

Visual Thinking Before Words

By Launa Ellison

Our brains devote massive areas to visual thinking thus it is crucial that all teachers understand how to nurture the visual cortex. Humans thought in pictures before words. Today, the more primitive the peoples', the more it is focused on visual literacy. Today, in our current culture, visual acuity is a prime factor for success. When the written word was invented printed pictures were rare. Now, visual information bombards our brains with signs, TV, the Internet and video games. Today we need more sophisticated visual literacy skills. Yet, few of us have been taught how to teach visual understanding.

It is helpful to begin with a biological overview of the brain's visual processing. Then continue with understanding differences between learning styles (AVK) and Howard Gardner's visual/spatial intelligence. We address teaching art skills and using art to teach content. Finally we call on teachers to include visual thinking throughout the curriculum.

In 1986 the Educational Testing Service released a report that reported a significant decline in visual skills in high school students and a warning that such skills are crucial for all engineering occupations, for doctors, architects and builders. At the same time Dr. Richard Sinatra, decrying the lack of visual thinking in his engineering students published *Visual Literacy Connections to Thinking, Reading and Writing*. He states, "Visual literacy is the active reconstruction of past visual experience with incoming visual messages to obtain meaning."

The visual right hemisphere matures earlier than the left language hemisphere. Non-verbal communication is understood by infants. Children learn by imitation, by doing what they see. Sinatra explains the primacy of visual literacy – the viewing and exploring of what is seen. This supports the growth of listening and speaking, and finally, the skills of reading and writing. As children learn to read, they remember words they can picture easily. "Truck" is remembered; "that" is not. Outlining the shape of words helps some struggling students remember the visual image of the words. Using different colors for vowels and consonants helps some learners. Other children learn by dividing syllables with different colors. Color overlays may help some students whose eyes get tired looking at black and white, or find color more interesting. There is a resurgence of using comics for reading instruction, particularly for boys.

Information from both eyes are fed to both hemispheres and sent to the back of the brain where there are eight paths. In the "what?" pathway there are areas that specialize in form and another in color. The "where?" path works on direction and position. The "who?" path for face recognition travels to the right hemisphere, just behind the ear, to the prefrontal lobe and then the amygdala. The brain does not see; rather it constructs a response according to the given stimulus. The brain processes

images 60,000 times faster than it processes text. Images provide significant information.

When we are walking in the park, the right hippocampus and parietal cortex are active. Other areas process the sense of beauty or frustration, linking emotions to what is being observed. Humor is not possible without visualization. If you can't "see" the person slipping on a banana skin, the joke is only words. The right hemisphere specializes to grasp wholes while the left breaks down parts to study details. The right hemisphere has more white matter, which means the axons are longer than the grey of the left hemisphere. These longer axons are able to connect with others over larger distances. Visual thinking dominates the human brain, using many more neurons than language. We must develop visual skills at all levels of life.

The International Visual Literacy Association presents hundreds of sessions at each conference addressing three overriding goals: 1) understand and interpret the meaning of visual messages 2) communicate more effectively by using well designed visual messages and 3) use visual thinking to organize and solve problems.

There are many ways to increase our teaching of visual thinking. Obviously teaching children to draw what they see is an important one. The art teacher taught my students techniques of line and color that I did not know how to explain. In my own classroom students drew our non-dominant hand once a month, studying our last drawing to increase our understanding of shading and creases. I also asked students to draw shells and budding twigs. They illustrated their writing and reflected on illustrations in books. Before trips to our art museums my students studied slides of pieces, asking questions on design and color to reflective on the artist's purpose. In social studies we discussed people's daily lives using books like *Material World* and *A Life like Mine: How Children Live Around the World*.

Geometry lends many lessons including Fibonacci. Six weeks before Valentine's Day, students began to make their Valentine containers. They looked at 2-D patterns of geometric shapes that they will enlarge and create 3-D "boxes" to hold their cards. This project takes many hours but the math and visual thinking is extensive. It is also interesting to figure out the area of illustration space versus print on a newspaper page.

Photography offers many opportunities to develop story lines. It also can be used to see high and low perspectives. A comparison of black and white images versus color makes an interesting discussion. Have students take inside pictures of restaurants and reflect on why the decorating colors were used. Students can use the Internet to find bizarre pictures or other categories. Internet pictures are helpful when creating personal collages expressing, "You are who you pretend to be." Dana.com has the Stroop test that shows how words and color can cause interference. Students make a grade comparing your results with others results.

Students can draw themselves using warm colors on one sketch and cold on another. They can copy a cereal ad by changing colors. They can present power point slides in cold and warm colors. Colors abound in our world. The *People* book gives us a page with the world in one color.

Additional thoughts on The Dual Brain. A 1985 speech at UCLA Medical Science Forum
By Dr. Roger Sperry,

“One important outcome (of the split brain research) is the increased insight and appreciation, in education and elsewhere, for the importance of nonverbal forms and components of learning, intellect, and communication. By the early 1970’s it already had become evident, from the standpoint of brain research, that our educational system and modern urban society generally, with its heavy emphasis on linguistic communication and early training in the three R’s, tends increasingly to discriminate against the nonverbal half of the brain, which has its own perceptual-mechanical-spatial mode of apprehension and reasoning. The amount of formal training given to the right hemisphere functions in our public school traditionally has been almost negligible, compared to that devoted to the specialties of the left hemisphere.”

Denise the Menace playing with a friend, “OK, now close your eyes and if you can see anything... you’re thinking!”