

Applying Visual Thinking Strategies in the Creative Arts to Develop Economic Leaders

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Thinking Strategies

Visual thinking is a valuable strategy for problem solving and communication. In the United State's economy today, many Americans are fighting for their jobs. Engineers lose their jobs to computers, customer service specialists lose their jobs to call centers with lower wages in other countries, and artists are rendered obsolete when a factory can mass produce their pieces. These workers must learn skills that make them more valuable than computers, factories, and outsourcing. Communicating through visual images (expression and comprehension) can transcend language, generation, and culture, giving its users tools to succeed in an ever-changing economy. Skills to develop and improve visual thinking can be learned through studying the arts, both in childhood development and throughout adulthood. Psychiatrist Lawrence Kubie writes,

We do not need to be taught to think; indeed... this is something that cannot be taught. Thinking processes actually are automatic, swift, and spontaneous when allowed to proceed undisturbed by other influences. Therefore, what we need is to be educated in how not to interfere with the inherent capacity of the human mind to think. (McKim, 1972, p. 28)

By exercising the "inherent capacity of the human mind to think" through creative innovation in the arts, the mind can apply these new tools to other disciplines to foster success in one's learning and career by facilitating strong interpersonal communication skills.

Art

For the purposes of this discussion, we will use the following definition of “art”:
“the expression or application of human creative skill and imagination... producing works to be appreciated primarily for their beauty or emotional power” (*Oxford dictionaries*, 2013). This definition includes (but is not limited to), painting, music, graphic design, filmmaking, dance, drama, sculpture, drawing, the culinary arts, and handmade craftwork. This paper will focus on the understanding of art beyond language and will not dive into the broad topic of the language arts.

Visual Thinking

Visual thinking is almost as complicated as “art” to define, but for the purposes of this discussion, “Visual thinking is carried on by three kinds of visual imagery: (1) The kinds that we see, people see images, not things, (2) The kinds that we *imagine* in our

mind’s eye, as when we dream, (3) The kind that we *draw*, doodle, sketch, or paint” (McKim, 1980, p. 7)

The word “draw” can also mean “create” when applying this visual diagram to other media.

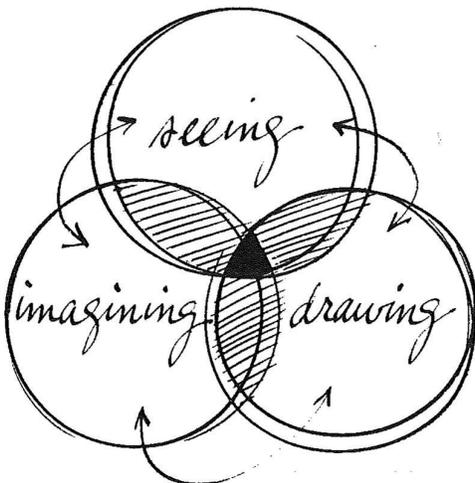


Figure 1. Interactive Imagery. Source: McKim, p. 8 (1980).

Where seeing and drawing intersect, seeing facilitates drawing (test this idea with this exercise: try drawing a basic image like a smiling stick figure with your eyes closed) and drawing records seeing. Where drawing and imagining intersect, drawing communicates imagining, and imagining provides content for drawing. Where imagining and seeing intersect, imagination expands upon visual information, and seeing gives content for imaging. “The three overlapping circles symbolize the idea that visual thinking is experienced to the fullest when seeing, imagining, and drawing merge into active interplay” (McKim, 1980, pg. 7).

When we think, we are using vehicles to process our thought. These vehicles are not the thoughts themselves, but rather, representations of our thoughts. Artists use these vehicles of thought to communicate with their audience.

There are paintings and sculptures that portray figures, objects, actions in a more or less realistic style, but indicate that they are not to be taken at their face value. They make no sense as reports on what goes on in life on earth, but are intended primarily as symbolic vehicles of ideas... Since the picture does not simply interpret life, the beholder faces the task of telling what it symbolizes. (Arnheim, 1969, p. 149)

One most basic vehicle that humans use is language. When we write or speak, we are not sharing our thoughts themselves, but we are using language as a vehicle to communicate our thoughts in a way that other people can share our ideas. Language

can be a very strong vehicle, but it is more inhibitive when compared to the above description of visual art as a vehicle for thinking.

