

and professional-looking graphics are very important. . . . It is important to "read" graphics and understand the relationship between text and how it is displayed (i.e., bold text = main idea, small text = footnote). . . .

When I write conventional texts, I . . . use visual layouts to contribute to the true message of my writing.

Given her situation, by the time she entered high school, Brittney became quite adept at leading a double life in terms of her literacy practices and values. For most of her academic classes, to please her teachers, she composed what she called "conventional" texts like the following essay entitled "Schindler's List." But to challenge herself and to engage in the literacy practices she knew would matter most to her when she graduated, she designed her school's Web site and created visual PowerPoint texts like "Honduras 2001," about a social action project she undertook with members of her church (see Figs. 3 and 4).

## The Case Study of Charles Jackson

Born on October 23, 1985, to a White mother and a Black father, Charles Jackson lived in Salt Lake City, Utah, until his family moved to Georgia, and later came to settle in Greenwood, South Carolina. The oldest of five children, Charles lives at home with his four younger sisters and his parents.

Charles' mother and father, both of whom left college to care for their children, have always valued reading and writing within their home. His mother, Charles noted, likes

. . . to write stories and stuff like that. . . . My mom reads all the time. In fact my dad gets mad at her sometimes because she reads so much. . . . Whenever I have a book report for school my mom makes me read the book to her. She doesn't trust me to read it by myself so she does that to make sure that I get my readings done.

His father, explained Charles,

. . . likes to read science fiction and stuff . . . [but] my dad does . . . everything on the computer. He reads on the computer. He watches TV on the computer. He looks up stuff on the Internet. He likes to read books and stuff about his games on the computer. . . . His favorite game is "Home World"; you might have heard of it. He likes that game a lot. He buys books and books on that game. He really likes it.

. . . I think he uses computers for his job . . . I think he orders parts or something like that for Lockheed Martin. He uses computers . . . to order parts and look up prices and stuff like that.

Raised in a home environment where his mother and father valued and practiced multiple forms of literacy, and in multiple environments, Charles learned how to read and write online about the same time he learned to read and write in print:

I think I was like four or five years old. I couldn't write well, but I could read. I remember reading *Mercer Meyer*. . . . My parents helped me learn to read, and my teachers helped me learn to write.

... the first time I remember using computers [was] when I was four years old. ... I went to this dude's house. I think he was a friend of my dad. We went down in his basement, and he had computer stuff everywhere, on the walls and everywhere. We took some parts home and set them up. We had this little bitty screen with two colors. You know, green and black. You could type stuff in it. That was about it. Couldn't run games on it.

I took a book from the library and I would try to type it. I tried to learn the shift key and the caps lock key. I remember I wrote like one sentence and it took me an hour. I was about five. My dad told me how to use the shift key. And for a while all my letters were capitalized because I didn't know how not to.

Charles continued to practice literacy in both computer-based and print-<sup>24</sup> based environments as he grew up. In print environments, he developed a taste for comic books—*Ghost Rider*, *The Incredible Hulk*, and *Captain America*—and a strong preference for historical books and biographies rather than novels. In electronic environments, Charles developed an early love of gaming, spending hours with early games like *PacMan*, *Asteroids*, and *Superman*. Charles also tried out other gaming systems and became especially fond of role-playing environments. As he remembered his initial gaming experiences:

I had the first *Ultima* game and it was tight. There was a little itty bitty dude wandering around with a little horse and tiny dots on the screen for the village. Later I got into flight simulators like the *Red Baron*. Then as games got more advanced I moved on to new games like *Tomb Raider* and all those games.

Then we went on to the 32 to 64 bit era . . . I played *Crash Bandicoot* and *Final Fantasy*. I have the original *Final Fantasy* . . . it's rated M but I don't care. It's about this dude who has two guns and a sword. The sword is huge; it looks like a buster sword. It is so cool.

Charles' father encouraged his son's interest in online environments and worked with him to build computers out of the spare parts that littered the family's basement. The pair then shared the machines with the rest of the family through a trickle-down system. "Now I have my own computer," Charles noted. "It is actually my dad's old computer. The one in my sisters' room is my old computer. When my dad gets an upgrade, I get his old one and my sisters get mine."

