

Literacies At The End Of The Twentieth Century



Dear Friends,

As we step into the 21st century, several forces are dramatically reshaping how we live our lives. Swift advances in technology have resulted in an abundance of new, often unfiltered information that pours into our homes, schools, and places of employment every day. At the same time, our shrinking world necessitates growing interdependence, asking its citizens to cooperate across borders, languages, and cultures.

Today's environment is ripe with possibilities for universal education, broad political participation, and increased equality. Yet it also brings fresh demands as we try to keep pace with the skills that must be learned in order to capture the historic opportunities presented before us. It is within this context that the meaning of literacy has come under examination. The evolution from oral communication to text to television to computer predicates an expansion of literacy's traditional definition, leading us to ask, What is the meaning of literacy in an age of rapidly changing technologies and growing diversity?

In January 2000 Pacific Bell and the Graduate School of Education & Information Studies at UCLA partnered to address this question. Together we formed the Pacific Bell/UCLA Initiative for 21st Century Literacies, a two-year project that will explore different perspectives on the forces behind the explosion in the availability of information and their implications for literacy.

The UCLA Graduate School of Education & Information Studies is ideally suited to play a key role in this field. Our graduate school uniquely combines Departments of Education and Information Studies, retains a nationally-recognized faculty, offers top-ranked professional degree programs, houses an on-campus laboratory elementary school, and provides local support through our extensive community outreach programs. In addition, UCLA maintains a world class library system.

For years, Pacific Bell has been a leader in bringing technology to California's classrooms and providing training and support for teachers. We are excited about the private-public partnership represented by the Initiative for 21st Century Literacies and want to express our gratitude to the people at Pacific Bell for their foresight into the importance of this issue and the generous support that has resulted.

Sincerely,
Pacific Bell/UCLA Initiative Co-Directors



A I M É E D O R R
Dean and Professor
Graduate School of Education & Information Studies
UCLA



H O W A R D B E S S E R
Associate Professor
Graduate School of Education & Information Studies
UCLA

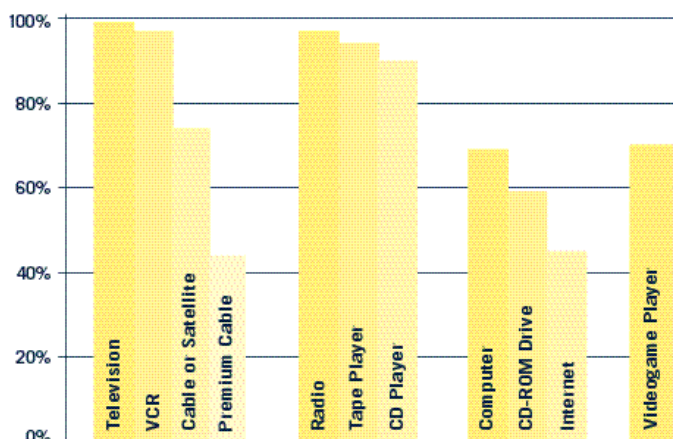
Literacies At The End Of The Twentieth Century

The twentieth century was witness to stunning changes in the media and technology that could be used for work and play. Alongside traditional print media, there appeared radio, film, television, and computers. As newer media impacted our lives, the older media did not disappear. They adapted. Each has now had many guises and ever evolving forms. Television and its relatives such as video and cable have taken over our homes. Computers, once limited to large mainframes, now come in all sizes and occupy every niche of our lives. Today's personal computers far exceed the computer power once found only in the military and major corporations. The Internet, once the exclusive domain of the select few, has become commonplace. Everyone, from children to senior citizens, is going online. Cyberspace has doubled in size every year since 1990. The World Wide Web has become an indefinitely large, semi-chaotic collection of information in a profusion of texts, graphics, images, and multimedia material. Anyone can put anything on the Web, making it essential that users have the ability to discriminate between high quality, reliable information and misleading, inaccurate information, and everything in between.

“Noticeably absent from many discussions of information literacy is the idea that today’s participants are not only passengers but also drivers on the information highway. Knowing how to find, evaluate, and synthesize information is essential; understanding how to produce and present information even more so if we want full citizenship for everybody.”

— YASMIN KAFAI
Associate Professor
Department of Education

SPRING 1999



American homes with children 2-18 years of age were full of media and technology. Graph shows percent of homes with at least one.

