Chapter 1

Media Literacy—Who Needs It? Henry Jenkins

In my book, *Convergence Culture* (Jenkins, 2006a), I offer a description of our present moment of media change and try to identify trends which are redefining the relationship between media producers and consumers. This essay outlines some of the implications of those changes for the media literacy movement.

Two seemingly contradictory trends are shaping the current media landscape: On the one hand, new media technologies have lowered production and distribution costs, expanded the range of available delivery channels, and enabled consumers to archive, annotate, appropriate, and re-circulate media content. At the same time, there has been an alarming concentration of the ownership of mainstream commercial media, with a small handful of multinational media conglomerates dominating all sectors of the entertainment industry. No one seems capable of describing both sets of changes at the same time let alone show how they impact each other. Some fear that media is out of control, others that it is too controlled. Some see a world without gatekeepers, others a world where gatekeepers have unprecedented power. At the intersection between these two forces lies convergence culture. Convergence culture is what comes after the digital revolution.

In the world of media convergence, every important story gets told, every brand gets sold, and every consumer gets courted across multiple media platforms. *Convergence Culture* (Jenkins, 2006a) rejects what it calls the "Black Box Fallacy"—the idea that convergence should be understood primarily in terms of the merging of technological functions within media devices. Rather, my book sees convergence as a cultural process. Convergence alters the relationship between existing technologies, industries, markets, genres, and audiences. Media companies are learning how to accelerate the flow of media content across delivery channels to expand revenue opportunities, broaden markets, and reinforce viewer commitments. Consumers are learning how to use these different media technologies to bring the flow of media more fully under their control and to interact with other consumers.

In this new media landscape, children are participants—not spectators, not even consumers in the traditional sense of the term. They are actively shaping media content—a process which offers them new opportunities for emotional growth and intellectual development but which also poses new kinds of ethical responsibilities. Let's be clear that participation refers to something different from interactivity: Interactivity is a property of technologies; participation refers to what the culture does with these new media resources. The iPod is a technology which enables new kinds of interactions with recorded sound (and soon, video); podcasting is a new form of participation which has grown up around this technology. As we develop a better understanding of the affordances of new media technologies, new kinds of participatory cultures grow up around them.

My own work is motivated by a belief in the potential benefits of these new participatory cultures in terms of diversifying media content, fostering a more empowered public, and making media companies more responsive to their consumers. Many of the key political struggles in the 21st century may center on our right to participate (which can be abstracted from the first amendment rights to speech, press, assembly, petition, and religion). In Convergence Culture (Jenkins, 2006a), I argue that by participating in popular culture, consumers—young and old—acquire skills in collaboration and knowledge sharing which may be fundamental to the future of democratic citizenship. Yet even if you are still driven by a desire to protect children from exposure to media violence or commercial interests, then you need to understand the shift in the way media operates. Even if you want to focus on television rather than new media, the emergence of participatory media is fundamentally altering the ways people relate to broadcast media. None of us can pretend to have all of the answers: the changes are still occurring, and so far they have moved in unpredictable directions. If educators do not study the changing media landscape, they are in no position to help students navigate its twisty pathways.

This essay describes some of the ways that youth are experiencing these changes in their relationship to popular culture. I will focus on notions of role play, pop cosmopolitanism, complexity, and knowledge sharing which are central to any understanding of the pedagogical potentials of contemporary popular culture; I will and suggest ways that these experiences challenge the underlying assumptions shaping our current media literacy curriculum. The chapter will end with a first stab at naming and illustrating some of the core skills which educators will need to be fostering in the coming decade.

Education for the digital revolution has stressed tools above all else: The challenge was to wire the classroom and prepare kids for the demands of the new technologies. Little effort was made to give kids a context for

thinking about these changes or to help them think about the new responsibilities and challenges they faced as participants in the digital culture. Convergence culture is no longer purely digital—as wave after wave of portable technologies have reshaped the flow of media within our culture. We can no longer afford to simply focus on the technologies and ignore the cultural changes which are occurring around and through them. And we really cannot afford to remain so fixated on television and mass media that we ignore the emergence of participatory culture altogether.

I am one of the principal investigators for the New Media Literacies Project, launched in spring 2006 by the MacArthur Foundation. The Project's central focus is to identify skills, knowledge, and competencies young people need to become meaningful participants—skills which will be central to learning, citizenship, community, and cultural expression. We hope to identify and promote a range of different interventions through schools, afterschool programs, public institutions, and commercial culture itself designed to promote these new-media literacies. We are just beginning our work by trying to spark a public dialogue about the future of media education.

Many educators and policy makers may ask: Media literacy—who needs it? First and foremost, adults need media literacy education. Our education schools offer little guidance for teachers in how to talk with their students about the significant media changes taking place all around them. Most of the groups offering advice to parents focus on restricting access if not prohibiting media outright and thus do little to help moms and dads understand what it would take to construct a meaningful relationship to media. Our legal authorities are striking out blindly, trying to regulate media changes they do not yet fully understand. Our children are immersed in this emerging culture while adults too often remain on the outside looking in. Marc Prensky (2001) writes about the widening gap between "digital natives" and "digital immigrants," suggesting that these two generational cohorts are never going to experience digital media in the same way because of such fundamental differences in backgrounds and experiences. Adults, he says, compute with an accent. But, make no mistake, kids need media literacy education, too. We will see some vivid examples throughout this essay of informal learning communities where kids develop core cultural competencies through their participation in popular culture. Yet these skills are unevenly distributed across the population and even the most media-literate kids are often not asking hard questions about the ways media reshape our perceptions of the world. We owe it to all of these constituencies to be up to date in our understanding of the media landscape and forward-thinking in our conception of what constitutes media literacy.