In academic settings, however, particularly in elementary school, Charles<sup>25</sup> had considerably less access to computers. Although his school did acquire a computer lab when he was in the second grade, Charles had only minimal access to these machines and limited help from teachers in learning to use them. When his instructors did integrate computers into their classroom work, they focused on conventional, alphabetic literacy:

I had about an hour a week [on the computers]. [And], if I was lucky I could [also] use them for 10 minutes before recess. . . .

The teachers helped me learn about computers, but I don't think they really knew what they were doing. They were new to computers like we were. They helped us out by encouraging us to use them and to help us learn to read and

write with them. . . . They taught us to use word processors and encyclopedias on computers.

Confronted by such limitations at school, Charles continued to develop an increasingly broad range of online literacies at home. In this effort, he was particularly motivated by his continued interest in computer gaming:

If you don't know how to read and write then you are going to have trouble using computers, but they can help you read and write better. Say you want to play games. You are going to have to learn how to read in order to play the games. You have to read on the screen what the menus say.

Charles' gaming activities not only encouraged his reading but his composing skills, as well:

I do a lot of computer coding. Mostly C++ stuff. I do a lot of writing for my games. I try to come up with ideas. I just sit down and try to come up with ideas. Often I will write down a plot or [try] different methods of coding to get a camera angle to work or a certain character to move, stuff like that.

In the gaming environments he frequented, Charles, like Dànielle, also became adept at reading and interpreting imaginary scenarios, composing the exchanges of characters and gamers within such environments, and responding to the complex situations that games depicted. As he explained: 26

[Y]ou need to learn to read between the lines. You need to know the right things to say to people and how to communicate with them. You need to know how to develop friendships. It is important to read between the lines so that you can know what people want you to do and how to go about doing it.

As Charles became increasingly adept at both gaming and game design, he also learned to read the texts of the games themselves—figuring out the grammars, or rule sets, that shaped his interaction with these dynamic environments and acquiring the kinesthetic, intercultural, and problem-solving literacies that the games demanded:

I think with playing games there is a grammar. Games have different genres just like books do. So when you pick up a game of a certain genre you kind of expect to know how to play that game. Say you pick up an action game you kind of expect, say you expect Mario to move around in certain ways. You expect certain controls to be there and when they are not there then you get confused, because the grammar is not complete in that game or is not what you are expecting. The way controls are used, the menus that are used, the terms, the buttons that are used. You see—like for example the Final Fantasy series—in *Final Fantasy VII*, the button that you use is X. Well in *Final Fantasy VIII* it is O. . . . The Japanese games use the O button and the American games use X for everything.

I think that the main skill that I've learned is puzzle solving. Take *Tomb Raider*. Despite the pretty girl, it is a puzzle-solving game. So you have to figure how to move the blocks to fit a certain square, how to swing across the rope a certain way, and how to make all the pieces fit just right. What I eventually learned to do,

is after about level three I learned how to put the puzzles together and learned what to expect in the game—especially in *Tomb Raider 2*.

In the gaming chat rooms that he frequented online, Charles, like Dànienne, 27 honed his rhetorical skills, not only with people from the United States, but with gamers from other countries as well:

You have to be courteous. You have to know how to read and write well because people get really annoyed if you are like, "I want to learn how to make a game. How do I do this?" . . . Like some guy from Yugoslavia comes on, and you can hardly tell what he is saying. But I don't feel so bad trying to help them . . . because they can't really help it. English isn't their language. A lot of the people I speak with don't know English that well. You have to be understanding of that. Half the people on there speak German. . . .

I learned to be considerate of people to make sure that I get the respect that I get as well as being respectful to others. You know the old Golden Rule thing. Make sure that you don't put people down. Like if someone thinks they have a great idea and it really isn't you should tell them that it is and then give them constructive criticism on how to make it better. Like some people on there are like, "Oh man that sucks! You shouldn't be out here!" And that just isn't right because everybody is learning how to do new things. Everyone was like that at one point. Calm down a little bit, and let them do it. If you like turn away everybody when they are just learning how to do something, then no one will want to do it again.

If his teachers didn't always recognize that the literacy skills he acquired in the problem-solving environments of online games transferred productively to the more conventional literacy tasks he was assigned in school, Charles certainly appreciated this fact himself:

Well, playing games has taught me about writing because a lot of games are like problem solving. . . . When you are making a computer game you have to think about everything and what can go wrong, what you are forgetting. And that has helped me in writing because it's the same thing when I am composing a paper for a teacher. I have to think of everything that I am writing, and everything that I can do to make it better and everything that I have done that might make it wrong. Might make it not work or flow correctly. . . .

