

Profiles and Perspectives

Profile

Michele Knobel and Colin Lankshear

Discussing New Literacies

Editors' Note: *As the Language Arts editors considered how best to address the rapid technological and conceptual changes related to language arts education and new media, we returned again and again to the ideas and research of Colin Lankshear and Michele Knobel. Their research explores and analyzes youth practices with new media, and their vision of new literacies offers educators and researchers unprecedented pathways for thinking about texts, media, youth, and relations of power in the 21st century. The format for this article grew out of a set of questions posed to Colin and Michele via email.*

We asked them to:

- describe the ideas that have informed their thinking over the past decade;
- elaborate on their definition of new literacies;
- discuss tensions between new media experimentation and learning contexts;
- address the concerns adults and youth might have about the content and potentially predatory nature of online voices and images;
- and walk readers through an example of the social networking possibilities of meaning making with new media.

Their thoughtful explorations of these questions were adapted and excerpted for this profile.



IDEAS AND EXPERIENCES

We met in 1992, coming from very different backgrounds so far as literacy is concerned. Michele had worked as a primary school teacher; Colin had never taught in a school or even trained as a teacher. Michele had always been interested in what was then referred to in Australia as the "language arts," a field that, until the 1990s, had been framed mostly by psychological and cognitive theories of reading and writing. Her master's dissertation, written in 1992, built on reader response theory and the work of Lawrence Kohlberg and Carol Gilligan. Her schooling had surfed early waves of digital technology in Australia and included learning BASIC programming language in high school, as well as LOGO programming at teachers' college. Colin arrived at literacy via the

study of philosophy of language (through such scholars as Frege, Russell, Wittgenstein, Sustin) and through Paulo Freire's philosophy of culture, education and freedom. In the 1980s, he did fieldwork in Nicaragua following the Nicaraguan Literacy Crusade, while also reading early works in sociocultural studies of literacy, like Silvia Scribner and Michael Cole's *The Psychology of Literacy* (1981) and Brian Street's *Literacy in Theory and in Practice* (1984). This generated his first (coauthored) literacy book, *Literacy, Schooling, and Revolution* (1989), born at precisely the wrong time. It celebrated classic modernist radical and revolutionary initiatives in literacy at the very moment the world was officially abandoning left-wing modernism. He saw his first modem

in Nicaragua when British health researchers he was working with brought one to Managua to dial up England and exchange files related to a project investigating adult female literacy and infant morbidity.

Three key influences shaped our work through the 1990s. One was the sea change in people's working lives. A second was the explosion of new technologies, especially the Internet. The third was our meetings with Jim Gee, with whom we began to work collegially—initially around shared interests in the genre of “fast capitalist texts.” Jim, Colin, and Glynda Hull wrote *The New Work Order: Behind the Language of the New Capitalism* (1996). Michele's doctoral thesis drew strongly on Jim's work, notably on *Social Linguistics and Literacies: Ideology in Discourses* (1996). His D/discourse construction framed her investigation of four young adolescents and their literacy practices in and out of school, affording an analytic perspective that took into account ways of knowing, doing, and using language (Knobel, 1999).

The “cyberian” experience became paramount and brought our respective literacy trajectories together into a shared project that is ongoing. This project is partly academic and research-oriented, but is mainly an existential project. We were—and are—conscious of living at a defining moment in history—when massive changes occur routinely in technologies, institutional life, everyday social practices, and configurations that are often bundled together under the umbrella of “globalisation.” We wanted to understand these changes as deeply as we could.

We spent as much time as possible in the second half of the

1990s coming to grips with successive waves of innovation in computing and communications technologies—especially the Internet—and pondering how these waves of innovation were associated with trends in cultural practices, economic life, and global communications. We resorted to stealth to get ourselves online at home via the university (when commercial providers were expensive and unreliable) and then spent as much time as possible online. We often recall our first online forays using Lynx, a text-based Internet interface that predated graphic browsers, sensing that something seismic was underway as we accessed texts using online indices, downloaded files using FTP programs and Kermit protocols, participated in MUDs and MOOs, subscribed to email lists, and began telecommuting to work whenever we could. Coming to grips with these new developments also involved reading eclectically. We devoured academics who were theorizing patterns and trends from a sociological perspective and trade book authors writing about technology development and innovation, cyberculture, Gen X, pioneers of digital remix, and the like.

