

Connecting the Digital Dots: Literacy of the 21st Century

Literacy today depends on understanding the multiple media that make up our high-tech reality and developing the skills to use them effectively

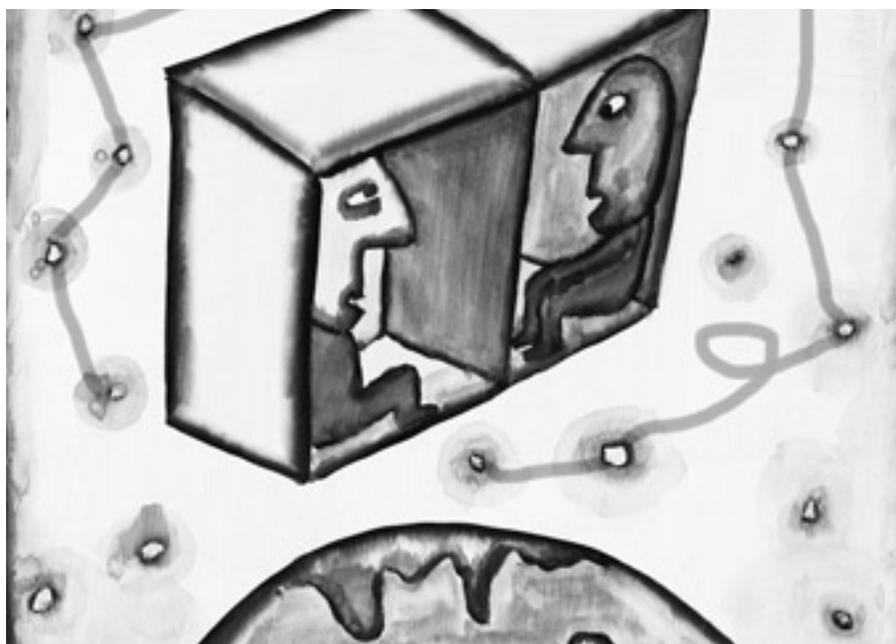
By **Barbara R. Jones-Kavalier** and **Suzanne L. Flannigan**

Prior to the 21st century, *literate* defined a person's ability to read and write, separating the educated from the uneducated. With the advent of a new millennium and the rapidity with which technology has changed society, the concept of literacy has assumed new meanings. Experts in the field suggest that the current generation of teenagers—sometimes referred to as the E-Generation—possesses digital competencies to effectively navigate the multidimensional and fast-paced digital environment. For generations of adults who grew up in a world of books, traveling through cyberspace seems as treacherous and intimidating as speaking a new language. In fact, Prensky¹ recognized such non-IT-literate individuals as burdened with an accent—non-native speakers of a language, struggling to survive in a strange new world.

Literacy Then and Now

Perhaps literacy, and numeracy for that matter, have never really been optional for fully functioning members of society. In our 21st century society—accelerated, media-saturated, and automated—a new literacy is required, one more broadly defined than the ability to read and write.

Was it always so? History provides examples of societies trying to build connectivity into their communications infrastructures two centuries ago.² Using the technologies of their time, people sought methods by which they might communicate faster, easier, and better. Today, we still seek better communica-



tion methods, only now we have myriad more choices, along with new tools and strategies and greater knowledge of effective communication.

Digital and visual literacies are the next wave of communication specialization. Most people will have technologies at their fingertips not only to communicate but to create, to manipulate, to design, to self-actualize. Children learn these skills as part of their lives, like language, which they learn without realizing they are learning it.³ Adults who did not grow up with technology continue to adapt from iteration to iteration. The senior population approaches the new literacy like a foreign language that is complex and perhaps of questionable use.

The New Literacy and Education

Our research suggests that the lack of education related to literacy is problematic, and the situation is exacerbated in the field of education. A common scenario today is a classroom filled with digitally literate students being led by linear-thinking, technologically stymied instructors. Although funds may be plentiful to purchase new equipment, wire classrooms, and order current software, few educational organizations have developed comprehensive technology plans that specify technical learning objectives or ensure successful integration of technology to enhance students' digital and visual literacy. We

have found a common void in professional development for faculty—training needed to gain the requisite computer skills to integrate technology into the curriculum effectively. Too often success occurs in pockets within the institution, where individually motivated faculty embrace advances in technology, mastering—on their own time—the skills needed to merge the digital world with academia.

Taking precedence over systematic planning is the trial-and-error approach to using technology in the classroom, specifically for nontechnical courses such as English or fine arts. Educational institutions have given priority to computer-based courses. An institutional *modus operandi* seems to justify technology funding for some disciplines over others. To approach the use of technology differently, to enhance teaching and learning across all departments, requires change. This change will be slow in coming, however, without vision combined with practical, recognizable goals and incentives that encourage people to embrace new digital and visual literacy skills individually and collectively.