DONALD F. ROBERTS, ULLA G. FOEHR,

WIRING UP FOR A NEW CENTURY

We are wiring our schools, libraries, and homes. Today, nearly every American public school teacher has access to computers and the Internet somewhere in the school, almost every public library is connected to the Internet in some way, two-thirds of the homes with children 2-18 have a computer, and nearly half have Internet access. Two years of Net Day demonstrated the national determination to put computers and Internet access into young people's spaces. Teachers are giving students assignments that require them to use technology. But technology keeps changing. And the “old” media and technology have not disappeared.

ACCESS NOT ENOUGH

Faced with such a rich technological environment and evidence that children, teenagers, and college students often

lack sufficient skills to use available media and technology effectively, many people have proposed some new learning goals. The knowledge, skills, and values essential for intelligent use of media and technology have usually been termed a literacy — media literacy, information literacy, visual literacy, computer literacy, and others. “Literacy” may be a little glorified conceptually. But it gets the point across. Literacy advocates are interested in helping people be smart seekers, recipients, and creators of content, using various media and technology effectively to live responsibly and productively in our society. They apply these goals universally, that the “haves” and the “have nots” will be equally skilled, as well as having equal access. Reality has not caught up to

The heyday when a high school or college education would serve a graduate for a lifetime is gone... Today’s recipients of diplomas expect to have many jobs and to use a wide range of skills over their working lives. Workers must be equipped not simply with technical know-how but also with the ability to create, analyze, and transform information and to interact effectively with others.

ALAN GREENSPAN²

“New tools and technology present educators with new challenges. With the advent of the World Wide Web, students are finding themselves at the bottom of an information avalanche. The information literacy process provides students with the tools to dig through this information in a logical or conceptual way. The focus changes from memorizing and absorbing bits and pieces of data to thinking critically, analyzing and synthesizing information. As a result, students become more responsible for their own learning, thus awakening their natural curiosity and creating a zest to learn that lasts a lifetime.”

— JUDITH KANTOR
Librarian
Seeds University Elementary School

— SHARON SUTTON
Coordinator of Technology & Outreach

SPRING 1999

99% of all public school teachers had access to computers and the internet somewhere in their school.
41% had students using applications such as word processors and spreadsheets.
30% had students carrying out research using the Internet.
27% had students carrying out research using CD-ROMs.
27% had students solving problems and analyzing data using technology.
24% had students producing multimedia reports and projects.
19% had students use technology to make graphical presentations.
17% had students use technology for demonstrations and simulations.

CASSANDRA ROWARD³

the vision, but the vision is there.

The Pacific Bell/UCLA Initiative on 21st Century Literacies will work both from the user side and from the system side to identify means of enabling people to use the new century's media and technology well. On the user side, an important part of this effort is building upon the 20th century work on literacy, focusing on that conducted in the United States. Above and beyond reading and writing — traditional text-based literacy, what literacies have been recommended for American children today? Currently, what are the most active and promising areas of work?

INFORMATION LITERACY TAKES OFF

Information literacy is a newly important literacy as we move from one century to the next. The Pacific Bell/UCLA Initiative has been constructing a bibliographic database to support our work and has already put into it more than 1300 items about information literacy. All were published in the last five years! The term information literacy appeared in the professional literature as early as the 1970s. Only recently has information literacy become an area of great activity. Well it might, given the phenomenal growth of the Web as a vast, unfettered repository of information — and a lot else.

In 1989, the Final Report of the American Library Association (ALA) Presidential Committee on Information Literacy defined information literacy as follows: “to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information.”⁴ Variations on this definition and explicit standards have been offered by other U.S. organizations, such as the Association of College and Research Libraries, the American Association of School

“Good design doesn't just affect the look or attractiveness of an information system; it also determines the usability and legibility of the system and its information.”

— MARCIA J. BATES
Professor
Department of Information Studies

THE BIG6 SKILLS™ APPROACH TO INFORMATION PROBLEM-SOLVING

1. Task Definition
 - 1.1 Define the problem.
 - 1.2 Identify the information needed.
2. Information Seeking Strategies
 - 2.1 Brainstorm all possible sources.
 - 2.2 Select the best source.
3. Location & Access
 - 3.1 Locate sources.
 - 3.2 Find information within sources.
4. Use of Information
 - 4.1 Engage (e.g., read, hear, view).
 - 4.2 Extract relevant information.
5. Synthesis
 - 5.1 Organize information from multiple sources.
 - 5.2 Present the result.
6. Evaluation
 - 6.1 Judge the result (effectiveness).
 - 6.2 Judge the process (efficiency).

