Handbook of Writing, Literacies, and Education in Digital Cultures

Edited by
Kathy A. Mills
Amy Stornaiuolo
Anna Smith
Jessica Zacher Pandya

Introduction

Digital Diversity, Ideology, and the Politics of a Writing Revolution

Kathy A. Mills and Amy Stornaiuolo

Introduction

Digital Diversity, Ideology, and the Politics of a Writing Revolution

Kathy A. Mills and Amy Stornaiuolo

For writing and literacies researchers, the opening decades of the twenty-first century seem replete with possibilities, as emerging digital technologies facilitate expanded communicative repertoires and multiple forms of participation, collaboration, and civic engagement. These possibilities motivate three key agendas for writing and literacies research that inform this book. The first is the rapid and increased role of digital technologies that have become ubiquitous in daily life, in schools, in workplaces, and in every sphere of society. Such transformations have led to a groundswell of literacy research to help education keep pace with the changes to the digital communications environment, to ensure that schooling practices continue to be relevant in a world in which we cannot predict the technologies of tomorrow. Writing and literacy education is not simply an agenda of the past— of basic skills, of narrow curriculum, a means through which governments can create good citizens with functional literacies. Rather, literacies are central to education, to society, to human cognition, to human socialization, cultural identities, power relations, and to the very construction of social space.

The second transformation that literacy research must address is the ideological nature of language and literacies. Language is always ideological, located within broader structures of cultural, economic, and political power (Luke, Comber, & Grant, 2003). Writing and literacies research will have a central role in drawing attention to the ideological nature of literacy education. This underpins the political debates that currently circulate in relation to literacy standards in schools, in national literacy testing, and in pre-service teacher education programs. These debates have long existed, and the pressures of literacy achievement and school accountability are not likely to retrocede. Internationally, educational researchers must make a stand to expose the dominant Western or European colonizing powers that use narrow conceptions of skills-based, universal sets of literacy practices to oppress cultures and communities that are positioned marginally in education. Research on writing and literacies is needed to challenge the dominant ideologies in educational practice, in society, and in the media.

Third, and related to the second point, writing and literacies studies must critically account for the role of interrupting subordination of marginalized groups on the basis of race, language, culture, geographical location, class, gender, ability, religion, and national origin. Language is inextricably tied to culture and identity (see Chapter 9). Writing and literacies research needs to continue to address the increasing realities of local difference and global connectedness. It needs to guide educators to know how to respect cultural difference in local and global contexts, and to understand

the complexity of literacies against the multiplicity of identities, socio-material relations, textual practices, and labor markets that cross national, state, cultural, and linguistic boundaries. And not only this, we need also to envisage innovative and broadened understandings of the very constitution of literacies, to expand notions of semiotics to take account of the full role of the senses and the body in meaning making, and to challenge the ocularcentrism—the privileging of what is perceived through the eyes—that continues to underpin many conventional definitions of literacy. We need to recognize the diverse bodily ways of making meaning across different communities and social practices, understanding the techniques of the body and pursuing the education of the senses for communicating meaningfully for contemporary social purposes.

In considering the broad scope of these questions, we examine how the three agendas we detailed above can push forward new directions for writing and literacies scholarship even as they raise central challenges for educators and researchers. Each chapter of this book is aimed at theorizing writing and literacies in ways that move the field forward into the future of a world in which concepts, such as globalization, are increasingly inadequate to account for social actions that extend beyond the cosmos. How, for example, will rapid communication be configured for astronauts confined in spacecraft millions of miles away from earth in planned explorations to Mars? To what extent are the complex socio-material relations of communication across time and space changing as objects, digital devices, and voices become networked in the Internet of Things? How are digital childhoods reshaping the future world for babies and toddlers who already interact with an expanded array of digital toys, books, and cold (often slimy) glass screens? What are the implications of changes to writing and literacy pedagogies in schools that blend both old and new(ish) technologies of inscription? What is the role of media sharing platforms, such as YouTube and DeviantArt, in the construction of children and youth identities and futures? How are virtual and augmented reality technologies reshaping potentials for the orchestration of multiple senses in children's online practices? These and many other questions would not have been asked a decade ago. So, what has changed, what has not changed, and what is the role of culture in these transformations?