In Yoyogi Park

Our story starts in Yoyogi Park on a bright Sunday afternoon one spring. Yoyogi Park is a center for youth culture in Tokyo—near Akiharbara, which used to be the electronics sector but is increasingly known as the Otaku (or fan) district, and Harajuku, where fashionable young girls go to buy clothes. In my short time in Japan, I had already discovered the way cultural practices—forms of consumption for the most part—mapped onto spatial locations, much the way the geography of the World Wide Web structures the interactions between various American subcultures and fan communities. Every group seemed to have their own district, their own homeland, within contemporary Tokyo. The second thing that had struck me is the public nature of these passions and fascinations—the need to act out one's fantasy, the desire to form affiliations with others who shared one's tastes. Yoyogi Park is where all of this comes together. In this realm, to consume is to participate and to participate is to assume some kind of new identity.¹

As you approach Yoyogi Park from the Harajuku train station, the first thing you see are the Cosplay Kids. These are young girls (and a few young boys) who have come to Yoyogi dressed as characters from anime, manga, or Jpop. They have come to see and be seen. Often, if you go into the manga shops, you can find brightly colored fliers urging fans of a particular cartoon series to rendezvous in the park on a certain date often with very specific directions about what to wear. Yet because there are so many different fan communities, one can see many different identities being performed on this somewhat narrow piece of concrete-spies with shiny new weapons, space adventurers and demonic figures, people in Goth or renaissance courtly garb, the furries who are fascinated with anthropomorphic animals, Nanas who most often wear Victorian nurse and nanny uniforms, and so forth. Many of them spend a good deal of time posing for pictures being taken not simply by tourists but also by their fellow fans; these pictures are being recorded by cell phone, camcorder, or digital cameras, and many of them are soon to be distributed via the web. The costumes and makeup are elaborate, richly detailed, and for the most part, home crafted. The kids take great pride in their costumes though they may own multiple costumes reflecting multiple cultural identities.

For many Americans visiting Tokyo for the first time, all of this is apt to seem alien or typically Japanese. But I knew about this cosplay before I arrived, in part because of an interview my graduate student, Vanessa Bertozzi, had done with a 17-year-old American girl named Chloe Metcalf. One of a number of teenagers we contacted as part of the Young Artist project, Chloe was active in the American cosplay community. Here's some of what she told Vanessa:

I have been really interested in Japanese culture since I was in sixth grade. When I was in the seventh grade, I started studying Japanese on my own. When I got into high school, I started taking Japanese courses at Smith College. I got into costuming through anime which is actually how I got interested in Japanese. And I taught myself how to sew . . . I'm a stage hog. I like to get attention and recognition. I love acting and theater. The biggest payoff of cosplay is to go to the conventions where there are other people who know who you are dressed as and can appreciate your effort. At the first convention I ever went to, I must have had fifty people take my picture and at least ten of them came up and hugged me. It's almost like whoever you dress up as, you become that person for a day . . . People put the pictures up on their websites after the con. So after a con, you can search for pictures of yourself and if you are lucky, you will find five or ten. (Bertozzi & Jenkins, in press)

A number of things interest me about Chloe. First is the degree to which she transforms fantasies born of media consumption into various kinds of performance. In this context, I see performance, impersonation, enactment as important kinds of media literacy skills which are often neglected in our recent focus on visual or digital literacy. A growing body of literature shows that children acquire basic literacies and competencies through learning to manipulate core cultural materials (Dyson, 1997; Wolfe & Heath, 1992). As they do so, they negotiate a space between self and other which helps them to work through issues of personal identity and cultural membership. These ways of playing with texts become more and more sophisticated as children mature, with adolescence becoming a central site for identity play and self-invention. For Chloe, assuming the role of a Jpop character becomes a way of expressing her mastery over favorite texts-fusing her identity with that of a fictional character. Role play is a persistent interest among contemporary youth, whether we are looking at the cosplay of young anime fans, the role-play that takes place around Yu-Gi-Oh! or Magic or Hero clips, the fusion with a digital avatar through computer gaming or fantasy role-playing, or the construction of alternative personas in subcultural communities like the Goths. Kids have told me that role-play allows them to become the person they want to be rather than simply satisfying adult demands or accepting the often unwelcome identities projected upon them at school.²

The identity Chloe constructs doesn't simply involve breaking with the parochialism of her local culture, it also requires the creation of strong emotional bonds with cultures from other parts of the world, cultures that are not easily accessible in a marketplace which historically has been highly protective of its local culture industries. When she told Vanessa that a particular Jpop group was "her favorite group in the whole wide world," one

has the sense that she is actually talking on a global scale, especially when she adds that the group is little known outside of its genre or beyond the Asian context. She has sought out more and more information about forms of Asian popular culture. And in the process, she has begun to re-imagine her relations to the world—seeing herself as tied in important ways to the kinds of Japanese youth culture I had encountered in Yoyogi Park.

This search for more information expresses itself across a range of media the videos or DVDs she watches of Japanese-produced anime, the recordings of Jpop music on MP3 or on CD, the information she finds on the Internet as well as information she shares with her fellow fans about her own activities, the physical costumes she generates as well as all of the photographs that get taken of her costumes, the magazines and comics she reads to learn more about Japanese popular culture, her face to face contacts with fellow fans. An elaborate underground economy exists to support the circulation of these materials, including grassroots efforts to translate and dub illegally imported anime so that it can be made accessible to a broader public.

These activities around popular culture in turn translate into other kinds of learning, including much that would warm the hearts of educators. As a middle school student Chloe began to study Japanese language and culture first on her own and later at a local college. This is a story one hears again and again from language instructors-how kids like Chloe are moving from interest in Asian popular culture towards seeking out classes in Asian cultures and languages. Here we run up against old anxieties about marketing and cultural imperialism which have animated earlier stages of the American media literacy movement. Some would argue that Chloe is not so much learning or experimenting as being possessed by cultural materials not of her own making. Others would argue that she is simply a victim of the economic expansion of Japanese media companies into the American marketplace. Yet it would be a mistake to see Chloe and the other American cosplayers as simply duplicating cultural experiences imported into the US or buying into media franchises. Rather, they are as much involved in transformation as consumption, in localization as globalization.

We can see this more clearly if we walk another few yards into Yoyogi Park. Here you see a very different kind of cultural phenomenon—a pack of fifty or more Japanese rockabilly fans dancing to recordings of Elvis, wearing black leather jackets and exaggerated greaser haircuts, and performing flamboyant and energetic dance moves which mix traditional rock and roll with break-dancing. They call themselves the *rokku n roraa* (rock 'n' rollers) and by all reports they have been coming to the park every weekend for several decades to pay tribute to the King. At first glance it is easy to see their passionate response to American popular culture but one needs to look more closely to see the ways that those influences have been reabsorbed

back into more distinctly Japanese cultural practices. For one thing, this is a highly hierarchical culture with many rituals designed to ensure discipline within the rank and file as well as respect for the most esteemed members. In this case, the leader of the pack is the only one allowed to wear a red jacket—an insignia of rank modeled after the red jacket which James Dean wore in *Rebel Without a Cause*. In their cultural mythology, the only person more powerful than Elvis is Jimmy Dean. Much as the *rokku n roraa* translate American culture into Japanese culture, Chloe and her friends pull the Japanese practice of cosplay back into the social dynamics of 21st century suburban America. Even as they seek to connect with other cultures, they read them through the lens of their own culture.