MICHAEL EISENBERG & ROBERT
BERKOWITZ⁵

Librarians, the California School Library Association, the Institute for Information Literacy, the National Forum on Information Literacy (a coalition of over 75 organizations), and the Association for Educational Communications and Technology and by other American proponents, such as Patricia Breivik, Susan Curzon, David Loertscher, and Kay Vandergrift. In the late 1980s, Michael Eisenberg and Robert Berkowitz developed a related concept that has also been well accepted, “The Big6 Skills™ Approach to Information Problem-Solving.”

ADVENT OF THE WEB ENERGIZES INFORMATION LITERACY MOVEMENT

The most vigorous proponents of information literacy have been librarians, other information professionals, and scholars in these areas. In fact, more than half the information literacy items in our database were found in just three bibliographic services, all in the library and information science field. It is easy to understand why. Wherever they work,

librarians know all too well that most of us are not savvy information seekers and users. For years, they have recognized that young people need to learn these skills; very often librarians have taught them. As noted by the Institute for Information Literacy, "Information literacy may be a hot new term in the higher education lexicon as we talk about living in the Information Age. However it is not a new concept. The idea of resource-based education is an old one and librarians have been involved in teaching the effective use of information resources for over a century..."⁶

Librarians have seen, as have others, that the Web can make it harder, not easier, to be skillful information users. Young people, in particular, get lost in the Web. They often fail to recognize a relevant site. They have difficulty deciding when information is trustworthy. They may find sites we wish they had not found. The increasing use of the Web as an information resource in and out of school — and the phenomenal growth of the Web — only adds fuel to a long simmering fire. The need to help young people be smart information managers is more pressing than ever.

Notions of information literacy fit very well into education, as K-12 and higher education librarians know. As expressed last year in the Los Angeles Unified School District's Student Learning Standards for Language Arts, "Upon graduation from the LAUSD, students will be able to locate, evaluate, and synthesize information for specific pur-

"With the proliferation of technology in public and private arenas, it is important for teacher education programs to develop strategies for ensuring that teacher candidates are able to understand the complexity of information literacy. Teachers must be prepared to use technology for their professional growth and learning. In addition, teachers need to be able to teach in ways that connect to students' lives and expand their students' understandings, knowledge, and use of technology."

"The Internet is changing the patterns of use and the mix of services offered by public libraries. Librarians are taking on new roles as trainers and educators, for example, as they guide patrons through the maze of cyberspace. They welcome the opportunities for expanded service that new information technologies provide, but they also

acknowledge some tough challenges.

Librarians have struggled to find an effective policy response to the uncontrolled and

contentious content available online.

They have had to look beyond traditional first amendment arguments to both technological and educational strategies in their efforts to help their diverse patrons explore the Internet effectively and responsi-

The number of World Wide Web sites doubles every six months. In 1999, there were about 63 million hosts and 8 billion pages on the Web. Someone would have to surf more than 300,000 pages a day to see it all.

FRANK BIOC CA⁷

poses, using a variety of sources, including interviews, the library/multimedia center, and a range of current technology.⁷⁸ Moreover, information literacy is essential for successful implementation of inquiry-based and project-based learning, and for learning with primary resources. And many expect that information literacy skills will be essential as life-long learning becomes the norm. It is not surprising, then, to see information literacy growing in popularity and influence.

MEDIA LITERACY PERSISTS

In addition to information literacy — and traditional reading and writing, or print literacy — other literacies have been important during the 20th century or are emerging now as important. Each shares something with information literacy; each brings in or emphasizes something different. Conceptually, the broadest of these other literacies is media literacy. Media literacy — or media education, media studies, or any of several other similar concepts — has been a vigorous area of work for several decades. It still is. In terms of the number of items in the Pacific Bell/UCLA Initiative bibliographic database, media literacy comes next after information literacy. So far, we have identified about 500 items published in the last five years.