Writing and Cultures Past and Present: A Brief Background

In light of this rapidly evolving communicative landscape, a central task facing writing and literacies scholars involves understanding the recursive nature of the relationship between evolving communication technologies and literacy practices within and beyond schooling. While we may be tempted to characterize these digitally facilitated communicative practices as "new"—and certainly the ways many people use digital technologies to communicate in 2017 looks different to any decade prior—we must also acknowledge that people's writing and literacy practices are always being transformed over time and space in relation to the unfolding rhythms of social and cultural life.

People have always used new technologies to engage in the basic human need to communicate with others, particularly with those who are separated geographically beyond the reach of one's own voice. For example, picture postcards have been a social communication practice from the beginning of the twentieth century in Britain, when beautiful images were combined with a short message around the margins of the card. These were delivered within a few hours through a special rapid postal service that could be described as "near-synchronous" multimodal communication. This occurred a century before Instagram and Pinterest were invented (Gillen, 2016). As Gillen argues, people subverted the etiquette of epistolary writing to send sentiments to loved ones on picture postcards that were less private than the letter, while opening up greater spontaneity in written communication. Today, we still have the rapid consumption of printed books, greeting cards, food packaging, collectable cards, and burgeoning niche markets for stylized writing and stationery materials. Yet these texts exist alongside the growth of texts that are circulated by multinational technology

corporations, the Internet, telecommunications and media companies, and broadcasting systems. A primary aim of this volume is to examine how these shifts in people's literacies are tied to emergent social practices in digital cultures.

The focus on writing, on encoding and inscription, in the title of this volume is a response to the salience of textual design in Web 2.0 or "social web" environments and beyond (O'Reilly, 2005), where the ease of production and rapid circulation of texts has reached a greater level than ever before, instantiated by millions of images and sounds that are shared to a plethora of social media sites by groups of users of all ages (Mills, 2016). In comparison with earlier features of the Internet, Web 2.0 technology or the read-write web supports the sharing of music, videos, synchronous document editing, blogging, microblogging, online polls and surveys, wikis, and other collaborative forms of online text production and dissemination (Mills, 2010).

The idea of the public contributing to knowledge and textual production is much older than the invention of the Internet, or the idea of "participatory culture" by the Birmingham School of Cultural Studies (Jenkins, 2006b). Walter Benjamin entitled his 1934 essay "The Author as Producer," observing that media technologies such as newspapers, television, film, radio, and photography were blurring distinctions between authors and consumers. He argued half a century ago that "the conventional distinction between author and public that the press has maintained…is disappearing" (Benjamin, 1968, p. 83). Examples of the day included the way in which newspapers position letters and opinions from readers alongside the journal's editorials. Interestingly, Benjamin already maintained that authors should not only publish revolutionary content, but also aim to revolutionize the means through which texts are produced and circulated (Deodato, 2014). This volume examines how these revolutionary forms of production, participation, and circulation emerge and are practiced rhetorically in contemporary digital cultures.

Such a focus on how writing and literacies are practiced and transformed in relation to intersecting social, historical, political, and economic contexts makes central the notion of *culture*. By appending digital to the terms "writing" and "literacies" in the title, we signal the ways digital technologies influence and create cultural practices, particularly as they cut across traditional divides and facilitate different allegiances and connections. To theorize culture, we draw on Brian Street's (1993) conception of it as "an active process of meaning making and contest over definition" (p. 25). Street argues that understanding culture as a verb moves us away from more reified, static, and neocolonial definitions of culture as a "fixed inheritance of shared meanings" (p. 23). He maintains that traditional conceptions of culture, in addition to essentializing groups of people and disguising the active forms of semiosis involved, obscure the ways power operates in reinforcing racial and ethnocentric divisions. Instead of examining what culture *is*, Street suggests focusing on what it *does*. Such an emphasis on culturing as an active process of production (Chapter 22; cf. Lyons, 2010) draws attention to the ways people's literacy-making practices are rooted in collective histories. If, as Geertz (1973) suggests, culture is made from "webs of significance" that we collectively create through semiotic activity (p. 4), literacy researchers are well positioned to study how people's emergent social semiotic practices and digital cultures are co-constructed over time.

