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Digital Literacy Skills

INFO-SAVVY, MEDIA-FLUENT,
TECH-TUNED

It is no longer enough simply to read and write. Students must also become literate in the understanding of visual images. Our children must learn how to spot a stereotype, isolate a social cliché, and distinguish facts from propaganda, analysis from banter, and important news from coverage.

—Ernest Boyer, past president, Carnegie Foundation
for the Advancement of Teaching

Before talking about the most obviously 21st century part of the P21 learning rainbow, the three digital literacy skills, take a moment to consider the sidebar, a fable about an unlucky kingdom that briefly blundered onto the bleeding edge of history.

Whether we're ready or not, the Knowledge Age has arrived, and today's World Wide Web version of King Wallace's World Wide Wall is fast becoming a permanent part of our everyday lives.

While we have not yet reached the good king's utopian dream of Lernalot, the Learning Society for all, we certainly have had our share of early experiences with the good, the bad, and the ugly sides of the wide-open communications and unrestricted online commerce and social networking projected in the fable.

The Once and Future Kingdom of Learning

In a kingdom long ago, but not too far away, there reigned an extraordinarily farsighted ruler, King Wallace, and his wonderfully practical and competent wife, Queen Nettie.

One stormy night, after a contentious day at court, King Wallace had an unusually vivid dream. He envisioned his kingdom transformed into a beautifully tranquil paradise dedicated to the glorious pursuit of learning, where all the world's knowledge was easily accessible all day every day, inscribed on a myriad of intricate stone walls throughout the land.

The kingdom was called Learnalot [trumpet fanfare].

In his dream, King Wallace gazed with amazement upon his loyal subjects, young and old, poring over the timeless words and great thoughts of the ages, chiseling brilliant new ideas, inventions, epic poems, and songs of great beauty and truth, all on this vast network of walls, hailed as the Great Wall of King Wallace.

The king watched as the Hard Ware Guild (the masons) furiously mortared stone upon stone to expand the network infrastructure, while the Soft Ware Guild (the plasterers) spread smooth, rewriteable firewall clay in countless even lines, forming neat rows and tables ready for users to inscribe, online, their data upon this base.

And this ever-increasing monument to technological innovation stretched far beyond the horizon, to the four corners of the firmament, until all the countless realms of the known world were connected to the one great World Wide Wall.

What moved him almost to tears, though, were the peaceful, contented faces of the people—so happy to dwell in a land where each and every soul could become learned and realize every inborn potential, where learning was truly king (next to His Royal Highness, that is).

“Ahhh,” he thought in his dream, “if only I could rule over such a peaceable and noble Knowledge Society.”

When he awoke, he found Queen Nettie gazing out the window with a most unbecoming look of horror. “Look my Lord,” she gasped, “something awful has befallen our kingdom—there are walls strewn hither and yon like a frightful maze of dragons upon the land. I knew you shouldn’t have insulted Morelan the Magician last night!”

“Tis just like my dream,” King Wallace muttered as he wobbled over to the window. “Yet a dream it surely is not—it is altogether real!”

“Oh, my beloved Queen,” he exclaimed, dramatically sweeping his outstretched arm across the panoramic view from the turret window, “behold . . . Lernalot! [trumpet fanfare]—the Noble Kingdom of Learning. And we, my dearest, are the Laudatory Lord and Leading Lady of Learning, the Magnificent Monarchs of Immortal Memorabilia, the Paragons of Pedagogical Prodigiousness, the . . .”

“I smell trouble,” interrupted Queen Nettie.

And down below in the streets, they witnessed an astonishing unfolding of walled-in sights: knights directing their pages to inscribe jousting tournament schedules, noting the odds and where bets could be made; the owner of the Upin Arms pub posting advertisements for a two-night, all-you-can-drink special; an entire section of the wall devoted to buying, selling, and auctioning everything imaginable, all under an enormous “Wall Mart” sign; an entire thoroughfare, “Wall Street,” dedicated to betting on the future prices of barley, butter, and beer; and much worse: lurid illustrations that would bring a blush to the face of any righteous mortal of the realm, plus a hefty subscription fee to fully reveal more unholy images.

What a nasty nightmare!