In 1993, the National Leadership Conference on Media Literacy defined media literacy as “the ability to access, analyze, evaluate and communicate messages in a variety of forms.”⁷⁹ At first glance, this reads a lot like a definition for information literacy. But a closer examination of the two literacies reveals some crucial differences. Information literacy assumes that a person has an identified information need; media literacy does not. Media literacy issues apply when a person is engaged with media and technology idly, for relaxation and for fun, as well as intentionally to learn something. Moreover, in contrast to information literacy, media literacy makes much of the fact that the content one encounters or creates with media and technology is

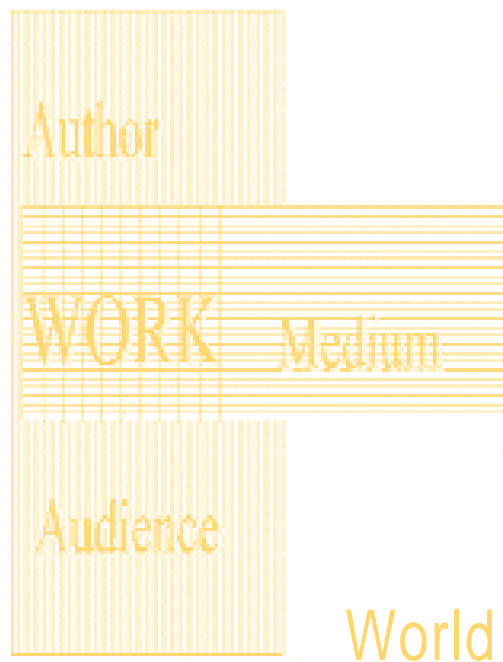
problematic and merits intelligent, critical engagement.

Media literacy advocates sometimes have a hard time agreeing on definitions, educational goals, and instructional techniques, but most agree on fundamental facts such as the following:

- | Media texts and messages are constructed;
- | Media texts and messages are produced within economic, social, political, historical and aesthetic contexts that influence their production;
- | The interpretive meaning-making processes involved in text and message reception consist of an interaction among the reader, the text, and the culture;
- | Media have unique “languages,” characteristics which vary in various forms, genres, and symbol systems of communication; and
- | Media representations play a role in people’s understanding of social reality.

Differences arise when media literacy advocates consider the implications of these facts. In something of a caricature, we can identify four pure types. Some celebrate the richness that media and technology can bring to our lives. For them, media literacy is being able to create content, use media and technology, and appreciate different genres and forms. Some fear the content of media and technology or any addictive quality of their use. For them, media literacy is protecting users and inoculating them against harmful content. Some see both good and bad

content and uses. For them, media literacy is self awareness, good taste, good choices, ability to interpret and evaluate, and self determination. Finally, some recognize cultural forces at work to privilege the views and welfare of some groups over other groups. For them, media literacy is participation in expanding the voices and visions available in media and technology and active resistance to any hegemonic influences. As real people, media literacy advocates are a mix of these types, while typically favoring one perspective over the others or self consciously combining perspectives.



Schematic of the interpretive framework recommended for a media literate creator or recipient. A WORK is that which is created or received (e.g., book, film, hypermedia stack). Taken from teacher professional development

VISUAL REPRESENTATIONS

A critical component of media literacy is interpreting messages conveyed in various “languages.” Of these, the visual elements of film, television, and increasingly computers have received the most attention. Visual literacy is needed to interpret and control the effects of images — images alone and images combined with words; images one receives and images one creates. Particularly when images are representational, as in much photography, film, and television, the naïve viewer may be led astray because he or she does not realize how much these images too are constructed and must be interpreted. Visual literacy sometimes encompasses artistic expression as well. Like media literacy, it has a long history and continues today to have a place — albeit a small one — in our multiple literacies pantheon. Given the nature of our media and technology, visual literacy is an essential part of media literacy.

Proponents of media literacy (including visual literacy and media education) come primarily from the fields of communications, media studies, the arts, education, and cultural studies. Among the active U.S. organizations are the National Alliance for Media Educators, The Center for Media Literacy, and the National Telemedia Council. Recognized American advocates include James Anderson, Patricia Aufderheide, Cornelia Brunner, David Considine, Renee

“It is predicted that users from linguistic minority communities and developing countries will be among those constituting the largest growth in Internet use. They will need multiple literacy skills to engage in the critical use of new technologies and to create linguistic and culturally appropriate content. Cultures and languages can thrive — a true diversity of voices — on an Internet which is currently predominantly Anglo-American.”