Our Digitally Savvy Students

Our students are natives of cyberspace—they are digitally savvy. No longer does it suffice for a teacher to retype overheads into PowerPoint and have students take notes. No longer is it enough for a teacher to talk about another country and point to a given city while holding up a map. These days, new media literacy technical skills catapult traditional learning methods into orbit—traditional chalkboards and overheads with pens do not occupy the same realm as current capabilities. As an example, now teachers can do a PowerPoint presentation with streaming video, instant Internet access, and real-time audio-video interaction, and they can do it with relative speed and ease.

The greatest challenge is moving beyond the glitz and pizzazz of the

flashy technology to teach true literacy in this new milieu. Using the same skills used for centuries—analysis, synthesis, and evaluation—we must look at digital literacy as another realm within which to apply elements of critical thinking.

Connecting the Digital Dots

As we researched current articles, books, reports, and papers related to digital and visual literacy, it became evident that many definitions apply, and the skills needed for digital and visual literacy are still being identified. However, common findings aid in furthering our understanding and awareness of what it means to be literate in the 21st century. Our world today is about connecting the digital dots. The challenge is in dealing with the complexity—the dots are multidimensional, of varying sizes and colors, continuously changing, and linked to other, as yet unimagined dots. Nonetheless, to successfully connect the dots at any level in cyberspace means we must be literate, both digitally and visually. According to a recent report from the Workforce Commission's National Alliance of Business, "The current and future health of America's 21st century economy depends directly on how broadly and deeply Americans reach a new level of literacy—'21st Century Literacy.'"⁴

Defining Digital and Visual Literacy

Although a multitude of definitions exist related to 21st century literacy, our study focused primarily on digital and visual literacy—terms that often interact, overlap, or share common meanings. Digital literacy represents a person's ability to perform tasks effectively in a digital environment, with "digital" meaning information represented in numeric form and primarily for use by a computer. Literacy includes the ability to read and interpret media (text, sound, images), to reproduce data and images through digital manipulation, and to evaluate

and apply new knowledge gained from digital environments. According to Gilster,⁵ the most critical of these is the ability to make educated judgments about what we find online.

Visual literacy, referred to at times as visual competencies, emerges from seeing and integrating sensory experiences. Focused on sorting and interpreting—sometimes simultaneously—visible actions and symbols, a visually literate person can communicate information in a variety of forms and appreciate the masterworks of visual communication.⁶ Visually literate individuals have a sense of design—the imaginative ability to create, amend, and reproduce images, digital or not, in a mutable way. Their imaginations seek to reshape the world in which we live, at times creating new realities. According to Bamford,⁷ "Manipulating images serve[s] to re-code culture."

Weaved throughout the definitions of each term are a host of other subclassifications including information literacy, lateral literacy, and reproduction literacy. Specifically, each term defines skills inherent in a digitally or visually literate individual. The variations in terminology, including redundancies, represent the newness of this phenomenon. The lack of extensive or at least longitudinal research related to digital literacy and, most importantly, to its impact on the learner, also helps explain such variations and redundancies. Nonetheless, a common understanding has emerged—a leitmotif that characterizes a unique environment. Literacy, in any form, advances a person's ability to effectively and creatively use and communicate information.

The New Literacy Environment

Competency begins with understanding. Each medium represents a unique environment, presenting the view of our world from varying perspectives. Communications theorist Marshall McLuhan coined the idiom "the medium is the message,"⁸ which seems prophetic

in the high-tech reality within which we live. The idea that the world we shape in turn shapes us is a constant. Newspapers, television, and computers—all human inventions—help formulate our beliefs, perspectives, and even competencies. And from each medium we create new realities. Cultural theorist Jean Baudrillard used the term “hyperreality” to describe the simulation of something that never really existed.⁹ An example is a magazine photo of a model, the picture having been touched up or computer-enhanced—the creation of a new reality. Hollywood’s ultimate depiction of hyperreality was *The Matrix*, a movie about a world that does not really exist or exists only in our minds.

Ironically, while some see the profusion of realities as threatening to us, to our children, and even to democracy, the new media is nothing if not simply another way of viewing our world, of interacting with one another, of opening ourselves to learning in realms of possibility we never conceived of before. In

our development as higher-order thinkers, multiple realities are far less important to our survival than our ability to understand what we see, to interpret what we experience, to analyze what we are exposed to, and to evaluate what we conclude against criteria that support critical thinking. In the end, it seems far better to have the skills and competencies to comprehend and discriminate within a common language than to be left out, unable to understand. *e*

Endnotes

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4. 21st Century Workforce Commission,

A Nation of Opportunity: Building America’s 21st Century Workforce (Washington, D.C.: National Alliance of Business, 2000), p. 4.

5. P. Gilster, *A Primer on Digital Literacy* (Mississauga, Ontario: John Wiley & Sons, 1997).
6. B. A. Chauvin, “Visual or Media Literacy?” *Journal of Visual Literacy*, Vol. 23, No. 2, Autumn 2003, pp. 119–129.
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8. M. McLuhan and Q. Fiore, *The Medium is the Message: An Inventory of Effects* (Corte Madera, Calif.: Gingko Press, 1967).
9. J. Baudrillard, *Simulacra and Simulation* (Ann Arbor, Mich.: University of Michigan Press, 1981).

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