is already changing the way in which learning is acquired, classified, made available, and exploited. It is reasonable to suppose that the proliferation of information-processing machines is having, and will continue to have, as much of an effect on the circulation of learning as did advancements in human circulation (transportation systems) and later, in the circulation of sounds and visual images (the media). (p. 4)

The “miniaturization and commercialization of machines” is most evident in our various mobile devices for communicating, creating, and sharing information. For instance, the cell phone has morphed into a multipurpose smart device with a variety of applications, from gaming to texting to digital imaging, for both individual and collaborative use. In addition, our familiarity with the “information superhighway” in the 1990s identifies a similar parallel between

the expanse of transportation systems and the rapid emergence of digital information in various forms through the Internet and web (Andrews, 1993). This terminology is now outdated because the information superhighway has given way to a collaborative social network. Information in this decentered environment is fragmented and transient, requiring new approaches to literacy education. Technology itself is an ever changing and unpredictable part of this dynamic. As such, we must consider how emerging trends like social media influence our literacy archetypes and, for the purpose of this book, a metaliteracy model.

While modernism was primarily about the author and artist working on individual expressions, postmodernism defines a multiplicity of ideas and practices in decentered nonlinear environments. This postmodern vision has been demonstrated most recently in a hypertext web environment that offers the user numerous pathways and links in a collaborative network. The purpose of a metaliteracy is to identify relationships among literacies in a networked reality. Although we describe our metaliteracy model as an overarching framework, this is not intended to be a hierarchical theory but rather a comprehensive one that allows lifelong learners to create meaning through an interactive and participatory social network.

Lyotard (1984) critiques the “grand narratives” of the modern age and defines postmodernism as “incredulity toward metanarratives” (p. xxiv). He argues, “This incredulity is undoubtedly a product of progress in the sciences: but that progress in turn presupposes it” (p. xxiv). This is a theoretical challenge to many modern assumptions about technological progress and determinism that offers a new way to think about the development of knowledge in society. Our use of the prefix *meta* in metaliteracy is not intended to invoke yet another meta- or grand narrative but rather to acknowledge the fragmented and decentered nature of information in the postmodern age. Metaliteracy is a critical perspective that raises questions about our pedagogical assumptions and the linear ways we have been teaching information literacy. This approach combines disparate parts in a comprehensive and evolving structure but does so without creating yet another linear narrative about absolute knowledge or praxis. We expect the components of metaliteracy to change over time, as technologies and the needs of our learners vary, but we need a way to bridge cognate literacies and to incorporate the social dimension of today’s expansive learning network.

## METACOGNITION

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Metaliteracy is a conceptual model to unify cognate literacies and to expand the traditional definition of information literacy. This new approach places a stronger emphasis on social technology and emphasizes knowledge

acquisition instead of just skills development. In our original article on this topic we examined metaliteracy from a primarily library and information science (LIS) viewpoint. In this first chapter, we expand our initial argument beyond the field to include a metacognitive perspective with a particular focus on the groundbreaking work of John H. Flavell.

According to Thomas O. Nelson (1992), “*Metacognition* is defined as cognition about one’s own cognition” (p. 1). The use of the prefix *meta* suggests a high level understanding of one’s own knowledge and cognitive abilities. Nelson (1992) argues, “Metacognition is also closely related to the topic of *consciousness*, which has always been a central topic in philosophy, especially the philosophy of mind” (p. ix). Today’s interest in metacognition extends beyond the fields of philosophy and psychology to influence much broader disciplinary and interdisciplinary perspectives. In her book *Metacognition in Learning and Instruction: Theory, Research and Practice*, Hope J. Hartman (2002) argues that metacognition “is generally defined as cognition about cognition or thinking about one’s own thinking, including both the processes and the products” (p. xi). Hartman refers to Flavell’s research and identifies the impact of metacognition on “acquisition, comprehension, retention and application of what is learned, in addition to affecting learning efficiency, critical thinking, and problem solving” (p. xi). Information literacy instructors are similarly interested in how learners acquire, comprehend, retain, and apply what is learned about the information environment in an effective and efficient manner. In addition, both critical thinking and problem solving are essential learning outcomes of information literacy education. A metacognitive approach to information literacy builds on these elements and challenges us to prepare our students to think about their own learning. This is particularly relevant to how students self-assess their participation in highly social information environments. It also requires us to develop collaborative and interdisciplinary strategies for metacognitive learning opportunities that build on basic skills instruction. Further, this approach demands an effective assessment plan that incorporates metacognitive approaches in our learning design.

Metacognition has also been examined in literacy education, particularly related to reading and writing. Griffith and Ruan (2005) suggest that an emphasis on metacognition prepares independent and successful learners. They argue that “learners with high levels of metacognitive abilities are able to monitor and regulate their learning processes to accomplish the learning goals they set” (p. 16). This supports a process beyond skills development that prepares individuals to take control of their learning by gaining a deeper understanding of what is needed to set and achieve goals. This is the kind of empowerment we strive for in information literacy education, although the traditional emphasis on teaching discrete skills and the time constraints of one-shot library sessions (or other skills-based instructional modes) do not make this method possible. A metacognitive approach to information literacy

prepares learners to gain new insights about their own learning and shifts the focus from skills development to knowledge acquisition through deep reflection on the learning process itself.

In his landmark essay “Metacognition and Cognitive Monitoring: A New Area of Cognitive–Developmental Inquiry,” Flavell (1979) defines metacognition as “knowledge and cognition about cognitive phenomena” (p. 906). Flavell expands the description of cognition by adding a meta layer to the conceptualization of how we think and learn. Central to his theory is the idea that “cognitive monitoring” takes place in a wide range of activities, including “memory, comprehension, and other cognitive enterprises” (p. 906). As a part of this approach, Flavell identifies four interrelated dimensions of metacognition, including “(a) metacognitive knowledge, (b) metacognitive experiences, (c) goals (or tasks), and (d) actions (or strategies)” (p. 906). He defines “metacognitive knowledge” as “stored world knowledge that has to do with people as cognitive creatures and with their diverse cognitive tasks, goals, actions, and experiences” (p. 906). At its most basic level, this refers to knowledge gained and how individuals understand or perceive what they know. In addition, Flavell defines “metacognitive experiences” as “any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise” (p. 906). This is generally understood as the process of thinking about one’s knowledge and consciously making decisions or taking actions to enact or pursue further knowledge. As part of this interconnected framework, he argues, “Goals (or tasks) refer to the objectives of a cognitive enterprise. Actions (or strategies) refer to the cognitions or other behaviors employed to achieve them” (pp. 906–907). For the purposes of this chapter, we will focus specifically on metacognitive knowledge and metacognitive experience with the understanding that goals and strategies are related to this construct and necessarily emerge from our instructional practices.

Flavell (1979) offers several examples that could be easily applied in a range of settings today, although his work does not specifically address digital technologies or information literacies in relation to thinking and learning. The scenarios he describes are universal and transcend any particular learning environment. As an example of “metacognitive knowledge,” Flavell describes “a child’s acquired belief that unlike many of her friends, she is better at arithmetic than at spelling” (p. 906). In our own experience teaching information literacy, we relate this example to our observations as well.

For instance, we have observed students with similar self-assessments of their information competencies. Some learners believe they are stronger in searching the Internet than conducting research through library databases, and other learners believe they are better with technology than writing or research. In addition, what many of us see quite often are students who think they are very good web searchers, when actually they are not. We also know

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