RESEARCH MOVES

Towards the second half of the 1990s, Michele was investigating young people's in-school and out-of-school literacy practices (cf. Knobel 1999), and Colin was spearheading a national project on new technology uses in schools (cf. Lankshear, C., Bigum, C., Durrant, C., Green, B., Honan, E., Morgan, W., 1997; Lankshear & Snyder with Green, 2000). Combining insights from both projects was a logical step, and our research interest in inves-

tigating children's and young people's literacy practices and uses of new digital technologies became a central motif in our collaborative research (cf. Lankshear & Knobel 1997a, 1997b). Our other work at the time also focused very much on critical literacy and pedagogy, and this, too, found its way into our growing focus on new technologies. Among other things, this convergence produced a book chapter written collaboratively with Michael Peters that was among the first works in education to focus on critical pedagogy and cyberspace (Lankshear, Peters, & Knobel, 1996).

In 1999, we moved to Mexico, and experienced firsthand the extent to which the Internet made it possible to live and work outside conventional academic settings while still remaining in touch with new developments within literacy education. It also saw us spending even more time online and documenting different practices we saw there, or participating ourselves (see our work in netgrrrl ☆ (12) & chicoboy21 ☆ (32), 2002 [our eBay aliases], though it may be easier to find under Knobel & Lankshear, 2002). We first spoke formally about “new literacies” as a distinct and important field warranting serious research attention during a conference organized by Jim Gee at the University of Wisconsin (see Lankshear and Knobel, 2000). A conference hosted by Donna Alvermann at the University of Georgia in January, 2001, provided another important forum for us to discuss with others new developments within everyday literacy practices (see Alvermann, 2002).

We consolidated our thinking about new literacies and new technologies in our 2003 book,

www

New Literacies: Changing Knowledge and Classroom Learning, and have continued this in the new edition of this book (2006).

WHAT DO WE MEAN BY NEW LITERACIES?

In the new edition of *New Literacies* (2006), we argue that what makes a literacy “new” has to do with two kinds of “stuff,” which we call “technical stuff” and “ethos stuff,” respectively. The more that a literacy is constituted by both new technical stuff and new ethos stuff, the more it can be considered a “new” literacy.

The new technical stuff is *digitality*. Paradigm or prototypical instances of new literacies involve the use of digital electronic apparatuses, like computers. Much of what is important for literacy about the new technical stuff has been neatly captured by Mary Kalantzis (Cope, Kalantzis, & Lankshear, 2005): “You click for ‘A’ and you click for ‘red.’” Basically, programmers write source code as binary code (combinations of 0s and 1s) that drives different kinds of applications (for text, sound, image, animation, communications functions, etc.) on digital-electronic apparatuses (computers, games hardware, CD and MP3 players, etc.). For networked computers, this means that anybody with access to a machine and an Internet connection, and who has fairly basic knowledge of standard software applications, can, say, create a multimodal text (such as a Photoshopped image posted to Flickr.com; an animated Valentine’s Day card; a short animated film sequence, complete with music soundtrack, using toys and objects found at home; a slide presentation of images of an

event that includes narrated commentary; remixed clips from a video game that spoof some aspect of popular culture or retell literary works) and send it to a person, group, or an entire Internet community in next to no time and at next to no cost. All this work is done using a strictly finite set of physical operations or techniques (keying, clicking, cropping, dragging) in a tiny space, with just one or two (albeit complex) “tools.”

The ethos stuff has to do with the kind of mindset informing a literacy practice. We distinguish between two broad mindsets that people use to understand and orient themselves toward the world. One mindset approaches the contemporary world as being much the same now as it has been in the past, only a bit more “technologized”—it has had digital technologies added to it, but is nonetheless to be understood and related to more or less as we have done for the past 200 to 300 years. This involves approaching the world from the standpoint of what may be called a “physical–industrial mindset” (Lankshear & Bigum, 1999, Lankshear & Knobel, 2006). The other mindset sees the world as having changed very significantly from how it was, necessitating a different approach from the one used in the past. This second mindset can be thought of as a kind of post-physical and post-industrial mindset. It recognizes cyberspace as a fact of the new world, to be taken into account along with the physical world, but believes that cyberspace operates on the basis of different assumptions and values from physical space. It also operates from very different procedural assumptions and values as those associated with a

“physical–industrial” orientation toward the world. Germane to this discussion is Negroponte’s well-known example of the hotel clerk who assessed the value of his laptop for insurance purposes at \$2000, conceiving it as “atoms,” whereas Negroponte assessed it at \$2 million, conceiving it as “bits” and evaluating the project proposals and concepts stored on the hard disk.