Soon there grew an uprising and wall-to-wall demands for a wall hanging of the king, led by Sir Ludd (with music provided by his midi-evil minstrel band, the Luddites). Their political platform rested on “the protection of the young and innocent from Wall Spam, the riddance of Crass Commercialization from the Commons, and the Resurrection of Declining Moral and Common Sense Standards.”

The protestors were soon joined by the Union of Serf Farmers, whose crops were blighted by the shade from “all them bloody walls.”

Day and night thousands marched through the shadowed rat maze of walls, voices united in one unending chant, tight-clenched fists raised with each thundering cry: “Off the Wall! Off the Wall! Off the Wall!”

Then one morning, as if a billion dotted bombs burst without sound, the walls crumbled and vanished into thin air. And everything seemed more peaceful and beautiful than ever before.

King Wallace turned to his Queen. “Alas, my Lady, you were right all along. We are not in the least ready for the great Knowledge Age or the noble Learning Society.

“Tis time to return to *your* plans my dearest—stronger fishnets for the fishermen, improved plows for the plowmen, better yeos for the yeomen—sensible solutions for our people and our times.

“Perhaps, my dear, one fine day in the far-off future, there will come a time when learning is truly king.”

“And queen,” added Her Highness.

All the more reason that our 21st century students need to acquire the skills to appropriately access, evaluate, use, manage, and add to the wealth of information and media they now have at their thumbs and fingertips.

With today’s and tomorrow’s digital tools, our net generation students will have unprecedented power to amplify their ability to think, learn, communicate, collaborate, and create. Along with all that power comes the need to learn the appropriate skills to handle massive amounts of information, media, and technology.

And so we return to the 21st century skill rainbow to consider:

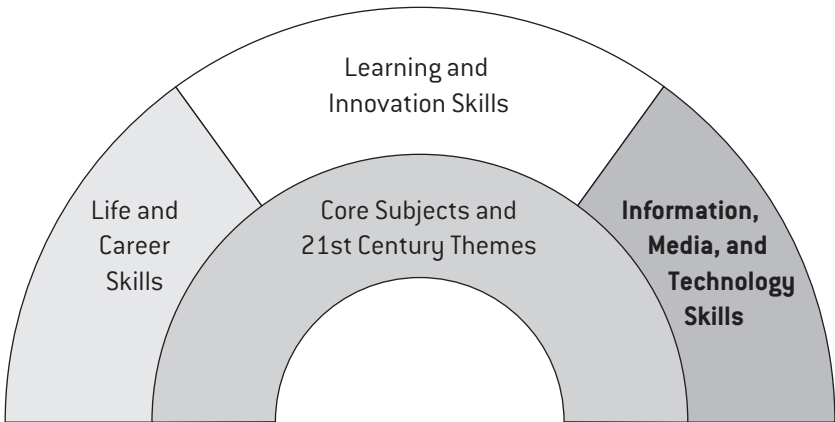


Figure 4.1. The 21st Century Knowledge-and-Skills Rainbow.

- Information literacy
- Media literacy
- Information and communication technology (ICT) literacy

Information Literacy

In the 21st century, everyone's level of information literacy and fluency will need to rise. Whether at work, in school, at home, or in the community, there will be increasing demands on our ability to

- Access information efficiently and effectively
- Evaluate information critically and competently
- Use information accurately and creatively¹

In the SARS project, a tremendous amount of medical, scientific, sociological, and governmental information had to be

collected, reviewed, compared, analyzed, summarized, and visualized for the students' Web site.

The students had to make sure the information was credible, accurate, and reliable. They had to decide which information was most useful and interesting and how to organize and display it to keep their users—students like themselves—engaged.

They also had to analyze and deal with ethical issues: In a large-scale viral pandemic like SARS, were the decisions as to who should be informed first the right decisions? How should information about preventing further spread of the disease be communicated? Would their Web site help people understand the disease better, or could it cause more fear?

The SARS students were applying all the component skills of Information Literacy in the P21 framework.

Many online resources are available for building information literacy skills (see Appendix A). Some of the best are from the American Association of School Librarians (AASL), who believe that librarians are becoming 21st century “digital directors” championing the effective use of information technologies in schools (see Appendix A). Their numerous publications and information literacy guides clearly explain such lessons as the importance of primary as opposed to secondary resources in research and how to assess the credibility of online information using corroborating evidence from multiple reliable sources.