— CLARA M. CHU

“To be able to competently understand, analyze, and criticize the profusion of multimedia culture, we need to cultivate multiple literacies that develop a variety of skills building on traditional print literacy, a recent tradition of media literacies, and new computer, information, and multimedia literacies. This will require educators to restructure education to provide the skills needed to work with new technologies in the new millennium and to cultivate the capacities that will allow everyone to participate in the new economy and culture.”

Hobbs, Sut Jhally, Douglas Kellner, Robert Kubey, Peter McLaren, Paul Messaris, Elizabeth Thoman, and Kathleen Tyner.

Information literacy is clearly a denizen in the library and information science world; media literacy is not. Whereas more than half the information literacy items in our database came from three library and information science bibliographic resources, less than one tenth of the media literacy items came from these same resources. Instead they came from bibliographic resources focusing on education and communication, resources that increasingly include information literacy items.

OTHER 20TH CENTURY LITERACIES

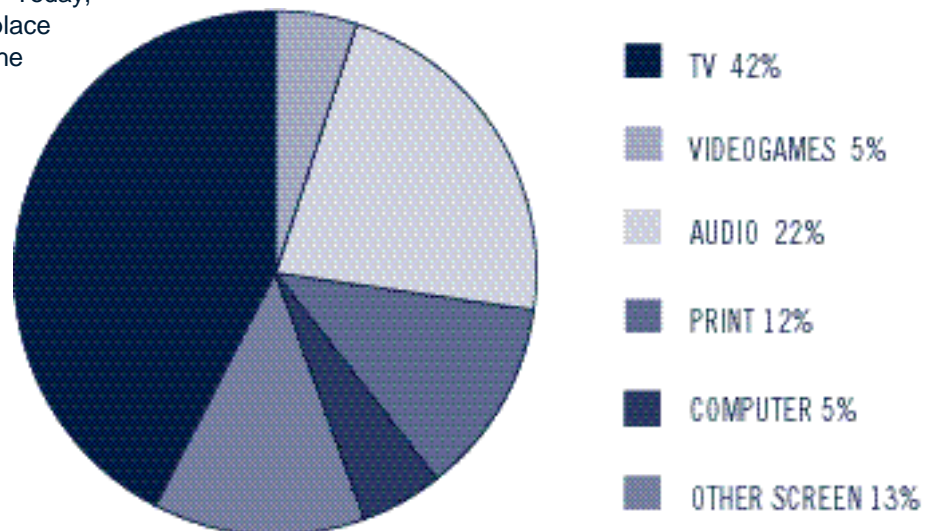
To round out this view of 20th century literacies, we need to touch on four more. Two are about the audiovisual media of film and television. One, film studies, reflects the celebrant perspective identified earlier as one type of media literacy,

but film studies — though not films — ordinarily stands apart from media literacy as an intellectual endeavor for the cineaste and the professional-in-training. The other, television literacy, was relatively prominent in the 70s and 80s, after social science research demonstrated that ordinary television could affect viewers' information, attitudes, beliefs, and behaviors. Today, the medium and the various perspectives reflected in the television literacy movement have been well incorporated into the broader perspectives of media literacy.

The remaining two literacies address computers and information technology. One, computer literacy, began as personal computers spread. Computers were so different — and so hard to use productively — that we focused on the ABCs of using them. Today, personal computers are commonplace and we are aiming higher. In 1999, the National Research Council, via its Committee on Information Technology Literacy, proposed information technology fluency as a goal for the next century.¹⁰ The name reflects a focus on deep understanding of information technology and on intelligent, skilled use of it. With time, we will know whether this proposed new "literacy" — information technology fluency — will take hold and flourish.

media, multi-technology, multi-literacy world. The prominent literacies — text-based literacy, information literacy, media literacy, and that newcomer, information technology fluency — are not technology specific. Neither are they technology independent. Each engages some media and technology, some content, and some purposes better than others. All envision creative, skillful, informed, thoughtful, purposeful, critical users. But they have somewhat different ideas about what facet of this ideal user most needs attention and what kind of attention it should get with which media and technology.

Some 20th century literacies fit more easily into schools, libraries, and workplaces as they are today. Others do not. On their own at home, young people — and



MULTIPLE LITERACIES INTO THE 21ST CENTURY

Clearly, as the 20th century is ending, we live in a multi-

Percent Time American Children 2-18 Spent at Home in 1999 In Non-School Uses of Various Media and Technology
DONALD F. ROBERTS, ULLA G. FOEHR, VICTORIA J. RIDEOUT, & MOLLYANN

An information environment is emerging from the simultaneous, rapid, and interconnected evolution of transmission systems, interfaces, and content quantity, quality, and structure. It will be easy to underestimate the collective impact of the sum of these changes on how young people communicate and absorb information.