We cannot go into the difference between the two mindsets in detail here, but Table 1 below summarizes some key dimensions.

For us, new literacies are informed by the second mindset and reflect the kinds of assumptions and values that define this second mindset. They do not *have* to involve the use of digital-electronic apparatuses such as computers or the Internet, although they mostly do. They *must* however, be imbued with the second mindset. The key point here is that we see nothing especially new about doing the same familiar things in pretty much the same familiar ways, just with digital technologies (e.g., there’s not much new in retelling narratives by way of presentation software like PowerPoint). Rather, we think that the history of the contemporary world is a history that is moving more and more in the direction of the second mindset. The second mindset will not *displace* the first one because the world will always have its physical component and will need to be addressed as such. But we see an historical drift toward the second mindset, and believe that in time, more and more of what we do and how we “be” will reflect the working out of a dialectic, or productive, set of tensions between the mindsets. Hence, in the future, much of *what* literacies



| Mindset 1 | Mindset 2 |
|--|--|
| The world is much the same as before, only now it is more technologized, or technologized in more sophisticated ways. | The world is very different from before, largely as a result of the emergence and uptake of digital electronic inter-networked technologies. |
| The world is appropriately interpreted, understood, and responded to in broadly physical-industrial terms (e.g., truth values are considered paramount). | The world cannot adequately be interpreted, understood, and responded to in physical-industrial terms (e.g., "true/not true" is considered open to interpretation and reinvention). |
| <ul style="list-style-type: none"> • Value is a function of scarcity (e.g., diamonds) • An "industrial" view of production <ul style="list-style-type: none"> – Products as material artifacts (e.g., physical commodities) – A focus on infrastructure and production units (e.g., a firm or company) – Tools for producing (e.g., lathes, sewing machines) • Focus on individual intelligence (e.g., individual test scores as markers of knowledge/proficiency) • Expertise and authority "located" in individuals and institutions (e.g., university degrees, teaching certification) • Space as enclosed and purpose-specific (e.g., schools, grade levels, subject area boundaries in education) • Social relations of "bookspace"; a stable "textual order" | <ul style="list-style-type: none"> • Value is a function of dispersion (e.g., open source software development) • A "post-industrial" view of production <ul style="list-style-type: none"> – Products as enabling services (e.g., Google.com) – A focus on leverage and non-finite participation (e.g., the Internet) – Tools for mediating and relating (e.g., Flickr.com, MySpace.com) • Focus on collective intelligence (e.g., Wikipedia.org) • Expertise and authority are distributed and collective; hybrid experts (e.g., Citizen journalism blogs) • Space as open, continuous, and fluid (e.g., massive multiplayer online games) • Social relations of emerging "digital media space"; texts in change (e.g., fanfiction, machinima, and other remixing practices) |

Table 1. Some dimensions of variation between the two mindsets on knowledge production

will be and much of *how* literacies will be are going to reflect the working out in practice of this second mindset: the realization in practice of a very different kind of "ethos stuff" from the literate world of the physical-industrial order (i.e., bookspace).

Consequently, we see new literacies in terms of practices like fanfiction, fan manga, fan anime, weblogging, podcasting, Photo-shopping, "flickr-ing," "memeing," participating in "writing" collective works like *Wikipedia*, online gaming, and the like. This is because these are collaborative practices, involving distributed participation and collaboration, where rules and procedures are flexible and open to change, and so on. In terms of current jargon, there is a great deal about new literacies that is captured in the concept of "Web 2.0" as distinct from "Web 1.0," and in practices like "tagging" and their affiliation

with "folksonomies" rather than "taxonomies."

This means that new literacies are better understood in terms of an historical trend rather than in terms of technical specifics. The fact that email has been a large-scale practice for almost 20 years now does not make it an "old new literacy." Some emailing was *always* "old"—just "letters done on a new machine." When emailing became a truly collaborative practice, underpinning listservs and the like, *that* was new because that bespoke collaboration and participation on a scale and within a timeframe that was more or less impossible to achieve under older media. There is nothing interesting that is new about doing narrative recounts as Powerpoint presentations or as web pages: it's just the same old same old classroom practice in digital "drag." Likewise, there is not much of interest that is new in just using

the Internet as a huge reference book to be held hostage to familiar canons of credibility. That's not to say that subjecting Internet information to scrutiny is not *important*. It's just to say that it is not especially new in the terms we recognize. On the other hand, going nuts in terms of participating on Flickr by spending hours uploading photos, commenting on other people's photos, joining and contributing to special-interest groups, etc. has a lot of "new" about it, although it may not be especially "deep" in high-brow terms.