In the words of Humboldt: “Man lives with his objects chiefly - in fact, since his feeling and acting depends on his perceptions, one may say exclusively - as language presents them to him. By the same process whereby he spins language out of his own being, he ensnares himself in it; and each language draws a magic circle round the people to which it belongs, a circle from which there is no escape save by stepping out of it into another.” (Arnheim, 1969, p. 242)

While other art forms might have cultural references (symbolic hand gestures in dance, references to royal family history in paintings, tonal references to traditional structure in music), some understanding and inspiration may be gleaned by experiencing these non-lingual arts. In contrast, a monolingual American looking at this page of the oldest extant complete manuscript of the *Kokin Wakashū* poetry anthology, a national treasure of Japan, could see that the shapes of the symbols are “pretty” but cannot interpret anything about its meaning.

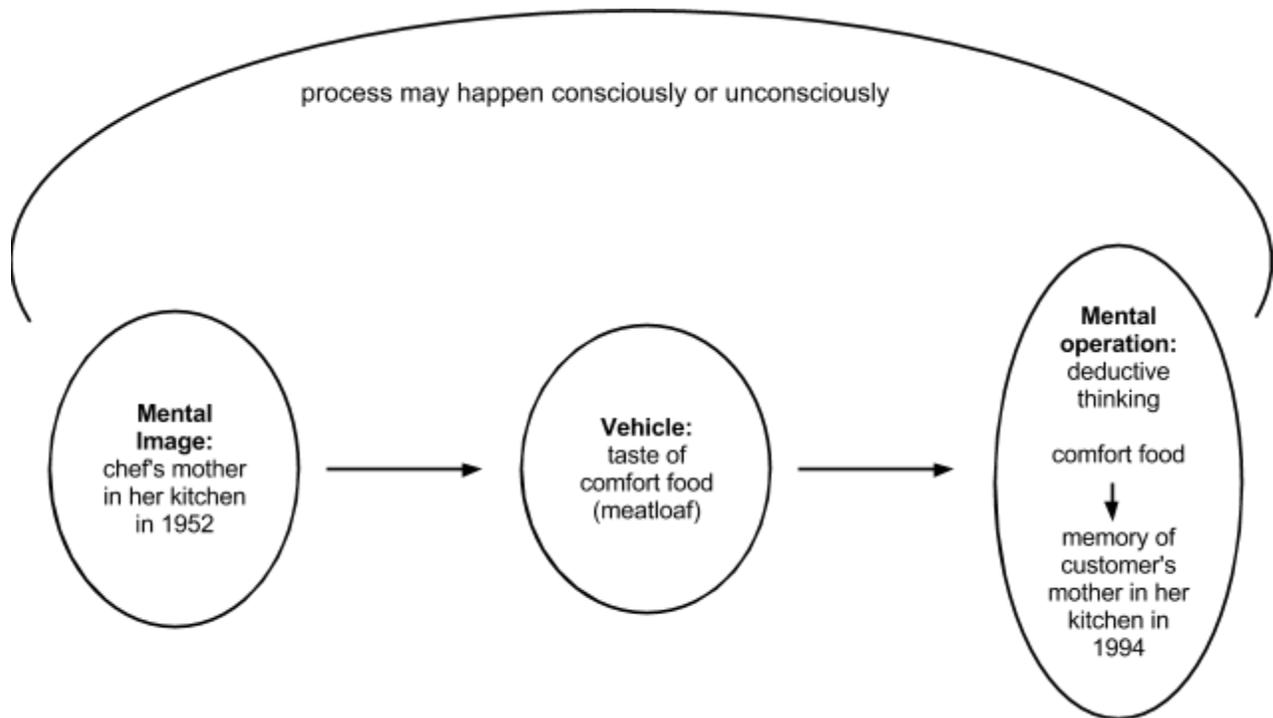


Collected Japanese Poems of Ancient and Modern Times (古今和歌集, Kokin Wakashū),
Gen'ei edition, 1120 AD

The non-lingual vehicles of thought include images, photographs, moving images, sounds, drawings/sketches, mathematics, smell, touch, taste, movement, and emotions, all of which are often used as vehicles in the arts to communicate a thought or concept.