For another thing, there is the gender segregation of the group. If cosplay is mostly but not exclusively female, the *rokku n roraa* are overwhelmingly but not exclusively male. I keep finding myself wondering what it meant for the two female members of the pack to dress in Elvis drag and dance with all of these muscular guys in the park. How might the fantasies provided by American popular culture allow them to escape constraints on gender performance in their own country? Or conversely, how are American boys taking advantage of the cross-dressing elements of cosplay to escape repressive constraints on male gender performance in the United States? In both cases, these youths seek a kind of freedom or fluidity of identity denied them in their own country but granted them more readily by engaging in cultural practices from elsewhere.

A long tradition of cultural scholarship has focused on the ways that youth around the world have used American cultural imports to break free from the parochialism of their own societies—even if only temporarily and even if only in the confines of their own imaginations. Much less has been written about the ways American youth escape the parochialism of their own culture through engaging with forms of popular culture imported from Japan, China, India, or Latin America. In a recent essay (Jenkins, 2006b) I described these practices as pop cosmopolitanism. Historically, cosmopolitans sought knowledge and experience which took them beyond the borders of their local community. We associate the term cosmopolitanism with various forms of high culture—fine wine, painting, music, dance, theater, the art cinema, gourmet cooking, and so forth. Yet today, popular culture performs this same function for a growing number of young people around the world. Their mastery over these cultural materials help participating youth form emotional bonds, however imaginary, with their counterparts in other countries-not simply with Japan where this culture originates but in many other countries where these materials are also consumed. It provides common cultural currency for exchanges on the Internet which may cut across national borders. This turn towards global identities

is all the more striking when you consider the unilateralism currently shaping American foreign policy and the anti-Americanism which is surfacing around the world. Kids may be learning how to become global citizens through their engagement with popular culture at a time when their parent cultures are increasingly shaped by fundamentalism and nationalism.

I came to a new understanding of this pop cosmopolitanism when I stopped for groceries in a chain store in Clayton, Georgia, a small community in the foothills of the Blue Ridge Mountains. As I stood in line, I heard the man in front of me ask in a broad southern accent why the "roly-poly" and very white checkout girl had a Japanese name on her badge. The checkout girl tried to explain to him that this was an identity she assumed through her cosplay and that many of her friends—especially on the Internet—knew her through that name. He was perplexed and demanded to know "how in the world she got interested in that." I could have pointed out the fact that this grocery store didn't sell Time, Newsweek, or Entertainment Weeklybut did carry about a dozen gun magazines and the American edition of the Japanese manga, Shonen Jump. She pointed towards the growing popularity of Pokémon and Yu-Gi-Oh! and the young kid in the grocery cart, little more than a toddler, who pulled out his Pokémon cards and started waving them proudly to his father. They left the store and I told the checkout girl that I was an otaku myself. She was shocked both because she had never met an anime fan quite as old as I was and because she didn't know that there were any other fans locally. We talked briefly and I went on my way but I often reflect on that moment as one that illustrates a kind of transition in our culture—each person in the story having a somewhat different relation to the flow of Asian popular culture into the American marketthe father finding it inexplicable, his son finding it normal, the girl finding it a source of personal identity, and me finding it a kind of intellectual interest. I also think often of what being connected to anime fandom must have meant to this Appalachian girl—a connection to the world beyond the often narrow confines of this town, a means of knowledge and experience which set her apart both from the adults around her but apparently from many of her classmates. We might well imagine that this experience meant for her some of the same things that imitating Elvis might have meant to the Japanese women I saw in Yoyogi Park.

I have devoted time on my experiences as a tourist visiting Yoyogi Park because I think what I saw there—and what I saw in the north Georgia grocery store—illustrates the complexity of young people's relationship to popular culture. Those relationships cannot be reduced to traditional dualisms of production and consumption. In no meaningful sense are these kids simply consumers of cultural materials produced by others even if they are very much drawn to the content of commercial culture. Rather, I would argue that they are participants—shaping the flow of cultural materials across national borders, tapping into a global information network to support their activities, transforming the media they consume into new forms of cultural expression, moving beyond the constraints placed on them in their local environments to tap a freedom that comes from stepping outside one's own culture and embracing pop cosmopolitanism.

At the same time, it doesn't make sense to talk about this purely in terms of new media or digital culture. The availability of new technologies has enabled some of their activities but kids are also enacting these interests through more traditional forms of cultural practice. Chloe, for example, told us about a friend who had taught himself how to make his own buttons in order to more perfectly recreate the costumes of a Japanese Jpop band. What would it mean to think of these kinds of activities as a kind of media literacy put into practice? To recreate Japanese costumes and customs, they must first study and then master them. They are understanding these cultures from the inside out-drawing on personal reflection to flesh out things they might otherwise have known only through books or media representations. As they mimic these cultural practices, they are drawn towards further research, trying to master the language, trying to understand the much older traditions which gave rise to this popular culture, trying to understand the lives of their friends in other parts of the world. We can see performance and role playing as a catalyst which motivates media literacy on the one hand and informal learning of academic disciplines on the other. Of course, it is worth noting how few American schools offer Japanese as a language or provide any real opportunity for kids to dig this deeply into Asian culture. These informal learning communities, in fact, are teaching kids things that most adults would see as valuable but which they can't learn in schools.

I Don't See Any Dummies Around Here

One of the most persistent criticisms of popular culture, represented in a stream of pop bestsellers with titles like *The Closing of the American Mind* or *Slouching Towards Gomorrah*, is that commercial culture's push to reach every consumer has resulted in a "dumbing down" of our culture. This is what cocktail party intellectuals tell each other as they strut with pride over the fact that they "don't even own a television set." Somehow responding with "I don't even own a book" doesn't carry the same cultural weight. Because these media-phobic people invest little of themselves in the media they consume, they get very little back from the experience. They never really learn how to appreciate the complexity of popular culture and as a

result, they can see little beyond the surface. If I never learn to appreciate modern dance, I am thought to be a bumpkin. If I never learn to appreciate contemporary television, I can proclaim myself an intellectual and write books that get reviewed favorably in the literary section of the *New York Times*. Despite our eagerness to think the worst about contemporary popular culture, a growing body of scholarship is finding enormous complexity in various sectors of American popular culture.