We think that for the foreseeable future, the people who are best equipped in literacy terms will be those who can draw appropriately from *both* mindsets and, moreover, who can move between conventional epistemologies and what we call "digital epistemologies" (Lankshear, Peters, & Knobel, 2000). In digital

epistemologies, the conventional epistemological emphasis on “truth” and “justified belief” will often be overshadowed by an emphasis on knowing how to gain or structure attention, how to make novel “moves,” or innovate successfully in contexts where there are few or no established rules and procedures, and how to break rules creatively or invent new rules and conventions.

TENSIONS OPERATING IN TEACHING AND LEARNING CONTEXTS

Something we wrestle with in our research and writing is the tension we and many other researchers observe between the facility and sensibilities many young people have with digital media and new literacies and the circumstances they often encounter within formal learning settings. This can be a tension for teachers as well, when they want to support and promote students’ agency but at the same time feel bound by curricular and reporting requirements that define *literacy* as encoding, decoding, and comprehension of conventional texts and *curriculum delivery* as an orderly progression through an official program of topics and tasks.

For example, within the traditional view of formal education, learning space is bordered by the classroom walls, lesson space by the 40- to 60-minute class period, and curriculum and timetable space by the grid of subjects to be covered and the time allocations assigned to them. Space tends to be strongly centered around the teacher and/or architectural features, like the chalkboard, electronic whiteboard, or the layout of computers or desks. Tasks tend to be singular and confined to a giv-

en time, during which all learners are doing the same task; not being on that task is seen as being disengaged from learning. By contrast, learners who have grown up “digital” often have a very different view and approach to learning. The very notion of dealing with one task at a time or operating in one “place” at a time when engaged in learning (or entertainment or recreation) is foreign to these students. Rather, “multitasking”—often extending to several simultaneous engagements—is the norm for digital youth.

The traditional view of learning as described above is not necessarily well adapted to classrooms. Kevin Leander and colleagues observed lessons in a school that was experimenting with mobile computing within a wireless environment. Not surprisingly, they witnessed students spending considerable time in class engaged in self-selected purposes: gaming, shopping, downloading music, emailing, chatting online, and instant messaging (IMing). For example, during one English class, Zoe moved between reading aloud passages from a Robert Frost poem at the behest of her teacher (using a book borrowed from a friend because Zoe had left hers at home), offering comments and interpretations in response to the teacher’s questions, all the while pulling up different friends’ blogs on her computer screen and reading, laughing, and responding to what she found there, as well as updating her own blog. Zoe remained engaged in the class at hand, but got on with doing other tasks as well. The project field notes (Leander, 2005) record a typical instance as follows:

Zoe opens her laptop and logs into the network. She accesses Xanga.com—a popular weblog hosting

service—and begins reading a weblog. The title of the weblog is, “Thank God I’m an Atheist,” and Zoe laughs while reading the latest entry on this blog.

The teacher asks, “Is there anybody who doesn’t understand imagery?” She walks close by Zoe, who quickly opens a blank Word document and keys in “Imagery” before flipping back to her web browser and reading a different weblog.

Teacher: “Who can describe an image from ‘After Apple Picking’ by Frost?”

Zoe keeps the weblog she was reading open on her laptop, but looks at Alana’s book and gives the first answer of the day: “In the first four lines you get an image of an apple in an apple tree.”

Teacher: “Good, a very realistic one. Read those lines again because they are interesting lines.”

The blog in front of Zoe reads: “There is nothing more foul than dissecting a fetal pig.”

Teacher: “Frost especially likes to use the seasons of the year.”

Zoe opens her own blog and begins working on an entry for that day.

Students who engaged most in pursuing self-selected purposes during class time did not believe they were learning less than they otherwise would as a result of this. Two claimed that being able to go to other places during time in class when they already knew about the matters under discussion alleviated boredom. Their capacity for multitasking seemingly

allowed them to maintain one eye on the task while going about other business.