These vehicles give us the imagery we need to create mental operations. These mental operations take the audience's understanding of the original thought (transported by a vehicle of thought) and conceptualize a new thought in the mind of the audience. Examples of thought operations include abstraction, rotation,

superimposition, analysis, synthesis, induction, deduction,



All this happens in various levels of our conscious thinking, including dreaming.

These vehicles of thought and mental operations are used very often, every day, by most people.

Visual thinking is constantly used by everybody. It directs figures on a chessboard and designs global politics on the geographical map. Two dexterous moving men steering a piano along a winding staircase think visually in an intricate sequence of lifting, shifting, and turning... An inventive housewife transforms an uninviting living room into a room for living by judiciously placing lamps and rearranging couches and chairs. (McKim, 1980, p. 8)

A more modern reference to visual thinking points towards a connection between visual thinking and viewing graphics on a computer, “The results are leading to a visualization movement in modern computing whereby complex computations are presented graphically, allowing for deeper insights as well as heightened abilities to communicate data and concepts” (Stokes, 2001).

Art, Visual Thinking, and the Creative Right Brain

The skills and tools for visual thinking can be strengthened by studying the arts. Betty Edwards, the author of *Drawing on the Right Side of the Brain*, says “Drawing is not really very difficult. Seeing is the problem, or, to be more specific, shifting to a particular way of seeing” (1999). This brings us back to McKim’s Diagram- the 3 overlapping circles of *seeing, drawing, and imagining*. When we both study art and practice our own art, we are “exercising” the right side of the brain and making stronger connects between our *seeing, drawing, and imagining* skills.

We have two sides of our brain, both important and both unique. “The left hemisphere specializes in text; the right hemisphere specializes in context... The left hemisphere analyzes the details; the right hemisphere synthesizes the big picture” (Pink, 2006, p. 20 and 22). The current education system in 2013 in the United States of America already places great value on left-brain skills. For instance, the California STEM Learning Network holds the vision “that all students in California have the knowledge and skills needed for success in education, work and their daily lives” (2012) and that they will gain these skills by studying STEM (Science, Technology, Engineering,

and Mathematics), traditionally left-brain fields. I propose that students who study these fields and can incorporate right-brained visual thinking will be the students who succeed and surpass their peers in their understanding of the concepts in their field. “Truly creative people in every field are ambidextrous- that is, capable of receiving with the left and expressing with the right” (McKim, 1972, p. 23). These creative thinkers and learners will also grow into great teachers, able to use their right-brain skills to communicate concepts to their students from many different learning styles.

Even the field of medicine, traditionally considered a scientific field, can use visual thinking for stronger understanding. A team of medical residents experienced a retreat in visual thinking and these scientists with strong left-brain strategies were impressed with the results. One doctor observed, “The increased visual literacy observed through this process may be useful as the interns begin analyzing X rays, increasing their awareness about the lights and shadows that may obscure disease processes, and in the analysis of EKG’s patterns” (Reilly, Ring & Duke, 2005).

Strategies practiced in visual thinking exercises keep both sides of the brain alert, involved, and available to make better informed decisions in any discipline of learning.

Visual Thinking Skills in Action

Abigail Housen and Philip Yenawine have developed a curriculum program called VTS (Visual Thinking Strategies) that is used internationally in museums and schools. Their mission is, “VTS transforms the way students think and learn through programs based in theory and research that use discussions of visual art to significantly

increase student engagement and performance” (2013). Teachers ask open ended questions and neutrally facilitate discussion, while students take the lead on making observations, finding evidence for their ideas about what they see, consider the views of their classmates, and find as many interpretations as possible (as opposed to one “right” answer). VTS’s website includes testimonies from teachers around the country. Jeff Williamson, principal of Old Adobe School in Sonoma, CA, says that “Students are listening, asking questions, forming new understanding, and then talking about that understanding.” He goes on to say that the whole community at Old Adobe School, students, teachers, and parents, has been positively impacted by VTS (2013).