The two most important researchers currently discussing complexity in popular culture (present company excluded) are James Paul Gee and Steven Johnson. Since Gee's perspective is represented in this collection already (see chapter 2), I want to take a few paragraphs to discuss the argument Johnson puts forth in his bestselling book, Everything Bad Is Good for You (2005). As he summarizes the book on its very first page, "Popular culture has, on average, grown more complex and intellectually challenging over the past thirty years . . . Think of it as a kind of positive brainwashing: The popular media steadily, but almost imperceptibly, making our minds sharper, as we soak in entertainment usually dismissed as so much lowbrow stuff" (p. xiii). As the book proceeds, Johnson describes the kinds of complex challenges posed by "games that force us to probe and telescopetelevision shows that require the mind to fill in the blanks, or exercise its emotional intelligence. Software that makes us sit forward, not lean back" (p. 136). Johnson offers a good description of the current media landscape, though we might add films with elliptical editing and nonlinear narratives, mainstream comics which play with genre or challenging compositional structures, media franchises which disperse information across multiple media or which mix and match different modes of representation within the same media experience. These new structures, he suggests, offer "the cognitive benefits conventionally ascribed to reading: attention, patience, retention, the parsing of narrative threads" (p. 23).

Johnson's (2005) other big claim is that consuming such culture makes us more intelligent—he goes so far as to say that it is rewiring our brains. I would be a little more conservative in my claims: It might be more accurate to say that it demanding new kinds of literacy and requiring new forms of consumption. Consuming all of these media is certainly changing how we read and write. As Johnson notes, "we deal with text now in shorter bursts, following links across the Web, or sifting through a dozen e-mail messages. The breadth of information is wider in this world, and it is more participatory" (p. 185).

Alarmists call this the death of literacy yet they ignore previous shifts in the ways we read and write—for example, the shift in rhetoric from the great 19th century American writers (Hawthorne, say) and the great writers of the early 20th century (Steinbeck or Hemingway), a move towards

a sparser, more robust, less discursive style of writing which reflected the rhythms of the telegraph and the modern city. Rather, it seems more useful to think of these texts as making new demands on their readers and in return, as Johnson (2005) also suggests, readers making more demands on texts. As he explains, "Aiming for the lowest common denominator might make sense if the show's going to be seen only once, but with a guarantee of multiple viewings, you can venture into more challenging, experimental realms and still be rewarded for it" (p. 160). What seemed challenging a decade ago seems simple by today's standard as audience members develop new skills for processing such stories. Again, many of these skills get read negatively in traditional accounts-as a loss of attention span, for example, but we can also read these skills as adaptive to the demands of the modern workplace where the ability to multitask, to make predictions on partial information, to make rapid assessment of the value of new data, to shift perspectives, and to operate within an expanded social network are all required to perform most jobs well.

One can quibble with some of Johnson's formulations—a tendency to choose the richest contemporary examples and the most trivial older examples can stack the deck, a too easy dismissal of issues of content (which either cedes the case if you think contemporary media are morally complex or begs the question if you think the content is simplistic or relativistic), a lack of serious consideration for the production contexts which are giving rise to these new kinds of complexity or the consumption practices which are supporting them. To be fair, Johnson is a journalist who is painting with broad strokes in the hopes of starting a conversation. And that he has more than accomplished.

For my money, Johnson doesn't go far enough in terms of identifying the many different forms of complexity in contemporary popular culture. Here are some more forms of media complexity:

Genre complexity: Genres represent formulas which enable the construction and interpretation of popular narratives. Historically, genre theorists saw each work as working within one and only one genre tradition. Westerns were distinguished from musicals. Increasingly, genre theory has realized that most works operate within more than one genre, shifting between different formulas to create new interests and to broaden their consumer base. The most complex contemporary works depend on the viewer's ability to recognize the interplay between multiple genre traditions within the same work.³ Consider, for example, DC's Elseworlds comics. Here, the familiar DC superheroes—Batman, Superman, Wonder Woman, and the like—get reworked through different genres or different historical periods. So, for example, *Superman's Metropolis* (Lofficer, Thomas, & McKeever, 1997) reads the hero's origin stories against the background of Fritz Lang's German Expressionist

classic; *The Kents* (Ostrander, Truman, & Mandrake, 2000) is a multigenerational saga set in Kansas in the 19th century—a western about Clark Kent's ancestors; and *Red Son* (Millar, 2004) imagines what would have happened if Superman had landed in Russia rather than the United States.

Visual complexity: Many people complain that they don't know how to read comics-it's really pretty simple and mostly involves reading left to right, top to bottom, like any other book. Yet, some visual artists develop much more challenging visual styles. David Mack, for example, has developed a collage-like aesthetic which does not depend on linear processing of panels but rather invites the reader to scan across a page organized with little or no clear hierarchy of information. The same page may mix and match multiple kinds of written texts (some printed, some handwritten), multiple kinds of images (some highly abstract, others highly representational), as well as explore bold plays with color and texture which evoke feelings which operate independently of any story information. There is no right order to read this page but as we accumulate and process all of these different streams of information, the gestalt (and the decipherment process itself) packs a powerful emotional punch. One can certainly connect Mack with a range of high art traditions—including artist books which are interested in the materiality of the book as an artefact—but what is striking is that Mack has done some of his best work at the heart of the commercial comic book industry, working, for example, within Marvel's cash-cow Daredevil franchise.4

Narrative complexity: As Johnson suggests, contemporary television series have become more sophisticated in their narrative structures—linking together plotlines involving multiple characters, unfolding story information across long arcs, and depending on viewers to draw on back story which might have been revealed several seasons before. For example, the contemporary hit series, *Lost*, involves more than 18 different recurring characters, many of whom may fade into the background in one episode and emerge as the main character for another. It has involved elaborate and extended flashbacks, tracing how each character came to be on the island, and over time, we are expected to read their present actions against what we learn from the past, and we may learn new details which force us to rethink what we thought we knew about their pasts. Johnson suggests that it is by making sense of such complex sets of characters that we can begin to master skills in navigating the ever-expanding social networks which shape our everyday interactions.