Looking Forward: Emerging Directions in Writing and Literacies Research

A book about digital practices runs the risk of becoming quickly dated in a constantly evolving communicative landscape; we sought to mitigate that possibility by highlighting enduring issues that we predict will only grow more prominent for writing and literacies researchers over time. Throughout the volume, readers will find the agendas we identified above taken up in significant ways. As the authors suggest innovative theoretical, methodological, and pedagogical directions for the field of writing and literacies research that take up the challenges of ubiquitous communication

technologies, questions of ideology in communicative practice, and the persistence of racism in digital cultures. We highlight here several theoretical contributions we found particularly generative for animating the field in important ways for years to come.

Emergence

As people connect across devices, platforms, spaces, and geographies at a scale and pace previously unimagined, a central question revolves around how people and things move, associate, and intersect across space and time. In other words, in light of the ways texts and people circulate in unpredictable fashion across global networks (Appadurai, 1996; Jenkins, Ford, & Green, 2013), how can writing and literacies scholars account for the ways meaning *emerges* from and in relation to the world? While multiliteracies research (New London Group, 1996) helpfully emphasized the patterned, designed aspects of literacy practices, it is equally important to attend to the more improvisational, idiosyncratic, and contingent dimensions of meaning making that are amplified in digital cultures (Stornaiuolo, Smith, & Phillips, 2017). One of the most important implications of an emergent perspective on literacy practices is an emphasis on the affective dimensions of literacies—their emotional, sensorial, and embodied nature (see Chapters 2, 10, and 11) as well as their aesthetic qualities (see Chapters 18 and 23). A focus on emergence also highlights the constraints to connecting, as algorithms, software, and corporate infrastructures all influence how texts flow and circulate in online spaces (Lynch, 2015). Moving forward, we anticipate significant scholarship will attend to how meaning emerges in these material-semiotic assemblages, including the rise of the Internet of Things, that can both enfranchise and marginalize individuals and groups in different measure.

These emergent dimensions of writing and literacy practices are often particularly challenging to identify and study, as they are always situated in and responsive to the interactional flow of people and materials in a given moment, fleeting and ephemeral. Look only to recent practices of using technologies to geolocate oneself for entertainment or navigation, including the use of wearable tech to collect personalized data and situate and re-situate the self in relation to unfolding activity in the world (see, for example, Chapters 12 and 16). Such practices suggest the need for new methodologies that take into account big and small data (see Chapter 19), and allow more fine-grained tracing of literacies across material/immaterial assemblages (see Chapter 15). Scholars might productively draw on interdisciplinary methods from fields such as the arts and human geography that are sensitive to the emergent ways people make meaning in and across spaces in response to other people, texts, and data.

Diversity

Decades ago, the New London Group (1996) identified the diversity of peoples and communicative forms as a central aspect of making meaning in a globally connected world, but in the years since then, issues of diversity and "superdiversity" have been at the center of theorizing the challenges of communicating across multiple cultural, national, and linguistic contexts (Blommaert, 2010; Canagarajah, 2012; see Chapter 5). Some of the most important contributions in this area have come from critical, postcolonial scholars who examine issues of power and oppression in how diversity is conceptualized (see Chapter 4). We see scholarship that pushes back on the ways nationalism and standardization continue to marginalize communities of color, an important avenue for writing and literacies scholars. The scholarship highlights perspectives that begin with assumptions of diversity as a resource and positions communities and individuals as knowledgeable (see Chapter 7) and as already cosmopolitan intellectuals with unique vantage points on the world (Campano & Ghiso, 2011). A number of scholars are exploring the role of digital media in contexts of forced migration and transnational rhetorical practice, both in maintaining

connections across borders and in imagining how to create equitable conditions in the face of inequitable and unjust treatment (see Chapter 8).