Many artistic disciplines besides the visual arts of drawing and painting (and observing those drawing and paintings) can strengthen visual thinking skills. Andrew Stewart, a digital music composer, often thinks of his music visually before he transcribes a piece. “I see it in my head... lines, like a staff, but not a staff. Continuous horizontal lines, not just 5 lines, but lines all the way up and down. Then the notes are moving black circles on the lines” (Stewart, 2013). Sometimes, he says, he’s not even writing music as a form of audio artistry, but rather, the music is a way of expressing the visual patterns he sees inside his head.

Patrick Kolb, a film editor, had a similar statement. He said that when he wants to accomplish something with a video, he visualizes in his head what he wants to do and what it will look like. He could just play around, but if he is looking for a specific result for a job, he needs to know what he hopes the video will look like when it is

complete. “But I can’t do any of that if I don’t know how to use the programs” (Kolb, 2013). He must combine right-brain thinking (visualizing the finished product) and left-brain thinking (executing the intricacies of filmmaking software) to be successful in his field.

Advantages in Economic Competition using Visual Thinking

In his book, *A Whole New Mind*, Daniel Pink proposes that the relative importance of left-brain thinking is diminishing, while the corresponding importance of right-brain thinking is increasing (Pink, 2006, p. 30). He calls the causes: “Abundance, Asia, and Automation.”

“Abundance” itself is the very product of left-brain thinking. Our high standard of living in excess is the result of assembly lines, better engineering, and ever-expanding technology. We can make and sell more products than ever before. Americans have so much “stuff” that we have to put it somewhere else; our self-storage industry makes more money than the motion picture business. We have so much “stuff” that we have to throw it away; Americans spend more on trash bags than 90 other countries spend on *everything* (Pink, 2006, p. 33). Now that we have “everything”, “it’s no longer enough to create a product that’s reasonably priced and adequately functional. It must also be beautiful, unique, and meaningful” (p. 33). Companies need employees who can use right brain directed thinking to appeal to the emotions in consumers to make them want “more” when they already have enough.

Pink then introduces us to “Asia” and Srividya, Lalit, Kavita, and Kamal who live in Mumbai, India. These high-tech workers graduated from good universities studying engineering or computer science, and now they are employed at a large software company, helping write code for banks in North America. They each earn no more than \$15,000 a year for a job that would have a comfortable white-collar salary of \$70,000 in the United States. While their salary sounds miniscule, it “is roughly twenty-five times what the typical Indian earns - and affords them an upper-middle class lifestyle with vacations and their own apartments” (Pink, 2006, p. 37). This information is a nightmare for left-brain thinkers in the US in 2013. Today’s knowledge workers need to develop skills that cannot be accomplished abroad, such as “forging relationships rather than executing transactions, tackling novel challenges instead of solving routine problems, and synthesizing the big picture rather than analyzing a single component” (p. 40).

Our final battle is against “Automation” and the rise of the computer. Computer scientist Vernor Vinge says “anybody with even routine skills could get a job as a programmer. That isn’t true anymore. The routine functions are increasingly being turned over to machines” (Pink, 2006, p. 44). In many fields, computers can accomplish the work a human would complete in one day, in less than one second. Jobs that can be completed by computers more quickly, more accurately, and for less money, are laying off a large number of employees and hiring a small number of computer programmers.

The demonstration of right brain thinking (emotional awareness, observation, and decision making skills that computers cannot demonstrate) will be the only way to stay afloat in today's economy.

To survive in this age, individuals and organizations must examine what they're doing to earn a living and ask themselves three questions: (1) Can someone overseas do it cheaper? (2) Can a computer do it faster? (3) Is what I'm offering in demand in an age of abundance? ...Mere survival today depends on being able to do something ...that involves the ability to create artistic and emotional beauty, to detect patterns and opportunities, to craft a satisfying narrative, and to combine seemingly unrelated ideas into a novel invention. (p. 51-2)

With an education that focuses on **both** left brain thinking and right brain creativity, developing students can strengthen their marketable skills to compete for jobs in our world of Abundance, Asia, and Automation. These skills can be exercised with visual thinking exercises, visual thinking strategies (including, but not limited to, VTS curriculum), and a creative, observant eye. With the flexibility of many vehicles of thought and diverse mental operations, ambidextrous thinkers who can see, imagine, and draw (meaning "create") can compete with success in today's economy for leadership positions.

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Tokyo National Museum (1120 AD). Kokin Wakashu Genei (public domain) [Web Photo].

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