Ethical complexity: At the same time, other devices, such as the confessional in reality television which opens up a gap between what characters do and how they reflect on their own actions, helps us to recognize the negotiation between competing identities which is also part of how we manage social relations in the present epoch. Reality television series, such as *Survi*-

vor or *Amazing Race*, produce a series of ethical dramas which become the focus of audience evaluation and discussion. While what occurs on-screen may often seem amoral, what occurs in the audience can have profound ethical implications. In a world where few of us know our neighbors, reality contestants put themselves forward as the subjects of gossip. Gossip has historically served important social functions, enabling a bonding through the mutual disclosure of secrets and the social negotiation of values. By talking about what we see on television, viewers living in a multicultural society can compare moral evaluations and develop a fuller understanding of how we each see the world.

Paradigmatic complexity: As James Paul Gee (2005) has noted, a child's mastery over the Pokémon characters is an intellectual accomplishment of the order of mastering chemistry's periodic table or the pantheon of Greek gods. There are several hundred characters, each of whom has multiple states of being, all of which relate to each other through an elaborate system of antagonisms and alliances. The information one needs to understand the Pokémon universe is not contained within any single source (though the phenomenon has produced a healthy share of reference books which promise to tell us everything we need to know). Rather, it has to be gathered together across many different media (television series, films, games, cards, coloring books, comics, and the web). As David Buckingham and Julian Sefton-Green (2004) argue, Pokémon isn't something you watch or buy: It is something you do. The dispersion of information about the characters not only motivates more consumption, it also provides a context for social interactions among young fans as they compare notes and pool knowledge.

Cognitive complexity: As writers like Gee (2005) or Kurt Squire (2005) note, contemporary computer games make more and more demands on their players. Squire, for example, has explored what kids might learn about history by playing a game like *Civilization III*. He found that the game allows players to set their own goals and test their own hypotheses, encouraging young learners to ask "what if" questions about, say, why Europeans colonized North America rather than the other way around. By asking these questions, and by manipulating complex sets of variables, the kids were able to test their hypotheses and ground them in a deeper understanding of core historiographic principles—for example, in understanding the role that geography and climate played in shaping the interactions between historic civilizations. In the process of such play, kids acquired a broad range of concepts, such as monarchy or monotheism, which are central to the national social science standards.

Cultural complexity: We have already discussed the complicated ways that kids are borrowing images, sounds, personas, and stories from around the world, mixing and matching them to form their own cultural identities.

Popular filmmakers around the world are similarly combining different cultural traditions to create works which can only be fully appreciated by stepping beyond the limits of your own cultural community: for example, *Bride and Prejudice*, a recent Bollywood film based on the Jane Austen novel, or *Tears of the Black Tiger*, a Thai western which sets a traditional Hollywood story in the context of traditional Thai society. Such films reflect a transitional moment in their countries of origin—a move from national to global modes of production and consumption, a shift from traditional to modern societies. More and more Asian films are being produced for diasporic communities worldwide rather than simply for local consumption, and these films reflect the betwixt and between perspectives of their "desi" consumers.

What these different forms of complexity have in common is that they reward those who have invested themselves and worked hard to achieve a particular depth of understanding of a given work. The underground cartoonist Peter Bagge (2003) drew a comic strip in 2000 which depicted a group of friends exiting a theater showing *The Matrix*.⁵ The first two young men are extolling the virtues of the production, while the third one mumbles "I don't get it." Bagge's cartoon captures the sense of inadequacy many viewers felt in response to the *Matrix* movies, walking away with a sense that they must have missed something. Historically, the kinds of films which produced such feelings of inadequacy were art films imported from Europe or independent films circulating outside the commercial cinema. Yet *The Matrix* was a Hollywood blockbuster which embodied the various kinds of complexity I identified above.

How do we make sense of the production and circulation of such complex works? Our comprehension depends on two shifts—one technological, the other cultural. The technological shift can be described as distributed cognition—the idea that we can accomplish more difficult challenges as we learn to offload basic cognitive processes into our technologies (Salomon, 1996). So, for example, I was able to follow far fewer television series and was more liable to miss crucial episodes before I got my Tivo. Similarly, my ability to archive episodes—in my case, primarily by collecting video tapes-can enable me to go back and watch key moments in the series whenever I encounter something that confuses me. Television shows can now enjoy the affordances of books and other printed matter: I can reread them; I can scan through them looking for specific passages; I can share those passages with a friend as the start of a conversation; we can debate our critical interpretations, and so forth. Of course, my archive is only as valuable as the annotations which surround it. The next generation of technological change will make it easier to search and index video so that we can recall key moments when we need them.

More important, however, have been cultural changes in the ways we consume media-what Pierre Levy calls the emergence of collective intelligence. Levy (2000) argues that a new kind of power has emerged in the age of networked computing, one which may eventually prove as important as the nation state or commodity capitalism. He is interested in the ways online communities form to solve certain kinds of problems by pooling information, sharing knowledge, and criticizing and refining prior formulations. In such a world, nobody knows everything, everyone knows something, and what is known by one member becomes accessible to the group as a whole. So, for example, the young Pokémon fans, who each know some crucial detail about the various species, constitute a collective intelligence whose knowledge gets extended each time two kids on the playground share something about the franchise with each other. Many of adults work in jobs which require collaboration between various specialists and experts to solve shared problems. Such knowledge sharing can take on more and more sophisticated functions as it moves online and as the range of potential participants broadens geographically and culturally. So, for example, Matrix fans have created elaborate concordances which help them keep track of information about the Zion resistance movement. Survivor fans have used the Internet to track down information and identify the names of contestants before they are announced by the network; they have used satellite photographs to identify the location of the Survivor base camp despite the producer's "no fly over" agreements with local governments. Such knowledge communities change the very nature of media consumption-a shift from the personalized media that was so central to the idea of the digital revolution towards socialized or communalized media that is central to the culture of media convergence.

Right now, we are experimenting with collective intelligence through our recreational lives but it is quickly spilling over into other aspects of our culture. One can see the development of the Wikipedia, for example, where thousands of people worldwide contribute information to create a vast reference library, as the extension of collective intelligence into the educational space. We can see Moveon.org's "Bush in 30 Seconds" contest, where hundreds of amateur filmmakers submitted anti-Bush spots for use during the last presidential campaign, as collective intelligence applied to the political sphere. Or we can see an online publication like Slashdot, where readers collectively assess the value of any given submission and thus determine its visibility, as collective intelligence applied to journalism (Chan, 2002). And we might think about the fostering of brand communities by major corporations as the attempt to court collective intelligence in order to promote consumer loyalty. And the list continues.