Contrary to such self-appraisals on the part of students, however, some teachers in this school limited students' use of laptops to specific points in the lessons. Under current policy and reporting conditions, the teachers' imposition of "appropriate limits" does not constitute *unreasonable* behavior. Indeed, given the extent to which schools are under constant reporting surveillance and subject to the logic of "performativity" (Lyotard, 1984), this behavior could be considered necessary for self-preservation. We think, however, that at this historical juncture, it is an educationally inappropriate response. We make sense of and comment on such tensions by analyzing the two mindsets we have previously mentioned.

In formal and informal settings beyond the school, including workplaces, the capacity to multitask fluently is often highly valued and sometimes serves as a status marker. Effective multitasking is associated with greater efficiency, as well as with being digitally proficient. From the insider perspective (the second mindset), there is no conception of "disrespect" or of paying insufficient attention to a task if one is multitasking, whereas from the "one space—one task" perspective, such connotations often apply. The insider moves fluently between tasks, seeing them as equally important and viewing this more-or-less simultaneous online attention as efficient and advantageous. As workplace competition intensifies, efficient multitasking will undoubtedly become an important part of the competitive edge. In fact, it seems very likely that the social, cultural, and economic value and esteem asso-

ciated with multitasking will increase to the point of becoming the default mode. To this extent, responses like those of the teachers in Leander's study who limited possibilities for multitasking might well prove to be on the wrong side of history. So far as Zoe (and students like her) is concerned, it appears that even under conditions of extreme multitasking, she was able to provide at least as much attention to the tasks specifically associated with the official learning of the classroom to perform them adequately. That may well say something about formal classroom tasks, but it does not provide a basis for preemptive strikes against multitasking in class.

ISSUES CONCERNING PREDATORS, HYPERSEXUALISED IMAGERY, AND OTHER POTENTIAL DAMAGE ONLINE

Data collection is inevitably influenced by researcher standpoint. What does one see when one goes looking at young people's encounters with online content, other people online, and so on? Our interests are in young people's social and cultural practices online, and we investigate young people who seem to us to be interesting. What *we* find when *we* go looking are young people who are engaging in the pursuits we more or less expected, because we have chosen to research them on the basis of information we already have. These young people tend to be quite savvy about keeping themselves safe online. For example, we sought permission from a youngster to use some excerpts from her fanfiction, promising her a copy of the book in which it would appear when it was published. We said noth-

ing more and nothing less. Our informant said to stay in touch and something could be arranged, but she was not giving her address out on the Internet. Another participant in our fanfic research said she likes to include romance in her narratives, but not sex, because she wants to keep a "general audience" rating for her stories in order to reach as wide an audience as possible. Our colleagues who research young people tend to have much the same experience; their subjects are savvy young people who are more interested in designing their avatars than going after hypersexualised images for gaming; kids who value online role-play gaming because it teaches them "honor, courage and loyalty"; kids who know how to keep themselves safe online (cf. Leander, 2005; Thomas, 2005). So the images that we present of young people are the ones we think we can responsibly report; that is, the ones we encounter. And the ones we encounter are not a full spectrum sample—we don't claim they are. And we don't go looking for "negative" instances, either. Instead, we look for "constructive typicality."

On the other hand, many people have very strong interests in reporting other kinds of cases, whether they have witnessed them or not. Let's not mince words here: there are very powerful corporate forces emphasizing the risks and the potential aberrations involved with having young people spending a lot of time online. A lot of these interests, not surprisingly, are bound up with education and, especially, with schooling. Imagine the enormous challenge to curricular, social, and political authority in schools if creative and effective ways of integrating the Internet into young people's education suddenly appeared overnight, and

imagine the challenge to the many adults who need to believe that they know more than the students they teach.

This relates to what we think is a key educational issue around literacy. Like a lot of educational researchers and writers who have reasonably rich experiences with computing and communications technologies, we are distressed by the extent to which schooling has been reduced to the task of ensuring that all young people master “literacy,” narrowly defined as encoding and decoding alphabetic script for the purposes of accessing information (reliable, “true” information, of course). We think that this emphasis has a lot to do with the fact that the “core business” is now widely construed as “teaching and learning” rather than as “educating.” Teaching and learning, in our view, are compatible with grinding away at “literacy” in a very minimal sense. One of our young research participants exemplifies what is at stake here. “Rikku-chan” is an African American attending an urban public high school. At school, Rikku-chan receives low or failing grades for English. Online, she writes fanfic that draws on Greek and Roman myths as well as on different elements of contemporary popular culture. Her spelling and grammar and plot construction receive supportive attention from peers online. In other words, Rikku-chan gets her language education online, whereas at school, she gets “remediation”—this, in spite of her mother showing Rikku-chan’s fanfics to the English teacher.