Games have taught me how to use menus. Lots of games make you apply patches. That forces you to use your computer, set up things and install programs. Video games are good with new technologies anyway, so when I look at a game I can look at how it was made and use the same technologies in my own games.

Charles' online experiences also helped him develop an increasingly keen set of visual literacy skills. As he noted:

[On my Web site] I have to make sure that the images express what I want them to. I have to make sure that it is accessible, and that it will work on other computers. You have to make sure that you don't just use text. Like if you go to a Web site it is nothing but text then you are like text, text, text, text. If you have an

image then you are like, Oh, that's what that means. This is especially true with video. Video tutorials are great to teach you how to like make models or something. They show you like what button to push and how to do things.

... I visualize what I am writing. Like in a story. You have to be able to visualize or write things down so that you can make sure you have all your thoughts straight; then you will know that your story won't be messed up. You won't say that he was born in like 1965 and that he is 70 years old. Because I have done that before.

As a result of his own literacy work online, Charles had definite ideas of 28 what coming generations of students, like his younger sisters, should be learning in school. The literacy curriculum he imagined for the future was focused around problem solving in online environments and developing visual as well as alphabetic literacy. As he explained:

Children watch cable right? They watch Nickelodeon right? Well next thing they see is a commercial for Nick.com and the next thing you know your sisters are all in your room playing games from Nick.com.

The Internet is just like everywhere. Students are going to have to know how to do it. It is going to be required. They will have to do a lot of projects using stuff from the Internet. They will have to get pictures off the Internet and stuff like that. Read maps on the Internet and stuff like that.

I would include like the history of icons. How they went back to the Byzantine Empire, the Roman Catholics when the church split. How to look at icons and know what they mean without words. Like that Nike symbol. I betcha every kid in South Carolina knows what that Nike symbol means because it is on all their shoes and clothes. Which icons are more recognizable? Which icons [do] teens recognize the most? And which [do] they recognize the least? And how [do] advertisers use this to create their slogans and stuff? I'd probably teach them how to create symbols for emotions, new symbols, not the smiley face. And then [we'd] see how easily other students could identify the symbols. That would be interesting.

We've included here a screen shot of the splash page of Charles's Web site, but 29 the image alone doesn't begin to do justice to the expertise he demonstrates in online game-design.<sup>1</sup> At this site, which opens on a splash page dominated by a menacing warrior in black, a character of his own creation, Charles introduces *The Quest of the Golden Fleece*, a game that he began designing after encountering the story of Jason and the Argonauts in his English class at Berea High School. Charles describes his game with some pride in the site's introduction:

*The Quest of the Golden Fleece* is a real-time, 3-D, action FPG that is set in ancient mythological time: It has been in development for almost a year, and it is looking promising. The game is run on the Genesis3d engine, which rivals that of Half-Life and Quake engines.

<sup>1</sup>An example of Charles' expertise in online game-design environments can be experienced at <http://www.geocities.com/charliensane> in which he presents "The Quest of the Golden Fleece: Live the Myth" (Jackson, 2002).

## THE QUEST OF THE GOLDEN FLEECE

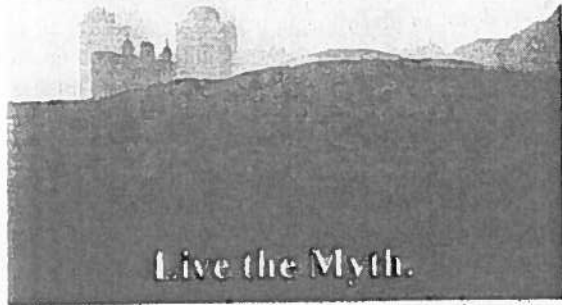


Figure 5

*The Quest of the Golden Fleece* is absolutely immersing. You can travel about the known world seeking out treasures or discovering new peoples. You can move through vast ancient cities communicating with townspeople, buying and selling goods, or being a gladiator in the many coliseums. You are Jason who must find the Golden Fleece so he can take the town of Thebes back from his evil Uncle Pelias. The gods play a major part in the journey as they may help or hurt you. The game allows you to choose which path you wish to take while maintaining a . . . flowing story line.