By contrast, our schools have done little to move beyond the focus on the

autonomous learner, still marking most forms of collaboration as "cheating" at a time when most of us spend most of our time collaborating at work and in our communities. And even many groups promoting 21st century skills still emphasize individualized skills sets. For example, The New Media Consortium recently issued a report which offered this summary of the emerging competencies:

21st century literacy is the set of abilities and skills where aural, visual, and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use the power to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms.

It's a very good start but such a description seems not to recognize that part of what is significant about the new-media literacies is the shift in the ways we interact with each other. The social dimensions of these new literacies crops up here only in terms of the phrase "to distribute them pervasively," which holds onto the sender-receiver model. Even a slight shift away from distribution to "circulation" might introduce the idea that others play an active part in this process. But we really need to push further talking about how meaning emerges collectively and collaboratively in the new media environment and how creativity operates differently in an open-source culture based on sampling, appropriation, transformation, and repurposing. The social production of meaning is more than individual interpretation multiplied; it represents a qualitative difference in the ways we make sense of cultural experience. It thus represents a profound change in how we understand literacy. We need to integrate these new knowledge cultures into our schools—not only through group work but also through long distance collaborations with other educational spaces. Students need to discover what it is like to contribute their own expertise to a process which involves many intelligences, a process which they encounter readily in their participation in fan discussion lists or blogging, for example, and which will be an assumed skill in the future workplace. Our present educational practices stress the autonomous individual over the social network, with most forms of collaboration distrusted as cheating.

So far, we have identified a range of factors pushing us to rethink what we mean by media literacy:

- 1 the growing centrality of participatory culture—enabled by the rise of new media technologies but having implications which stretch far beyond them.
- 2 the emergence of "pop cosmopolitanism," a new way of living in the world, which requires greater cultural knowledge.

- 3 the emergence of new forms of complexity in popular culture which in turn require new skills and competencies.
- 4 the emergence of new kinds of social viewing practices—or what we are calling here *collective intelligence*—which require new skills in information sharing, assessment, and collaboration, which by and large are not being taught through our schools.

So What Are We Gonna Do About It?

Hmmm. Where do we go from here? Many essays about media literacy start by sounding an alarm, describing all of the negative things that are happening to our children and youth because they spend so much time consuming media and are at the mercy of Madison Avenue. Such essays end with a call for the teacher or parent to come to the rescue. This time, however, I have been describing the powerful skills which young people are developing on their own through the ways they are interacting with, participating within, and sharing their knowledge about popular culture. So, why do they need us? What role does formal media literacy education play in the world I have just described and what forms should it take?

Here's where the alarm bell rings: If we agree that the skills and activities described above are valuable, helping to prepare kids for full participation in our culture, then we have to own up to the fact that these skills are unevenly distributed across our society. So far, much of the discussion of the digital divide has emphasized problems of access, seeing the issue primarily in technical terms—but as I have already suggested, a medium is more than a technology. As activists have sought a variety of means to broaden access to digital media, they have created a hodge-podge of different opportunities for participation. Some have extended access to these resources through the home and others have limited, filtered, regulated access through schools and public libraries. What you can do in your own home with unlimited access to new media technologies is very different than what you can do on a school or library computer, with people waiting in line behind you, and no ability to save your work from one visit to the next. As we have waited for one segment of the population to get wired, those who were early adapters have fully integrated these capabilities into their lifestyles and have made what they do online a central aspect of their cultural identities. Beyond such technical problems, there are a range of cultural factors which diminish the likelihood that different groups will participate. Race, class, gender, language differences amplify these inequalities in opportunities for participation. One reason we see early adopters is that some groups not only feel more confidence in engaging with new technologies but also

some groups seem more comfortable going public with their views about culture.

We can learn a great deal about what schools need to do by looking at some of the groups which have experimented with the new skills and competencies we hope to promote—homeschoolers and the disabled community. Here's how my graduate student Vanessa Bertozzi (2005) describes some of her core insights into the homeschooling movement:

De-institutionalization forms the basis of progressive homeschooling, known by some as "unschooling." This type of homeschooling emphasizes child-directed learning, often interdisciplinary and informal in style. The Place of the home with its security and privacy (interesting to note the political connotations those words have in the current news media) opens up as a flexible Space full of possibilities. Many of these unschoolers follow an Emersonian ideal, steeped in 60s counter-culture and grounded on the pragmatics of self-sufficiency. This philosophy becomes manifest in very practical ways: Not only do unschoolers practice the right to think for themselves, but they also have more free time to pursue their passions. Going further, they have the determination to see their DIY media productions through to completion and the self-confidence to then share their creations with the world. It would be wrong to say that unschoolers are necessarily more creative than their schooled counterparts (though some might claim that as a self-selecting group they do tend to be). However, I believe that there are certain distinguishing characteristics of the unschooling lifestyle that predispose these kids to a more enriching, participatory use of media. These young people are less distracted by homework and "busywork." Their learning environments provide the sort of adaptable setting and time to integrate media literacy in a "naturalistic" way of learning.

The role of community must also be looked at through this lens. Support groups online have made homeschooling easier in an age where unschoolers are a geographically dispersed minority. Social networking allow for greater ease in swapping expertise and organizing field trips, for instance. Distanced learning programs and open source communities (such as MIT's Open Courseware) function really well for self-motivated and passionate self-learners. Subsequently, the communities that surround such sites tend to be dedicated and responsive to community members who need a helping hand. In this way, homeschoolers who seek out such collective intelligence communities can gain access to knowledge that isn't even necessarily divulged through homeschooling communications per se. (Bertozzi, 2005)

At one time, the biggest downside of homeschooling was that it left kids socially isolated, cut off from their peer culture. But in the age of media convergence, these kids are spending more time networking online; they are using the web and the cell phone to "smart mob" field trips, sending out a call for all the homeschoolers to go to a particular museum at a particular time, and thus instantly creating a context for shared learning. They are spending more time on individual projects, including media productions, which they circulate via the web.

Kids with disabilities—especially the blind—are also leading the way towards exploring these new modes of learning. Many of these kids become very adept at navigating through the new media landscape to access the same materials or have the same kinds of experiences as other kids. Media change, as Alicia "Kestrell" Verlager (2005) argues, has been driven by the desire to transform human perception and sensation and has often been led by those who felt frustrated by limits placed on their ability to process the world around them (Thoman & Jolls, 2005). Leading innovators have either themselves been disabled or have conjured up metaphors of disability as a means of thinking through the challenges of technological development. Disabled consumers also play important roles in testing and evaluating new technological features-such as text recognition or speech recognition software-which will later be adopted more widely across the computer industry. Such consumers develop rich conceptual vocabularies for thinking about media technologies in order to make their needs and demands known to the development community. Far from being left behind by media change, the disabled are pushing ahead of the able-bodied population in their understanding of the media changes taking place around them.