Some of the greatest challenges for writing and literacies researchers studying how diversity is imagined, practiced, and regulated across mobile, digital cultures revolve around issues of power and privilege, requiring not only critical but also ethical frameworks for theorizing diversity now (see Chapter 20). Scholars involved in anti-racist, coalition-building work with communities have explored how methodologies must endeavor to take better account of the ways power and privilege influence research design and participation (see Chapter 9). Many researchers interested in inter-sections of language and literacy in mobile contexts are attempting to attend to these complexities by working to privilege multiple languages and voices in more equitable and reflexive ways (see Chapters 13 and 17). We are heartened by scholarship that puts justice and equity at the forefront, positioning young people and their everyday experiences as central to understanding how commu-nity partnerships and activist practices can create more just contexts for writing and literacies (see Chapter 21).

Performativity

Over the past decade, the face-to-face "presentation of self in everyday life" (Goffman, 1959) plays out in new ways online, as users curate their digital selves through multiple and online profiles for different professional, familial, interest-driven, or peer-oriented virtual audiences, who may or may not ever meet face-to-face (see Chapter 14). The Internet has become the new stage, while Goffman's (1959) "back-stages"—the hidden or private places—are no longer very private, as users display im-ages of the meals they eat, their pregnant belly diaries, or details of reduced price underwear sales to their followers. The flip side is that social media sites, such as Facebook, also become sites of curating the self in plastic and sanitized ways that obscure the real pain and everyday realities of people's lives. Theorists such as Jenkins (2006a, p. 3) argued about the nature of "participatory culture" that can be facilitated through the web, when there are relatively low barriers, technical or otherwise, to artistic expression and civic engagement. Various concepts have been put forward to encapsu-late this mega production of texts, calling it "produsage" (Bruns, 2008), "designing" (New London Group, 1996), "Edutainment" (Buckingham, Scanlon, & Sefton-Green, 2001), or new technologies for "multimodal communication" (Jewitt, 2006). All of these frameworks recognize the centrality of performing the self online through rhetorical practice (see Chapter 3), with the attendant risks and opportunities for participating in visible ways in networked publics (boyd, 2011).

One of the most pressing questions for the future involves the uncertain implications of com-posing in public, with interactive audiences who not only collaborate in the production of texts but comment, critique, and circulate materials in impactful ways (see Chapter 1). Writing and litera-cies researchers are well positioned to ask about the identity politics of participating in these pub-lic writing and literacy practices, including possibilities for digital activism (Bonilla & Rosa, 2015; Stornaiuolo & Thomas, 2017) as well as the consequences of reinscribing and even magnifying op-pressive practices against already marginalized groups (Love & Bradley, 2013). With the technologi-cal means of production in the hands of the public, one could argue that "cultural hegemony"—the ideological "common sense" worldviews of society that were controlled by the ruling class, along with the means of material production (Gramsci, 1971)—has been eroded. Yet while the Internet has enabled more users to become co-creators of culture and public discourse, the extent to which users simply reproduce or alternatively resist dominant culture is always dynamic, shifting, and constantly contested (see Chapter 6).