The Web site that Charles has constructed around this complex and intriguing game includes extensive sections entitled "screenshots," "game-play," "characters," and "tutorials," all composed by Charles. These sections, richly illustrated with colorful computer-based images and animations that Charles has created, are rife with allusions, both to the classical text of the *Odyssey* and to the classical texts of the online gaming world—the *Legacy of Kain* series, for example, with *Soul Reaver 2* among them.<sup>2</sup> With his creation of *The Quest of the Golden Fleece*, Charles has transformed the conventional literacy instruction that he was provided in his high school English class into the kind of digital literacy practices that he values outside of school and that he sees as integral to his success in the future.

### The Future of Literacy Studies in a Changing World

The four people in this chapter have all been, and in the cases of Brittney and Charles continue to be, not only insightful students of the new media but also 30 excellent students in general. With a great deal of support from their parents and teachers, they have all developed considerable skill and success in conventional

<sup>2</sup> These games can be accessed on the Web. See <http://www.legacyofkain.com/> for *The Legacy of Kain* and <http://www.eidosinteractive.com/gss/legacy/legacyofkain/main.html> for *Soul Reaver*.

educational settings and literacy environments. They make good grades, they write and read conventional materials with facility, and they have graduated, or will graduate, without difficulty, from the institutions they attended. If these students themselves have been successful, however, the formal literacy instruction they received may have been less so. Their teachers prepared them well for a world of print-based, alphabetic literacy, but these instructors provided very little official instruction or systematic guidance in those literacies that lay outside this very narrow bandwidth. In contrast, it is clear that Daniëlle and Joseph, along with Brittney and Charles, consider the reading and composing skills they acquired informally in electronic environments—literacies marked by the kinesthetic, the visual, the navigational, the intercultural; by a robust combination of code, image, sound, animation, and words—to be far more compelling, far more germane to their future success than the more traditional literacy instruction they have received in school.

This response should not surprise us. More than 30 years ago, in her book *Culture and Commitment*, Margaret Mead (1970) argued that the kind of educational efforts children found most valuable in preparing them to function successfully as adults depended, to a great extent, on the changes happening in the culture around them.<sup>3</sup> In stable cultures that changed slowly, Mead explained, students valued an education that passed along traditionally based knowledge from an adult-teacher who knew, from experience, how to handle many of the challenges that students would encounter later in life. In less stable cultures, however, cultures characterized by rapid change and disruption, by the “development of new forms of technology in which the old are not expert”

<sup>3</sup>In her 1970 book, *Culture and Commitment*, Mead describes three different cultural styles, distinguished by the ways in which children are prepared for adulthood. The first, the “postfigurative,” characterizes societies in which change is largely imperceptible and the “future repeats the past.” In such cultures, adults are able to pass along the necessary knowledge to children. “The essential characteristic of postfigurative cultures,” Mead maintained, “is the assumption, expressed by members of the older generation in their every act, that their way of life (however many changes may, in fact, be embodied in it) is unchanging, eternally the same” (p. 14). Education within such cultures privileges the passing down of traditional values and knowledge through an adult-teacher.

The second of Mead’s styles, that characterizing “cofigurative” cultures, arises when some form of disruption is experienced by a society. In this kind of culture, young people look to their contemporaries for guidance in making choices rather than relying on their elders for expertise and role models in a changing world.

A third, and final, cultural style—which Mead terms the “prefigurative”—is symptomatic of a world changing so fast that it exists “without models and without precedent” (p. xx). In prefigurative cultures, change is so rapid that “neither parents nor teachers, lawyers, doctors, skilled workers, inventors, preachers, or prophets” (p. xx) can teach children what they need to know about the world. The prefigurative cultural style, Mead argues, prevails in a world where the “past, the culture that had shaped [young adults’] understanding—their thoughts, their feelings, and their conceptions of the world—was no sure guide to the present. And the elders among them, bound to the past, [can] provide no models for the future” (p. 70).

In the prefigurative culture of the 21st century, then, it is little wonder that most adults have limited success in predicting the changes happening around them, in anticipating and coping with the world as it morphs through successive and confusing new forms. Similarly, it is little wonder that English composition instructors, and most writing programs, have had limited success in predicting and understanding the importance of visual, spatial, and multimodal literacies.

(p. 39), young people no longer have the luxury of relying solely on the information provided by their elders to equip them for a changing world. Instead, they depended on the help of their peers and on their own efforts to figure out the skills they needed in the coming years.