Rikku-chan has not fallen prey to porn peddlers, pedophiles, password stealers, or identity thieves when she is online at home. This is not to say that she cannot, any more than the rest of us are immune to such things online. But

her mother, who is around and about when Rikku-chan is online, has chatted openly with Rikku-chan about the importance of not divulging too much about herself online and is certainly not keeping Rikku-chan from using the Internet. On the contrary, she grasps the importance of Rikku-chan having every opportunity for a full and rich online experience to the extent that she seeks it. This is how “netizens” approach the Internet. Are we going to stop buying books on Amazon.com or plane tickets to conferences on Expedia.com for fear that someone might steal our identities? Not likely. For Rikku-chan as much as for us, the Internet is the key portal for our ongoing *education*. Continuing to educate ourselves and evolve as human beings is definitely worth some risk. Rikku-chan’s mother keeps in touch with her interests. Michele and Colin do what they can to keep tabs on the credit card statements, on new scamming strategies, and on the reputation of sites and providers. This takes some work, some effort, and some responsibility, but it is integral to our ongoing education. Why wouldn’t we take these risks while at the same time taking care to educate ourselves about the nature of these risks and how to defend against them?

This is a positive orientation, an educational orientation, a labor-intensive orientation, and a “will to be more” orientation—with respect to ourselves and on behalf of others. We have found that people who emphasize negative images about the use of the Internet for in-class and at-home purposes are almost universally those whose personal experience with computing and communications technologies is limited. Conversely, those with rich online lives are aware of the risks and informed about how

to protect themselves and others. This, we suggest, constitutes an educational orientation. Although the finite group of people who tend toward the negative on this subject are not typically people we associate with strong investments in *education*, they do often have strong interests in maintaining schooling as a system of cautions and controls.

A LIGHT EDUCATIONAL WALK THROUGH A NEW LITERACY: MEMES

Among Internet insiders, “meme” (pronounced “meem”) is a popular term for the rapid uptake and spread of a particular idea presented as a written text, image, language “move,” or some other unit of cultural “stuff.” Memes are often defined as contagious patterns of cultural ideas, information, knowledge and/or values, etc. that are passed from mind to mind and directly shape and generate key actions and mindsets of a social group. Memes include popular tunes, catch-phrases, clothing fashions, architectural styles, ways of doing things, and so on. There is a technical science of memes—Memetics—that has built on seminal work by geneticist Richard Dawkins. Internet memes, however, opt out of this discourse. “Hatching” memes and participating in memes as a popular online pursuit is about “dropping” something into net-space that captures a lot of attention very fast, spreads rapidly by gathering recruits who “build” the meme, and lasts as long as it may. Some memes are quirky, even absurd. Others are serious. Some are hoaxes, others are constructive attempts to recruit people to worthy causes. Many are simply jokes.

Our own research interest has documented and analyzed success-

From Our
Bookshelves

Ursula Frankin's *The Real World of Technology* (1990); Donna Haraway's *Simians, Cyborgs, and Women: The Reinvention of Nature* (1991); Douglas Rushkoff's *Cyberia: Life in the Trenches of Hyperspace* (1994); *Media Virus!* (1995) and *Playing the Future: How Kids' Culture Can Teach Us to Thrive in an Age of Chaos* (1996); Sherry Turkle's *Life on the Screen: Identity in the Age of the Internet* (1995); Howard Rheingold's *The Virtual Community: Homesteading on the Electronic Frontier* (1995); Fred Moody's *I Sing the Body Electric: A Year with Microsoft on the Multimedia Frontier* (1995).

Manuel Castell's *The Rise of the Network Society* (1996); Katie Hafner and Matthew Lyons' *Where Wizards Stay Up Late* (1996); Nicholas Negroponte's *Being Digital* (1996); Allucquère Stone's *The War of Desire and Technology at the Close of the Mechanical Age* (1996); Ellen Ullman's *Close to the Machine* (1997); Neil Gershenfeld's *When Things Start to Think* (1999); David Bennahum's *Extra Life: Coming of Age in Cyberspace* (1999).