What is now at stake in online participation is a loss of privacy that has become embedded in millions of digital footprints that can be traced by others. The production of writing on the Internet

is not so participatory that users can escape from power relations and online corporate surveillance. For example, in the participation of individuals in online markets, they become economic subjects associated with the commodification of privacy. Internet advertising servers and infomediaries are third parties that compile economic profiles of web users to classify and target consumers with ads that are tailored to their patterns of use (Campbell & Carlson, 2002). Digital footprints are ever-expanding, raising new questions about digital ethics, online surveillance, and the performance of identities. Future directions for scholarship in this area must include attention to the commodification of users, as online production increasingly translates into free labor for corporate interests and a new means of governmental surveillance and control. For scholars interested in examining how people's identities are shaped across digital cultures, there is great need for the development of critical and intersectional perspectives sensitive to the less visible and machine-driven dimensions of composing and creating digitally.

Conclusion

This chapter has outlined some key theoretical directions important for studying writing and literacies in digital cultures. In suggesting that emergence, diversity, and performativity represent promising directions for future scholarship, we hope also to illuminate new tensions and challenges that require writing and literacies scholars to build on previous scholarship while continuing to innovate theoretically and methodologically. We explore the themes and challenges discussed in the introduction across the five sections of the book, which are organized around central dimensions of writing and literacies scholarship in socially and linguistically heterogeneous contexts of global communication and education: digital futures, digital diversity, digital lives, digital spaces, and digital ethics.

Section I: Digital Futures articulates new perspectives concerning the ethical, sensorial, and critical elements of writing and literacies, and contemporary debates at the nexus of literacies and digital rhetoric that have direct relevance to the social construction of authorial identities for youth and other writers in education contexts. It outlines an ethically oriented approach to contemporary writing and literacies practices in a world in which privacy is often exchanged for participation. It provides a new perspective of the forgotten sensorial dimensions and role of the body in writing and literacy practices in the digital and non-digital contexts of use, with a particular focus on the education of touch or haptics in schooling. This book section also explores how multimodality, techne, and praxis emerge and resonate as youth write the self in relation to place, trope, and culture across new communicative platforms and in transmediated contexts. The section concludes with debates about the potentials and limitations of participatory politics in new spaces for writing and literacies, providing critiques of representation and collaborative design in contemporary ecologies and power relations.

Section II: Digital Diversity brings together the work of scholars from around the world to address issues of inclusion in contemporary writing and literacies research, from race to gender, and to the geographical displacement of refugees. Our approach to issues of social justice and diversity in this volume is that structural inequality in society is absolutely core to all writing and literacies research and should not be compartmentalized. It is the warp and woof of this volume woven throughout the handbook, but several issues are foregrounded explicitly in this section. Continual changes to the digital communications environment interplay with social inclusion and marginalize groups in complex ways that do not remain static over time, raising specific agendas of urgency. For example, how does the ongoing massive refugee displacement of this century intersect with digital inclusion? We can pursue research interventions with computer coding, 3D printing, and augmented reality goggles, but do we understand the real barriers to literacies and social inclusion for children and adolescents who live in contexts of abject poverty, violence, and the struggle for daily survival?

Section III: Digital Lives brings together leading scholars of digital practices to theorize the contemporary dimensions of everyday writing and literacies across the life course from digital childhoods to adolescence, including materiality, play and imagination, mobilities, global citizenship, and fan-based affinity practices. This section includes new ideas about the role of the material world in structuring thought, outlining promising pathways for future research on writing as material and embodied practice. It explores the relationships between global imaginaries, children's digital play, and innovative making in contemporary childhoods, seeing imagination and making as sites of collective cultural production that can both rupture and mobilize youth and materials. The fundamentally mobile and digital nature of techno-social practices is theorized in relation to people on the move, and the implications for literacies, education, recreation, and civic engagement. It explores how young people's involvement as global citizens creates intersections with digital media and literacy practices that carry baggage, often unexamined, but directly related to sociocultural, political, and economic contingencies. With the rise of fandoms, this section explores how the role of fan-based affinity spaces allow young adults to explore literacy practices related to reading, writing, reviewing, and designing in interest-driven spaces.