Accessing, evaluating, applying, and managing information well, and using information sources appropriately and effectively, are just some of the skills that define 21st century digital literacy. Understanding how different types of media are used

Information Literacy Skills

Students should be able to:

Access and evaluate information

- Access information efficiently (time) and effectively (sources)
- Evaluate information critically and competently

Use and manage information

- Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information

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to communicate messages, how to choose from the many media choices now available, and how to create effective messages in a variety of media are also important.

We turn to those media-oriented skills next.

Media Literacy

Surrounded by digital media and media choices, 21st century students need to understand how to best apply the media resources available for learning, and to use media creation tools to create compelling and effective communication products such as videos, audio podcasts, and Web sites.

According to the Center for Media Literacy, media literacy skills provide “a framework to access, analyze, evaluate and create messages in a variety of forms, build an understanding of the role of media in society, as well as [develop] the essential skills of inquiry and self-expression.”²

“Media literacy” in this context refers to the medium of delivering messages (print, graphics, animation, audio, video, Web sites, and so on), the crafting of the message for a particular medium—the graphic “look and feel” of a Web site, for example, and the impacts the media message has on audiences. As the SARS team members demonstrated, it takes a high level of media literacy to select the right medium for a particular topic; obtain the proper permissions to reuse others’ material; design and create Web pages, graphics, animations, videos, and games (including selecting the right digital tools for the tasks); and even choose the appropriate communication methods to promote their work to other students.

All these skills go into building media literacy.

Organizations such as the Center for Media Literacy offer a variety of learning resources on topics ranging from the impact of media on youth smoking habits to the influence of media stars on young people’s values, from the history of visual communications to the camera and editing techniques used in documentary videos. (See Appendix A for further resources.)

ICT Literacy

Information and communication technologies, or ICTs, are the quintessential tools of the 21st century. As discussed in Chapter

Media Literacy Skills

Students should be able to:

Analyze media

- Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical and legal issues surrounding the access and use of media

Create media products

- Understand and utilize the most appropriate media creation tools, characteristics and conventions
- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multicultural environments

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Two, the net generation, today's "digital natives," are "bathed in bits" from birth, clutching remote controls, computer mice, and cell phones from an early age.

But using these tools well for learning is another story. A number of international organizations have been at work for decades to help close the world's digital learning divides and provide guidance on how best to use the expanding toolbox of ICT power tools for learning.

International standards for the educational use of technology have been created for students, teachers, and administrators by

the International Society for Technology in Education (ISTE) and UNESCO³ and hundreds of organizations around the globe are dedicated to helping integrate ICTs into the daily work of schools and education systems.

Though our tech-tuned 21st century students are often more fluent in the use of technology than their parents or teachers, they will always need guidance in how to best apply these powerful tools to complex learning and creative tasks.

Assessing the risks of using personal images and commercial music on a social networking Web site such as Facebook or YouTube often requires critical thinking, sound judgment, and an understanding of potential future consequences—considerations where students can certainly benefit from some firm adult guidance.

As the SARS project students demonstrated, the hard work comes in applying ICT tools effectively to advance your own learning while creating communication products that help others learn about the issue you care about.

There are a wide range of ICT literacy resources from many international organizations such as ISTE and the Consortium for School Networking (CoSN), from national organizations such as Becta (formerly the British Educational Communications and Technology Agency), from numerous ICT hardware and software suppliers, and from a wide variety of learning technology and education organizations. (See Appendix A for further resources.)

The three digital literacy skills—information, media, and ICT literacy—are continually evolving, and they are all essential to

ICT Literacy Skills

Students should be able to:

Apply technology effectively

- Use technology as a tool to research, organize, evaluate and communicate information
- Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate, and create information in order to successfully function in a knowledge economy
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies

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managing our ever-expanding tool sets of information, media, and communications technologies. These 21st century literacies are also powering the learning of many of the other skills in the P21 framework's rainbow.

In the next chapter we look at some of the age-old personal skills—the life and career skills—that are becoming more in demand as technology enhances learning, work, and life in the 21st century.