Within this context, it is useful to think about the kind of world, and the pace of change, that confronts Dànielle, Joseph, Brittney, and Charles. When Dànielle and Joseph were born, in 1973, for instance, personal computers had not been invented, nor had any modern computer networks been established. By the time they turned 10, however, Queen Elizabeth had sent her first e-mail message, and France had deployed the Minitel network to millions of its citizens. This rapid pace of change was to continue. By the time Dànielle and Joseph turned 20, and Brittney and Charles had begun attending first grade, both the Internet and the World Wide Web had been invented, and the World Bank and the United Nations had already established their own Web sites. Within another seven years, as Dànielle and Joseph were thinking about their graduate careers, and Brittney and Charles were making their way through secondary school in the year 2000, more than 93 million Internet host systems had been registered and the World Wide Web had reached a size of more than 1 billion indexable pages.<sup>4</sup>

By 2003, as Brittney and Charles were well into their high school careers, and Dànielle and Joseph were embarking on their professional careers, over half a billion people across the world had access to the Internet. A global snapshot at this time would show that among the countries of Europe, Germany, the United Kingdom, and Italy had the largest populations of people who access the Internet at home, and that the United States constitutes 29% of the global Internet, with Europe reporting 23%, Asia-Pacific 13%, and South America 2% ("Global Net Population Increases," 2003). It's also interesting to note that a recent Harris survey (HarrisInteractive, 2002) found that 93% of college students in the United States regularly use the Internet, making them the most connected segment of the U.S. population (92% of them say they own computers).<sup>5</sup>

None of these facts would surprise the four participants we have profiled in this chapter. Nor would they be surprised to learn that the United States Army had already designed and built a multimillion dollar simulation facility in which to hold virtual war games or that the Bankers Trust Corporation in New

<sup>4</sup> These markers of Internet development and many others can be found in *Hobbes' Internet Timeline*, compiled by Robert H. Zakon (1993-2003). Hobbes' timeline chronicles the growth of the Internet from 1993 to 2003, focusing primarily on the development of hardware, software, and networking systems. This timeline and others can be accessed from the Web site of the Internet Society at <http://info.isoc.org/Internet/history/>.

Here's the information Harris Interactive gives about the study:

The 360 Youth/Harris Interactive College Explorer™ Outlook Study is an online college survey from 360 Youth, Inc. and Harris Interactive. The study covers a variety of topics about the 18-30-year-old college market, from market power and influence, technology adoption and attitudes, to category penetration and spending.



York City had designed and used an online fantasy game, much like *Doom* or *Myst*, to provide corporate training on sexual harassment to its employees in the 1990s (Dillon, 1998). Indeed, it can be argued that Danielle and Joseph, Brittney and Charles already know a great deal about the world for which they were preparing themselves and a great deal about the specific skills they would need in order to function as literate citizens and productive employees in this changing online world.

These four cases document in very personal terms the dynamic culture of 21st century life in the United States. Danielle and Joseph, Brittney and Charles live in a very different world from the one inhabited by their parents and teachers. In this environment, the literacy education that teachers and parents provided to students a decade or a century ago will no longer do to equip people for success; too many major changes have altered our world in unexpected ways. Nation states previously isolated by impermeable borders have entered into geopolitical, monetary, trade, and environmental alliances that function regionally and globally. As the influence of nation states gives way, faster transportation, extended computer networks, and almost instantaneous communications systems support the exchange of information and people on a global scale. These transnational patterns, in addition, support the establishment of multiple and overlapping global authorities—The World Trade Organization, the World Bank, the United Nations—that extend people's understanding of political, economic, and social roles beyond the physical borders of their home countries.

These postmodern changes can be disorienting. As Manuel Castells (1997) points out, when power is "diffused in global networks of power, information, and images" (p. 359), disassociated with conventional centralized authorities like geographically determined nation states, social roles, political alliances, and traditional systems of authoritative values, people often feel alienated, fragmented, confronted with a disturbing loss of traditional authorities or conventional certainties.<sup>6</sup> But even as people are confronted by unstable and contradictory postmodern contexts, as Castells (1997) points out, they are also coping strategically with them as social and political agents. Increasingly, these groups and individuals assemble and communicate online, within the very computer networks that contributed to the unstable conditions in the first place. In such environments, for example, people like to participate in a new kind of identity politics anchored by the powerful connections of race, gender, history, and common interests, forming interest groups; political action groups; and groups focused on feminist, environmental, religious, or race issues. They also participate in social groups online, groups formed around