1. Information expansion and

overload: Accessible networked information will continue to grow at a rapid pace for at least the next 10-20 years.

2. Rapid increase in interface diffusion: The number of access points into the Internet is expanding in number, variety, and mobility.

3. Evolution toward more embodied computing:

Interfaces are evolving to use more of the sensorimotor system to transfer information to and from the user.

4. The evolution of more intelligent sensors to interpret use behavior and intentions

5. Evolution toward anthropomorphic agent techniques: Computers are evolving to use more social and interpersonal

adults — use media and technology somewhat differently than they do at school and work. Though public libraries have emphasized informal, life-long learning since the 19th century, to date, U.S. literacy education focuses mainly on goals directly relevant to school and the workplace. It is a matter of some debate whether such efforts ought to be more inclusive. Compared to several other countries, the United States has been reluctant to bring out-of-school literacies into the schoolhouse. If we do not do this, how will our students fare in the world they are entering?

ONE STEP AHEAD IN AN EVER-CHANGING WORLD

Barring an unforeseen disaster of gigantic proportions, the new century will surely be more technical and more global. The quantity of information — or messages, media, or cultural forms, if you like — will become even more overwhelmingly large. Information technologies will further change the work we do and the nature of our economy. The need for life-long learning and job change will increase. Computer interfaces will become more varied and friendly to humans, perhaps so easy to use that they will seem self-evident. Intelligent agents and better technological systems will do some of the literacy work users now do. Audiovisual and computer technologies will merge and splinter. Access to distribution systems will increase and costs will come down. The opportunities for different voices to reach each other and new audiences will increase. The global will become even more local, and the local, more global. Other, unanticipated technological innovations will offer brand new opportunities and challenges.

No one can foretell the future exactly. It is rarely found on a straight line forward from the past. But we try nonetheless to anticipate cultural and social changes and to make formal and informal education responsive to them. With new technologies may come new literacies. But the need for today's "old" literacies will not disappear. Some will be transformed. As we move forward into the 21st century, it is up to us to identify the essential elements of current multi-literacies and promote them, to address the special characteristics of each of today's media and technology, and to create the personal and institutional flexibility to change and learn as the world does.

The Pacific Bell/UCLA Initiative for 21st Century Literacies Addresses Three Critical Areas:

E D U C A T I N G T H E U S E R : In order to develop a critical understanding of what materials already exist, GSE&IS faculty will evaluate current knowledge and practice in information, media, visual, cultural and other relevant 21st Century literacies. These frameworks will be assessed to distill and disseminate the most promising practices. Outcomes will include the development of guidelines for what constitutes an information literate student at appropriate mileposts in K-12 and higher education and for what teachers and librarians should know in carrying out their professional work with students and patrons.

I M P R O V I N G T H E I N F O R M A T I O N S Y S T E M : As the natural complement to educating the user, this project seeks to establish ways of designing optimal information delivery systems and materials. GSE&IS faculty will examine factors that inhibit efficient and effective use of an information system, and how best to design systems to match the literacy levels, technological capabilities, and other characteristics of the user. Outcomes will include a set of guidelines to influence the work of design professionals and others who develop information systems and materials.

A D D R E S S I N G P O L I C Y I S S U E S : Implicit in this project is a wide array of policy issues, including information literacy standards, issues related to the "Digital Divide," and privacy and ownership concerns. Toward the end of the two-year project, GSE&IS faculty will disseminate the results of policy research to both policymakers and the broader public to inform public discussion.

Graphic Design: LORA COKOLAT AND DANA POWELL

Photography: ASUCLA PHOTOGRAPHY

Writer: AIMÉE DORR

Special Thanks to Faculty in the UCLA Graduate School of Education & Information Studies for their thoughtful review and contributions and to Sheila Afnan-Manns, Coordinator for the Pacific Bell/UCLA Initiative.

PACIFIC BELL/ UCLA INITIATIVE FOR 21ST CENTURY LITERACIES

Graduate School of Education & Information Studies
University of California, Los Angeles
Los Angeles, CA 90095-1521
Phone: 310-794-6569
Fax: 310-206-4460
Web site: <http://www.newliteracies.gseis.ucla.edu>