

# Visual Learning

## Building Knowledge, Innovation and Collaboration

By Eileen Clegg

### A Fresh Look at Imagery

As cognitive psychology explains more of the mystery behind how images work on the human brain, visual learning increasingly is understood as a powerful tool strategic tool for organizations. At the same time, the digital revolution is connecting a global community through a format that relies on visual language to reduce text and translate across different languages. As a result, the long separated worlds of “art” and “information” are coming together in surprising new ways, facilitating knowledge, innovation, and collaboration.

This paper examines some of the ways images work to enhance learning and communication today. Footnotes link to research that help understand the social and cognitive reasons why visualization is a powerful tool. Examples at the end of each section link to work from the author’s portfolio demonstrating these ideas presented in this paper.

### Building Knowledge

In knowledge development, researchers have found through empirical studies that people can more quickly integrate and act on information presented visually.<sup>[1]</sup> Graphics function to create a literal “space” for information in a way that allows people to see patterns and relationships between ideas. At a meeting of the National Science Foundation in December, Robert E. Horn, a visiting scholar at Stanford University said:

*“When words and visual elements are closely entwined, we create something new and we augment our communal intelligence...visual language has the potential for increasing ‘human bandwidth’ – the capacity to take in, comprehend, and more efficiently synthesize large amounts of new information.”*<sup>[2]</sup>

Visual communication can disseminate large amounts of information for quick synthesis. A deft diagram quickly reveals structure, makes comparisons explicit, and displays different levels of analysis. Selecting the ideal image and brief phrase to communicate an idea is an evolving form of practical art.

**Example:** During a 2002 conference on “Creating a Learning Culture” at University of Virginia, organizers brought in visual storytelling as an alternative “translation” of an event designed not just to report on but to generate new approaches to learning. This enabled immediate capture of new ideas developed during panel discussions, and created a record of emerging themes to be carried on in papers, books and future conferences.

[http://www.darden.virginia.edu/batten/clc/picture\\_outcomes.htm](http://www.darden.virginia.edu/batten/clc/picture_outcomes.htm)

### Inspiring Innovation

Images can be used to elicit creative ideas from a group by tapping into the source of innovation, ideas that tend to be more holistic than linear, more intuitive than rational. Creativity is enhanced when people interact with images. Seeing is personal and draws on unconscious elements. When looking at the same image, everyone has a somewhat different interpretation

of what they are seeing, based on past experiences. The scientists who put together the “seeing” exhibit at the San Francisco Exploratorium wrote:

*“We don’t see things as they are. We see things as we are...Seeing is subjective. Seeing is active...Seeing is interpreting light...”*

Optical illusions, such as those found on the Exploratorium’s website, demonstrate how different people see the same thing in different ways.<sup>[3]</sup> Another example is the continual challenge of trying to get two or more people to describe the same experience in the same way (a challenge attorneys frequently face in court).

That images invite subjective responses can benefit organizations when they are trying to develop a vision that includes broad perspective. Because people do “see things differently,” graphics can help identify and communicate individual differences in perception. Together, then, people can create a “big picture” image that encompasses different ways of seeing.

**Example:** For the U.S. Department of Education, Institute for the Future and the Grove Consultants faced the challenge of creating an image capturing a highly abstract theme: How can emerging technologies could support learning, using a “landscape” to show the intersecting technologies? After months of meeting, a graphic captured the vision of a broad range of stakeholders including administrators, teachers, government officials and technologists.

<http://www.grove.com/doed/introduction.html>

## Facilitating Collaboration

The social and psychological components of visual communication can be leveraged to facilitate collaboration. In her book, *Vizability*, Kristina Hooper Woolsey wrote about how graphics function within a group that is striving to work effectively together.

*“Collaborative drawings have a neutral quality that can be very effective. By focusing on a drawing, people tend to concentrate on ideas on the table, rather than the different personalities and social dynamics involved. They also keep discussion focused on specifics rather than on vague and nebulous generalities.”<sup>[4]</sup>*

Often people on the same team believe they share the same goals but lack a shared framework. Progress is impeded due to clashes of assumptions that have not been expressed. A visual goal setting process moves everyone on to the page, creating a shared context before defining the goal and steps to reach it.

David Sibbet, founder of The Grove Consultants International, who has been using visuals as a strategic tool for 30 years, describes graphic facilitation as “public listening.” Participants in a meeting immediately see their ideas captured and reframed – making it possible for them to clarify their thoughts. The image can then be diffused for others to respond and elaborate upon the idea.<sup>[5]</sup>

Organizations increasingly are using group graphics as a “high touch technology” that works on a meta-level to develop a shared focus. Visual storytellers may use a landscape background as a way to bring people together to a familiar-looking “place” – literally “grounding” them. Facilitators can use time-lines and arrows to show forward movement.