<sup>6</sup> In his outstanding series of three volumes, entitled *The Information Age: Economy, Society, and Culture* (1996, 1997, 1998), sociologist Manuel Castells charted the world-order transformations associated with the rise of the information age on a global level. Among the effects of these transformations are the decline of conventional centralized authorities like geographically determined nation states, political alliances, and traditional systems of authoritative values; and the increase of online criminal and terrorist activities. Castells also traced the emergence of identity politics online, especially groups focused on race, gender, history, and language issues.

gaming, dating, chatting about genealogy, films, or music. More important, Castells (1997) noted, as people exchange ideas in such groups—and often take action collectively—they are also involved in contesting, negotiating, and rewriting the new “social codes” under which societies will be “rethought, and re-established” in the coming decades (p. 360).

Literacy practices, it is clear, change dramatically within such online environments; texts must be able to cross national borders, time zones, language groups, and geographic distances; to resist the limitations of a single symbolic system and its attendant conventions.<sup>7</sup> They must communicate on multiple channels, using visual, aural, and kinesthetic elements as well as alphabetic components. To increase their effectiveness, such compositions may also become highly intertextual in terms of their resonance across media boundaries, as Diana George and Diane Shoos (1999) point out. Frequently, for instance, such texts bring communicative elements from television and movies to bear on the related texts of advertisements or games, thus establishing a network of meanings that play off of one another and gain strength from their cumulative allusions, much like what Charles described happening with Nickelodeon or the Nike icon. In such a world, it is of little wonder that Dànielle and Joseph, Brittney and Charles found their formal English composition instruction to be of limited interest. As with most contemporary writing instruction now offered in schools, their work in these classes focused on informative, technical, or creative writing, and it fell almost exclusively within the narrow bandwidth of the alphabetic. The skills they developed in these classes, although useful in some arenas, are not fully capable of preparing young people for a world that will depend on visual literacy, web literacy, gaming/simulation literacy, in short, multimodal literacies.

At the same time, within this dynamic environment, the self-sponsored literacy skills that Dànielle and Joseph, Brittney and Charles have developed online assume new currency and new importance. In a world dominated by computer networks that extend across language and cultural borders, business and industry, governments and organizations, individuals and groups have already begun to understand and value the visual literacy skills that Joseph has developed. Similarly, the coding and web-design literacy that Dànielle has acquired; the online language studies in which Brittney participates; and the collaborative problem-solving and gaming literacy that Charles has pursued have become increasingly valuable skills within new online environments.

These abilities represent the new literacy practices and values that educators must begin to recognize and integrate into formal classroom instruction if the United States and other countries hope to prepare citizens who can function effectively in the online communication environments that characterize

<sup>7</sup>The excellent work of The New London Group makes an eloquent case for multiliteracies in a world characterized by online communications that must cut across traditional geopolitical, linguistic, and cultural borders. We recommend the 1996 *Harvard Educational Review* article entitled “A Pedagogy of Multiliteracies” and the 2000 volume, *Multiliteracies*, edited by Bill Cope and Mary Kalantzis for The New London Group. Additionally, the valuable work of Gunther Kress (1999), “‘English’ at the Crossroads,” made a closely related case for teachers of English composition.

the 21st century. To accomplish this task, educators, certainly those who teach English composition only in its more conventional forms, will need to change their attitudes about literacy in general, and they will need additional technology resources so that they can work more closely with students to learn about the new, self-sponsored media literacies these youngsters are developing and practicing online. Among these resources will be regularly updated computers and software, adequately wired school and university buildings with connections to the Internet, help from knowledgeable technical staff members, and additional professional development aimed at new-media education.

Teachers armed with these resources can then work collaboratively with students to develop meaningful assignments that will bring new literacies into composition classrooms in ways that both engage and challenge contemporary learners. For example, although students like Brittney and Charles have a great deal of situated practice with new-media literacies, they both need more overt instruction to be able to articulate the various rules and conventions adhering to specific kinds of communications within different cultural contexts. These young people also need help in framing their understandings critically so that they can question their own judgment and look at their work from the perspectives of audiences increasingly different from themselves. Finally, these students need a teacher's help in learning how to transform their practices—to transfer their knowledge of new-media literacies into other contexts, cultures, or areas of endeavor.<sup>9</sup>