We also read a lot of cyberpunk and GenX novels and their savvy speculations on highly possible Internet-worked futures (e.g., William Gibson's *Neuromancer*, 1984; Bruce Sterling's *Islands in the Net*, 1989; Douglas Coupland's *Microserfs*, 1996).

sponse: within a very short time, her personal details and address were posted to the Internet and the woman was hounded publicly online and offline until she apologized. The power of this meme to mobilize public censure of this woman is patent. It has raised issues concerning the use of memes for redress and by what authority this is done. Participating in this meme by passing the woman's picture and personal details to

ful online memes of all kinds as a way of understanding an aspect of popular online culture that mobilizes considerable energy. A good example of an absurdist meme is the Lost Frog meme (c. 2004 and onwards). This alludes to a range of popular culture phenomena as it remixes the text of a flier for a lost pet named Hopkin Green Frog. The original flier was found posted along Seattle streets. A member of a popular image-sharing forum scanned the found text and uploaded it to the forum archive. Group members quickly picked up on the pathos and determination in the child's language (e.g., "If I looking for frog" and "P.S. I'll find my frog") and the hand-drawn images. They used image editing software to "photoshop" the original image, and the results—both by this group, and later, by others around the world—are always humorous and often touching. Collectively, they narrate massive, albeit fictional, citizen mobilization in the ongoing search for Hopkin Green Frog and include typical "missing persons" announcement vehicles (e.g., broadcast media news, milk cartons, road signs), crowd scenes seemingly devoted to spreading the news about the lost frog (e.g., "lost frog" banners at a street march and a crowded soccer match), and a host of other "remember Hopkin" scenarios (e.g., lost frog scratch-it lottery tickets, Hopkin's ID on someone's instant message buddy list, Hopkin as a "not found" Internet file image).

Successful social critique memes online tend to carry biting commentary on some social practice or event. The Nike Sweat Shop Shoes meme is a good example of this. In January 2001, Jonah Perretti forwarded to friends a series of email exchanges he had had with the Nike company

concerning Nike's iD campaign that allows customers to customize their shoes. Perretti's request to have "sweatshop" embroidered on his new shoes (at a time when Nike was under fire for exploiting workers in under-developed countries) had been denied by the company. Despite persistent questions on Perretti's part, the company hid behind company policy statements and did not provide a logical rationale for the cancelled order. Perretti gathered these exchanges together in a single email and sent it off to a few friends. The satiric humour and social commentary contained in the set of email correspondence caught popular attention and soon reached thousands of people via email networks, ultimately arousing the interest of broadcast news networks.

Meming may be a fruitful practice to focus on when thinking about new forms of social participation and civic action in the wake of widespread access to the Internet and involvement in increasingly dispersed social networks. Meme analysis can include tracing where or how certain memes (or mind viruses) were most likely acquired; what effects these memes have on decision-making, mindsets, and actions; the effects these memes may have on other people; and what ethical decisions must be made with respect to passing on, or *not* passing on, certain memes.

Not all the memes we have studied contribute positively to human well-being. The "Dog Poop Girl" meme, for example, generated intense public criticism. It seems a woman in Korea refused to clean up after her dog had fouled a train carriage. After a disgruntled fellow traveler posted a camera phone image of her to the Internet, the woman was identified and subjected to a "vigilante" re-

others is not an innocent, playful, or morally clear-cut act. It presents educators with a potential catalyst for discussing the moral and civic dimensions of participating in certain memes.

It may be constructive, as part of revising critical literacy practices in classrooms, to analyze meme processes and effects as new forms of social influence. In doing so, students may come to understand new literacy practices and the consequences of transmitting healthy or toxic ideas rapidly and extensively. Ultimately, such an analysis might enable educators and students to recognize or develop strategies for identifying memes that infect minds and evaluating their effects on one's (ethical) decision making, actions, and relations with others.

Counter-meming is a well-established practice online, and refers to the deliberate generation of a meme that aims at neutralizing or eradicating potentially harmful ideas. This phenomenon offers a range of models for working with memes within classroom spaces. For example, the nonprofit group Adbusters (adbusters.org) models the kinds of memes that offer students a means of resisting corporate-manufactured identities and consumption mindsets (see, for example, unbrandamerica.org) via their critiques of mainstream media, marketing, and consumption memes. Nonprofit community groups are also looking to the grassroots mobilization that occurs around remixed or evolving multimedia memes as a viable model for mobilizing commitment to social causes (e.g., Surman and Reilly, 2003). Teachers

should be aware that well-informed and savvy online meming may provide students with a fruitful and accessible practice for bringing about positive social changes.

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