**Example:** A History Map depicting major historical, business, education, and social events of the past 100 years was used as a springboard for executives of a multinational telecommunications company to discuss corporate values, employee learning, and corporate

ethics. One of the effects was to uncover “memes” (the social equivalent of genes - succinct repeatable statements that diffuse throughout an organization) explaining identity and goals to employees, customers and shareholders.

<http://www.elearningforum.com/nov2001/index.htm>

**Example:** An educational foundation seeks to bring resources from science museums into the hands of 6<sup>th</sup> grade teachers who need more hands-on, easily accessed material to work with their students. A group of teachers gather with curriculum designers to discuss the best format, but first they need to clarify shared principles guiding their approach.

<http://www.human-landscaping.com/clegg/kahn-aug19-02/pages/drawing-3b.html>

## As a Process

There is a wide spectrum of visual communication approaches – from The Grove’s templates, designed to help people in corporations conduct their own strategic visioning, to highly individual visual interpretations by people who synthesize and amplify information in idiosyncratic art forms as they record it. The list of approaches is growing: graphic recording, graphic facilitation, reflective graphics, mindscaping, visual thinking, information architecture, scribing, visual synthesis, graphic translation, group graphics, interactive graphics, ideation specialists, communication graphics, visual storytelling, visual journalism, integrative graphics.

Although artistic talent may enhance presentational graphics, visual communication is above all functional – on-the-fly, unpolished, and transient, particularly during conversational phases. Sometimes called “primitive art” or “tertiary art,” it is a visual snapshot of what is known at the moment – when a CEO first describes a proposed change, when executives add their input to a vision, when groups respond to a proposal.

In a time of rapid and extreme change, there is little time for traditional process. There is no longer enough cycle time for an executive decision to go through training and education departments to bring employees up to speed. Rather we are in an era that demands just-in-time, relevant information. That changes the definition of what it means “to learn.” It has been suggested that the best definition of learning today is “constructive interaction with change.”<sup>[6]</sup> Visuals are one item in the toolbox for quickly conveying context and content in a form conducive to ongoing change. Simple art forms and shapes communicate movement, change, and impermanence. They invite people to tweak, develop, and improve upon ideas.

**Example:** A government agency wants to move change in offices throughout the country. Templates are needed to capture ideas at each phase of communication.

<http://www.human-landscaping.com/clegg/visuals/visuals.html>

## Far and Wide

Visual storytelling increasingly is moving on to the web. The communication cycle – beginning with the seed of an idea through the iterative discussions – can be captured in a multi-representational forum that disseminates information and allows feedback from stakeholders. For example, a company’s leadership might select the most engaging group graphics and use them as a portal, linking to critical information pieces in text form. Special attention is given to develop “memes” – information bits that are the social equivalent of genes – packed with information and easily replicated.

Photographs, audio clips, and power points can be part of an evolving web package – continually being updated and improved upon as the cycle of communication continues.

**Example:** After a three-day conference on learning and education that included hundreds of sessions, organizers created a website that included video-clips, trip, report and graphic murals of the event as well as papers and reports.

[www.techlearn.com](http://www.techlearn.com)

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## About the author



Eileen Clegg is a visual journalist (<http://www.meta-time.com/visual/>), a writer/researcher with the Institute for the Future (<http://www.iftf.org/>) and book author whose most recent title is “Claiming Your Creative Self” (New Harbinger publications, 1999) She currently is working on visual and text versions of a book on organizational adaptability inspired by biological organisms that thrive in harsh conditions: “*The Extremophile Response: Lessons for Business from Nature’s Super Survivors.*” <http://eoe.org/forum/09-11-02/Clegg-Extremophile.ppt>. Contact Information: email: [eclegg@iftf.org](mailto:eclegg@iftf.org), phone (707)486-2441, (650)233-9561

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[1] A concise article summarizing the research is available on the Think Tools website, “In the Eye of the Beholder, Visual and Verbal Cognitive Capacities in Complex Problem Solving” by Catrin Rode. [http://www.thinktools.com/download/research\\_report\\_01.pdf](http://www.thinktools.com/download/research_report_01.pdf)

[2] Horn, Robert E. “Visual Language and Converging Technologies in the Next 10-15 years and Beyond: A Paper for the National Science Foundation Conference on Converging Technologies, Dec. 2001 <http://www.stanford.edu/~rhorn/images/nsf/artclNSFVisualLangv.pdf>

[3] San Francisco Exploratorium’s optical website [www.exploratorium.edu/seeing/index.html](http://www.exploratorium.edu/seeing/index.html)

[4] Woolsey, Kristina Hooper. *Vizability* Boston: PWS Publishing Company. 1996

[5] From a conversation with David Sibbet, Grove Consultants International ([www.grove.com](http://www.grove.com))

[6] Mittman, R. and Eileen Clegg,, Institute for the Future “The Future of Global e-Education” (2001) [Executive Summary of the "Future of Globale-Education" report](#) (69KB PDF)