For those of us who care about education, it should be both chilling and inspiring—to realize that the greatest media literacy may be possessed by those least touched (homeschoolers) or worst served by the current educational system (the disabled). As we turn towards the schools, however, we are seeing two troubling developments. On the one hand, those kids who are most advanced in their mastery over the new-media literacies are often deskilled as they enter the classroom: In order to ensure a uniform experience, these kids are stripped of their technologies and robbed of their best techniques for learning. Such kids cannot wait to get out of school in order to get back to the activity of learning. On the other hand, many kids who have had no exposure to these new kinds of participatory cultures outside school find themselves struggling to keep up with their peers. Schools have an important role to play in ensuring the more equitable distribution of these skills across the population.

The problem, as I have suggested, is that even many of the best current media literacy programs are still focused on media consumption and not participation. For example, I admire Elizabeth Thoman and Tessa Jolls (2005) at the Center for Media Literacy for developing clear-headed, pragmatic, and

even-handed resources for media education. Yet consider how they phrase the five key questions which run through their literature:

- 1 Who created the message?
- 2 What creative techniques are used to attract my attention?
- 3 How many different people understand this message differently than me?
- 4 What lifestyles, values, and points of view are represented in—or omitted from—this message?
- 5 Why is this message being sent?

There is a lot one can praise about these questions: They understand media as operating within a social and cultural context; they recognize that what we take from a message is different from what the author intended; they focus on interpretation and context as well as motivation; they are not tied up with a language of victimization. Yet, note that each question operates on the assumption that the message was created elsewhere and that we are simply its recipients. We would add new complexity and depth to each of these questions if we rephrased them to emphasize our own active participation in selecting, creating, remaking, critiquing, and circulating media content.

Through the MacArthur New Literacies Project, we have begun to identify a series of basic skills or competencies which reflect what the early adapters are doing in the new media environment. What follows is a partial list of skills which are emerging in and around computer games culture with some suggestions of what they might mean for classroom teachers.

Play refers to a process of exploration and experimentation. Think of games as problem sets. Each step forward involves trying out possible solutions: Some work, some don't, all must get refined through further play. When children play *Sim City*, they explore principles of urban planning; they experiment with different designs; they tweak their designs in response to feedback; and in the process, they develop an understanding of, for example, the relationship of mass transit to population density.

Performance: Games also involve trying on and performing different identities. Game identities are a complex mix of fact and fiction, self and other. Much of the first part of any contemporary game is spent customizing these characters. Children playing history games find themselves drawing both on their own life experiences and on things they have learned in class, much as an actor draws on a broad range of experience and knowledge in preparing for a part. This kind of performance encourages self-reflection and cultural analysis.

Expression refers to the ability to create new content, often inspired by the culture around us. In the new games culture, players are encouraged to design

their own characters, make scrapbooks of their game play experience, animate movies using game avatars and share them with other consumers, take the game design tools and make their own additions to commercial games. For example, players of Star Wars Galaxies, a massively multiplayer game, have begun staging elaborate musical numbers which require the choreographing and synchronization of hundreds of players hitting the right combination of buttons at the same time in order to produce music videos. The result is bizarre—blue-skinned and snake-haired dancing women getting jiggy with Lawrence Welk Christmas songs-but the challenges of producing them give us new respect for what they have accomplished. More and more kids are learning to express their ideas through digital movies or games. We are also seeing schools and arts centers—from OnRampArts in South Central Los Angeles to the Urban Games Academies held in Atlanta and Baltimore-teaching kids how to make their own games. Thinking about how to translate school curriculum into game content forces students to think about what they can do with the things they are learning and how to determine what content is most important.

Collaboration describes how members of online communities share information, pool knowledge, compare notes, evaluate evidence, and solve largescale problems. This process is perhaps most spectacularly illustrated by alternative reality games, informational scavenger hunts conducted in both digital and real spaces and involving teams of hundreds of people working together to master a particular set of puzzles. For example, in *I-Love-Bees*, a game designed to promote *Halo 2*, players had to recognize patterns of numbers as global positioning data, figure out that each of those numbers referred to the location of pay phones scattered across all fifty U.S. states, get people to go to those locations at a specific time, and await instructions for the next set of problems (McGonigal, 2005).

Judgment: Through games, young people are learning how to play, perform, express themselves, and collaborate in large-scale communities. Yet, there is another skill often missing—judgment. Researchers using games in the classroom are finding that children are adept at learning new content through games but the game itself remains largely transparent: Few kids ask about the motives or accuracy of the ways games depict the world (Schrier, 2005). Judgment requires not only an awareness of the traditional concerns of media literacy educators (about who is creating what images for what purposes) but also newer questions about ethics, focused on the choices that kids are making as game players and game creators. Up until now, media literacy education has been preoccupied with effects—what media do to kids. A focus on ethics allows one to address many of the same concerns but from the perspective of your own choices and responsibilities—what kids are doing with media.

Each of these skills has implications for how we will live, work, and vote in the future. Each can heighten our consciousness of ourselves and our surrounding culture. Students need to learn a new vocabulary to reflect on these new media experiences and their responsibilities as members of such communities.

The few organizations out there who are promoting the instruction of these new skills and competencies often adopt too narrow a perspective on their value and importance. Too often these skills are understood primarily in terms of their value in enhancing traditional school learning, as if the child's entire life was taking place within the school house. Instead we should recognize participation and collaboration as central to the way our future society will function and thus see these not as schoolroom skills but as lifelong competencies. These are the things that kids need to learn to succeed in the 21st century: They are not simply ways to motivate mastery over the same old stuff that kids have been learning for generation.

That said, we also need to guard against the tendency to throw out the baby with the bathwater. New-media literacy skills must build on traditional literacy skills. One cannot, for example, be part of an online community without being able to read and write. Each emerging medium demands new competencies, but those skills required by earlier media should still remain a central aspect of a good education. We seem to be pulled by polarizing tendencies—to protect traditional literacy by ignoring media change or to ignore traditional literacy as we seize the opportunities represented by new media. That's my concern about the current turn towards "visual literacy" training, which seems to operate on the assumption that communications in the future will be picture-based rather than text-based. Such an approach ignores the complex interactions between words and images that run across human history. And it ignores a range of other kinds of media experience centering around sound or tactility which do not fall comfortably into either category. The educated person of the future will be able to comprehend and express their ideas through the broadest possible range of media.

