MONICA MARTINEZ

New Literacies for a New Era

Have you noticed how many toddlers are almost proficient at technology? My friends' three-year-old knows how to scroll through her iPhone to view his own photos. Another friend's three-year-old swipes any iPhone he encounters to find buttons he can push in search of the games, assuming all of them have the same games as those that his mommy has loaded on hers.

None of us can deny that digital technology has been woven into our everyday lives, even for preschoolers. That means that we must simultaneously teach students to make meaning from written or oral human language and from patterns and visuals that will help them thrive and communicate in a highly complex world.

Technology and multimedia tools combined with social media are changing how we access information, view information, communicate, learn, and contribute. Information comes to us not only by words on a piece of paper but more and more through the powerful images and sounds of our multimedia culture. How then do we teach multiple forms of literacies to children? Visual literacy is one way to get there.

According to the International Visual Literacy Association, visual literacy is "the ability to evaluate, apply, or create conceptual visual representations. To be visually literate means being able to evaluate the advantages and disadvantages of visual representations, to improve shortcomings, to use them to create and communicate knowledge, or to devise new ways of representing insights."

Examples are endless and growing with technology: block diagram; calendar; cartogram; concept map; consequence or flow chart; cross-section; diagram with labels (picture glossary); flow map (with journey lines); graphs (bar, column, line, pie); iconic texts, such as signs; map sequences; maps with journey lines; nested diagram; numbered diagram; scale diagram; sequence map; signs and symbols; site map (tree diagram); sociogram; spectrum diagram; story map (a kind of flow map); tally sheet; timeline (simple, multiple, cyclical).

> **Learning to read words is no longer enough; students must learn to be visually literate as well.**

MONICA MARTINEZ is CEO, New Tech Network, Napa, Calif.

Visual literacy can help children learn to read — and to enjoy reading. In addition, using visualization can help highlight key vocabulary words being taught in class or explore

This "word cloud" of the text in this Innovation column was made by Wordle (www.wordle.net), a web site created by Jonathan Feinberg.

content and concepts as an extension of literacy development. Most important, using visualization and having students draw a diagram, map, or table helps children see how facts, ideas, or words are connected. For example, when teaching one main idea or word, teachers can use mind maps — an idea-processing tool that helps students generate, visualize, structure, and classify ideas, and aid in studying and organizing information as well as problem solve and write. With this visualization, the reader can see the information and determine and assess the patterns.

> **Information comes to us not only by words on a piece of paper but more and more through the powerful images and sounds of our multimedia culture.**

Of course, in middle school or high school, students can use visualization for more sophisticated forms of analysis and transform abstract thought efficiently into graphic, tangible forms and then apply this to linguistic literacy. For example, Kristina Lamour Sansone, founder of The Design Education Consultancy, has been working in Boston's High School Renewal Initiative with teachers of separate special education classrooms, second-language learners, and behaviorally challenged students to plan lessons

terrain, simulations of fluid flow, and so on all need to be expressed and taught visually. . . . Scientists need an alternative to numbers. A technical reality today and a cognitive imperative tomorrow is the use of images. The ability of scientists to visualize complex computations and simulations is absolutely essential to ensure the integrity of analyses, to provoke insights, and to communicate those insights with others" (DeFanti and Brown 1991). I believe that scientists aren't the only ones moving beyond text and numbers.

Today's extremely informational and visible world demands a whole new level of sense making. Tomorrow's future will require individuals to be able to discern meaningful patterns from information or data and to communicate meaningful patterns. But the teacher is still

"If you can read a map, draw a diagram or interpret symbols like 🚲 or 🚫 then you are visually literate. Visual literacy is the reading and writing of visual texts."

— Steve Moline, a writer, illustrator, photographer, designer, and literacy consultant whose web site is **www.k-8visual. info**

in which students design complicated, eye-catching visual arrays that reveal sophisticated reasoning and high levels of intellectual engagement. These organic "maps" weave together concepts, skills, connections, and comparisons and then are deconstructed and converted back into thoughtful, highly organized outlines and drafts for use in chapter summaries, research papers, essays, and portfolio artifacts.

Consider this: "Much of modern science can no longer be communicated in print; DNA sequences, molecular models, medical imaging scans, brain maps, simulated flights through a central in helping students make sense of the vast amount of information that new technologies allow them to access. With so much information bombarding them daily, students must learn critical thinking skills to evaluate and selectively use this information. The teacher acts as mentor, coach, and facilitator, supporting students through projects that apply these skills. How can we use images and visual literacy as the predominant means of instruction, and how can we help our youth develop new skills in creating and discerning meaningful patterns from data? **K**

REFERENCE

DeFanti, Thomas, and Maxine Brown. "Visualization in Scientific Computing." *Advances in Computing* 33 (Spring 1991): 247-305.

For examples of interactive visuals and using visual literacy in the classroom, see

http://museumca.org /picturethis/caption. html

www.nytimes. com/interactive/ 2009/03/03/us/2009 0303_LEONHARDT. html?ref=recession_ and_depression