Within such an environment, teachers could pay increased attention to the new-media literacies students bring to the classroom, comparing these literacies to more conventional literacies and seeking to learn from this comparison more about the worlds that students inhabit and believe they will face in the coming years. Students would be able to take advantage of their teachers' perspectives, enhancing their new-media practices in ways that they might not accomplish on their own. With a range of emerging, competing, and conventional literacies in play, and with both teachers and students focused on how to meet the needs of different audiences, how to communicate information in a variety of formats, and how to accomplish their communicative purposes most effectively within a full range of media contexts, classrooms might become more like the places we all wish they would be: vigorous teaching and learning environments, characterized, as educator Paulo Freire (1990) suggested, by a kind of reciprocal learning in which

... the teacher of the students and the students-of-the-teacher cease to exist and a new term emerges: teacher-students with students-teachers ... They become jointly responsible for a process in which all grow. (p. 67)

<sup>9</sup> The pedagogical framework we outline here, and the terms we employ, are those of The New London Group. In the groundbreaking book *Multiliteracies*, edited by Bill Cope and Mary Kalantzis (2000), these scholars lay out a multiliteracies pedagogy that relies on four broad approaches to instruction: situated practice, overt instruction, critical framing, and transformed practice (pp. 239-248).

## References

- Bolter, Jay David. (1991). *Writing space: The computer, hypertext and the history of writing*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Castells, Manuel. (1996). *The rise of the network society* (Vol. 1 in *The information age: Economy, society, and culture*). Malden, MA: Blackwell.
- Castells, Manuel. (1997). *The power of identity* (Vol. 2 in *The information age: Economy, society, and culture*). Malden, MA: Blackwell.
- Castells, Manuel. (1998). *End of the millennium* (Vol. 3 in *The information age: Economy, society, and culture*). Malden, MA: Blackwell.
- Cope, Bill, & Kalantzis, Mary. (Eds.). (2000). *Multiliteracies: Literacy learning and the design of social futures*. London: Routledge.
- Dillon, Nancy. (1998, September 25). *Games make training child's play*. Computer World site. Retrieved May 2, 2003, from [http://www.computerworld.com/news/1998/story/511280\\_26370,00.html](http://www.computerworld.com/news/1998/story/511280_26370,00.html)
- Freire, Paulo. (1990). *Pedagogy of the oppressed* (Myra Bergman Ramos, Trans.). New York: The Continuum Publishing Company.
- George, Diana, & Shoos, Diane. (1999). Dropping bread crumbs in the intertextual forest: Critical literacy in a postmodern age. In Gail E. Hawisher & Cynthia L. Selfe (Eds.), *Passions, pedagogies, and 21st century technologies* (pp. 115–126). Logan: Utah State University Press.
- Global Net population increases. (2003, February 25). Retrieved May 2, 2003, from [http://www.nua.ie/surveys/?f=VS&art\\_id=905358729&rel=true](http://www.nua.ie/surveys/?f=VS&art_id=905358729&rel=true)
- HarrisInteractive. (2002, July 29). College students spend \$200 billion per year. Retrieved May 1, 2003, from <http://www.harrisinteractive.com/news/allnewsbydate.asp?NewsID=480>
- Jackson, Charles. (2002). The quest of the Golden Fleece: Live the myth. Retrieved May 1, 2003, from <http://www.geocities.com/charliensane>
- Kress, Gunther. (1999). 'English' at the crossroads: Rethinking curricula of communication in the context of the turn to the visual. In Gail E. Hawisher & Cynthia L. Selfe (Eds.), *Passions, pedagogies, and 21st century technologies* (pp. 66–88). Logan: Utah State University Press.
- Mead, Margaret. (1970). *Culture and commitment: The new relationships between the generations in the 1970s*. Garden City, NY: Doubleday.
- Zakon, Robert H. (1993–2003). *Hobbes' Internet timeline, v6.0*. Retrieved April 21, 2003, at the Web site of the Internet Society at <http://info.asoc.org/internet/history/>

## Questions for Discussion and Journaling

1. Compare your own literacy influences to the literacy influences of each of the four case studies. Which case study do you most relate to? Why?
2. What do the writers mean when they argue that we “compose meaning not only with words, but also with digitized bits of video, sound, photographs, still images, words, and animations” (see para. 2)?
3. How do we “compose” meaning? List all the kinds of composing you do that includes more than words. Which do you find most satisfying? Why?