By the same token, we want to build upon several decades of important groundwork already done in the media literacy movement. That movement has helped to build the infrastructure which we need in order to expand access to these new participatory skills; it has developed many classroom activities which introduce students to core concepts they need to analyze the current media landscape; and perhaps most importantly, it has raised ethical concerns about media which need to be part of any further agenda for change. In short, I come not to bury media literacy but to expand it—opening it up to new perspectives and approaches which more fully respond to the situations young people face in their everyday lives.

In the ideal society, media literacy principles will be taught through every possible venue. In schools, they should be understood not as some added subject which our teachers are obligated to fit somewhere into the already overcrowded schedule. Rather, media literacy should be understood as a paradigm shift, much like multiculturalism or globalization. Media change impacts every aspect of our society. Media literacy has implications for all of the existing school subjects. In each subject, what we teach and how we teach should be reshaped by expectations of what it takes to prepare kids to be full participants within a mediated society. These principles of media literacy should be part of every other educational context-taught through informal clubs and activities, through churches and community organizations, through museums, libraries, and public institutions, and through the media itself. Indeed, in so far as popular culture and educational television has been instrumental across the past several decades in promoting traditional literacy (think Sesame Street), then we should demand that future programming should help kids to better understand their rights and responsibilities in the ever-changing media environment.

This is a tall order. We are going to need a large community of people focused on achieving these goals. The MacArthur Project hopes to generate a public conversation about the kinds of media literacy education needed as we move into the 21st century.

Notes

- For more about this distinctly Japanese mode of cultural production and consumption, see Ito (2005). Ito has since become interested in the ways that American Otaku culture represents "one prototype for emergent forms of literacy." See The New Media Consortium (2005).
- 2 For more on role play and identity formation, see Geraldine Blustein (2004).
- 3 For more on these issues, see Henry Jenkins (in progress).
- 4 Johnson specifically cites *Lost* as an example of complexity in contemporary television during an appearance at the MIT Communications Forum. See http://web.mit.edu/comm-forum/forums/popular_culture.htm.
- 5 For a fuller discussion of *The Matrix*, see Henry Jenkins (2006a).

References

Bagge, P. (2003). Get it?, http://whatisthematrix.warnerbros.com, reproduced in A. Wachowski & L. Wachowski (Eds.), *The Matrix comics*. New York: Burlyman Entertainment.

Bertozzi, V. (2005, October). Personal correspondence.

Bertozzi, V., & Jenkins, H. (in press). Artistic expression in the age of participatory culture: How and why young people create. In B. Ivey & S. Tepper (Eds.), *Engaging art: The next great transformation of America's cultural life.* New York: Routledge.

- Blustein, G. (2004). *Girl-making: A cross-cultural ethnography of growing up.* Oxford, England: Berghahn Books.
- Buckingham, D., & Sefton-Green, J. (2004). Structure, agency, and pedagogy in children's media culture. In J. Tobin (Ed.), *Pikachu's global adventure: The rise and fall of Pokémon* (pp. 12–33). Durham, NC: Duke University Press.
- Chan, A. J. (2002). *Collaborative news networks: Distributed editing, collective action, and the construction of online news on Slashdot*. Master's thesis, Comparative Media Studies Program, MIT.
- Dyson, A. H. (1997). Writing superheroes: Contemporary childhood, popular culture, and classroom literacy. New York: Teachers College Press.
- Gee, J. P. (2005). *Language, learning, and gaming: A critique of traditional schooling.* New York: Routledge.
- Jenkins, H. (2006a). *Convergence culture: Where old and new media collide*. New York: New York University Press.
- Jenkins, H. (2006b). Pop cosmopolitanism: Mapping cultural flows in an age of convergence. In H. Jenkins (Ed.), *Fans, bloggers, and gamers: Essays on participatory culture*. New York: New York University Press.
- Jenkins, H. (in progress). Just men in tights: Revising silver age comics in an era of diversification. .
- Ito, M. (2005). Technologies of the childhood imagination: Yugioh, media mixes and everyday cultural production. In J. Karaganis & N. Jeremijenko (Eds.), *Network/netplay: Structures of participation in digital culture*. Durham, NC: Duke University Press.
- Johnson, S. (2005). *Everything bad is good for you: How today's popular culture is actually making us smarter*. New York: Riverhead.
- Levy, P. (2000). *Collective intelligence: Mankind's emerging world in cyberspace*. New York: Perseus.
- Lofficer, R., Thomas, R., & McKeever, T. (1997). Superman's Metropolis. New York: DC.
- Mack, D. (2005). Daredevil: Echo-Vision Quest (New York: Marvel).
- McGonigal, J. (2003). *This is not a game: Immersive aesthetics and collective play.* Retrieved from http://www.seanstewart.org/beast/mcgonigal/notagame/paper. pdf
- Millar, M. (2004). Superman: Red son. New York: DC.
- New Media Consortium. (2005). *Media literacy: A global imperative*. (Stanford, CA: The New Media Consortium). http://www.adobe.com/education/pdf/globalim-perative.pdf.
- Ostrander, J., Truman, T., & Mandrake, T. (2000). *Superman: The Kents*. New York: DC.
- Prensky, M. (2001). Digital natives, digital immigrants, *On the Horizon*, NCB University Press. Retrieved from http://www.marcprensky.com/writing/Prensky%20%20 Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf
- Salomon, S. (1996). *Distributed cognitions: Psychological and educational considerations*. Cambridge, England: Cambridge University Press.

- Schrier, K. (2005). *Revolutionizing history education: Using augmented reality games to teach histories.* Master's thesis, Comparative Media Studies Program, MIT.
- Squire, K. (2005). Civilization III as a world history sandbox. In M. Bittanti (Ed.), *Civilization and its discontents: Virtual history, real fantasies*. Milan: Lugologica Press. Retrieved from http://labweb.education.wisc.edu/room130/PDFs/civ3education-chapter.doc
- Thoman, E., & Jolls, T. (2005). *Five questions that can change the world*. San Francisco: Center for Media Literacy.

Verlager, A. K. (2005, October). Personal communication.

Wolfe, S. A., & Heath, S. B. (1992). *The braid of literature: Children's world of reading*. Cambridge, MA: Harvard University Press.