Section IV: Digital Spaces shifts the focus to social spaces that discursively shape, and which are shaped by, writing and literacies practices. From play in virtual worlds and sandbox games like Minecraft, to "metroliteracy" spaces of urban youth and to institutionally marginalized court-involved adolescents or trouble-makers, this section critically interweaves game theory and pedagogies of care, design, and social justice. For example, it demonstrates through research how virtual worlds provide opportunities for new kinds of interaction and new forms of textual practice, play, and learning. The chapters collectively provide a compelling argument to see the potentials of these everyday contexts of meaning making for children today. For example, the section explores the role of writing and literacies within a range of games, including first-person shooter games, alternate reality games, and online roleplaying games, interrogating new game theory concepts, from the "magic circle" to "gamification," and the implications for communities of practice and education. Later work in this section elaborates parallels between writing and literacies that become bound together through physical urban space as metrolingualism with social media practices, such as Facebooking, which similarly constitute the urban fabric. It theorizes the varied ways in which linguistic and cultural resources, spatial repertoires, and online activities are bound together to make meaning. The critique of art in digital texts, and how image-text relations position readers, then extends critical literacy to analyze artistic and design choices in digital composition. These authors bring knowledge of design principles of art to enable educators and students to interrogate their own and others' digital text production with a critical reading of the image. Finally, the complexities of "big data" in information-rich societies are cross-examined along with its potentials for education and assessment.

Section V: Digital Ethics debates current ethical concerns associated with the social and ethical risks of children and young people's access to information on the Internet. The earlier waves of euphoria and hype about the potentials of the Internet are becoming weaker, leaving the digital shore awash with contemporary questions about how students as citizens can live ethically and productively in globalized networked communications environments. This section critically interrogates the philosophical and educational questions about the relationships between ownership of information, profit, state control, and power, asking questions about how to induct students into responsibly exercising their rights to privacy, and to discern truth from fiction. Illustrating the ways in which young people put to use a range of digital composition technologies at hand, this section theorizes the nexus between social justice and the act of composing that works against oppression. It narrates young people's use of technologies for digital authoring toward fostering belonging. This is vital in the lives of court-involved youth, or for those who are undocumented, and who often experience

education as marginalizing. An ethical perspective of digital writing and literacies for an Indigenous community—American Indian Anishinaabe people—is also presented, acknowledging the need to approach digital production with care within textual ecologies of craftsmanship and composition. The book concludes by turning to concerns of aesthetics, which are no longer exclusive to the domain of poetry writing and art, but which are features of previously unembellished transactional texts of the digital age.

In sum, *Handbook of Writing, Literacies, and Education in Digital Cultures* reflects a major scholarly contribution by leading scholars in the field to re-envisage the future of writing and literacies research in compelling, dynamic, and critical ways. Our aim is to encourage scholars to think differently about writing and literacies research, questioning our familiar approaches to expand and critically explore our established imaginations of inscription in digital and diverse lives.

References

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. Minneapolis: University of Minnesota Press.

Benjamin, W. (1968). The work of art in the age of mechanical reproduction. In H. Arendt (Ed.), *Illuminations: Essays and reflections* (pp. 217–251). New York, NY: Schocken Books (Original work published 1936).

Blommaert, J. (2010). *The sociolinguistics of globalization*. Cambridge: Cambridge University Press.

Bonilla, Y., & Rosa, J. (2015). #Ferguson: Digital protest, hashtag ethnography, and the racial politics of social media in the United States. *American Ethnologist*, *42*(1), 4–17.

boyd, d. (2011). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *Networked self: Identity, community, and culture on social network sites* (pp. 38–57). New York, NY: Routledge.

Bruns, A. (2008). *Blogs, wikipedia, second life, and beyond: From production to produsage*. New York, NY: Peter Lang.

Buckingham, D., Scanlong, M., & Sefton-Green, J. (2001). Selling the digital dream: Marketing educational technology to teachers and parents. In A. Loveless & V. Ellis (Eds.), *ICT, pedagogy and the curriculum: Subject to change* (pp. 20–40). London, UK: Routledge.

Campano, G., & Ghiso, M. P. (2011). Immigrant students as cosmopolitan intellectuals. In S. A. Wolf, K. Coats, P. Enciso, & C. A. Jenkins (Eds.), *Handbook of research on children's and young adult literature* (pp. 164–176). New York, NY: Routledge.

Campbell, J. E., & Carlson, M. (2002). Panopticon.com: Online surveillance and the commodification of privacy. *Journal of Broadcasting & Electronic Media*, *46*(4), 586–606.

Canagarajah, S. (2012). *Translingual practice: Global Englishes and cosmopolitan relations*. New York, NY: Routledge.

Deodato, J. (2014). The patron as producer: Libraries, web 2.0, and participatory culture. *Journal of Documentation*, *70*(5), 734–758.

Geertz, C. (1973). *The interpretation of cultures*. London, UK: Fontana.

Gillen, J. (2016). *Antique Instagrams or Snapchats? Multimodal composition of early twentieth century British postcards*. Paper presented at the American Educational Research Association Annual Meeting 8–12 April 2016, Washington, DC.

Goffman, E. (1959). *The presentation of self in everyday life*. New York, NY: Doubleday.

Gramsci, A. (1971). *Selections from the prison notebooks* (Q. Hoare & G. N. Smith, Trans.). New York, NY: New York International Publishers.

Jenkins, H. (2006a). *Confronting the challenges of participatory culture: Media education for the 21st century*. Cambridge, MA: The MIT Press.

Jenkins, H. (2006b). *Convergence culture: Where old and new media collide*. New York, NY: New York University Press.

Jenkins, H., Ford, S., & Green, J. (2013). *Spreadable media: Creating value and meaning in a networked culture*. New York: New York University Press.

Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. Abingdon, UK: Routledge.

Love, B., & Bradley, R. (2013). Teaching Trayvon: Teaching about racism through public pedagogy, hip hop, black trauma, and social media. In J. L. Martin (Ed.), *Racial battle fatigue: Insights from the front lines of social justice advocacy* (pp. 255–268). Santa Barbara, CA: Praeger.

Luke, A., Comber, B., & Grant, H. (2003). Critical literacies and cultural studies. In M. Anstey & G. Bull (Eds.), *The Literacy Lexicon* (2nd ed., pp. 15–35). Frenchs Forest, NSW: Pearson, Prentice Hall.

Lynch, T. L. (2015). Where the machine stops: Software as reader and the rise of new literatures. *Research in the Teaching of English*, *49*(3), 297–304.

Lyons, S. R. (2010). *X-marks: Native signatures of assent*. Minneapolis: University of Minnesota Press.

Mills, K. A. (2010). A review of the digital turn in the new literacy studies. *Review of Educational Research*, *80*(2), 246–271.

Mills, K. A. (2016). *Literacy theories for the digital age: Social, critical, multimodal, spatial, material and sensory lenses*. New Perspectives in Language and Education. Bristol, UK: Multilingual Matters.

New London Group (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60–92.

O'Reilly, T. (2005). What is web 2.0? Design patterns and business models for the next generation of software. Retrieved May 30, 2016, from www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html.

Stornaiuolo, A., Smith, A., & Phillips, N. (2017). Theorizing a transliteracies framework for a connected world. *Journal of Literacy Research*, *49*(1), 68–91.

Stornaiuolo, A., & Thomas, E. E. (2017). Disrupting educational inequalities through youth digital activism. *Review of Research in Education*, *41*.

Street, B. V. (1993). Culture is a verb: Anthropological aspects of language and cultural process. In D. L. Gradoll, L. Thompson, & M. Byram (Eds.), *Language and culture: Papers from the annual meeting of the British Association of Applied Linguistics held at Trevelyan College, University of Durham* (pp. 24–44). Clevedon, UK: BAAL and Multilingual Matters.