

Learning Briefing, January 2009 by Susan Atkinson

I have always been interested in the science of learning—how people make sense of information and store and retrieve it, put it to use, decide what to keep and what to discard, and why sometimes it’s so hard to recall, especially as we age. I wonder if there are ways we can facilitate better, ask questions better, and generally organize things so they are more useful to our learners. Several articles and studies came across my desk recently that piqued my interest, speaking to these very issues. This briefing will look at

1. How we learn
2. Where we learn
3. Implications and recommendations for facilitating learning

How we learn

Gender Differences

You may not be surprised to hear that “although men and women produce equivalent intellectual performance, their brains do it differently.”¹ Researcher Michael Gurian and diversity expert Barbara Annis help us understand the implications in *Leadership and the Sexes*. This difference in brain function spans all continents and cultures, though it manifests in ways that are affected by both culture and environment. While there are more than 100 documented biological differences between male and female brains, there are also people who have “bridge brains” which are closer in function to the opposite gender.

Leadership styles are affected by the neurological differences in our brains. Female leaders tend to be more interactive, leaning to participative teams. Male leaders might see colleagues as potential competitors and may spend more time working alone, only interacting when there is something to gain from a specific transaction. Female brains have “up to double the verbal capacities of men’s brains.”² As a result their management style tends to be more descriptive, explaining what they are looking for and dialoging with employees about how to accomplish the goal. Conflict styles are also different, which means behavior in meetings will be different. Understanding these differences may lead to greater cooperation and effectiveness within teams.

Spirituality and Adult Learning

Researcher Elizabeth J. Tisdell defines spirituality as “an individual’s personal experience or journey toward wholeness.”³ She distinguishes it from religion, which she calls “an organized community of faith.” Mirroring Robertson McQuilkin’s picture of spiritual formation in ICEL’s *Living The Life* course, she examines the knowledge “spiral” in which adults revisit significant ideas and deepen our understanding of them as we mature.

¹ ExecuBooks summary of Michael Gurian with Barbara Annis, *Leadership and the Sexes: Using Gender Science to Create Success in Business*, Jossey-Bass, 2008.

² Ibid.

³ Elizabeth J. Tisdell, “Spirituality and Adult Learning,” in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 28.

*Learning Through the Body*⁴

Have you ever had to find a flashlight after the lights went out? Stumbling through the dark, navigating around the footstool, the dog and the end of the bed without too much damage to yourself or your surroundings is a form of embodied learning. Your brain knows where the flashlight is (or is *supposed* to be!) and you can probably visualize the route you need to take. Making your body move through the space requires a concerted effort and cooperation of all your learning channels. This is learning that resides in your body, not just your brain. The same is true of parallel parking. You don't just think about it—you have to do it physically to be successful.

And then there's that feeling that something is just not right—whether it's the weather or the atmosphere in a mine shaft. The "sixth sense" that makes you aware of your conditions and helps you to avoid catastrophe if you pay attention to it. We might recognize a prompting from the Holy Spirit. This heightened awareness is also a form of embodied learning as we become sensitized to these promptings and learn to respond to them.

*Narrative Learning*⁵

Because we live in a very literate culture, we may have failed to recognize the value of storying for adult learners. Learning through stories involves stories heard, stories told, and stories recognized. We have experience with hearing stories—they engage the spirit, imagination, and heart. When the learner moves to the role of storyteller, cognitive understanding moves to link with personal experience. Just as we learn more ourselves as we prepare to teach, the storyteller has to process on a different level and deeper learning takes place. In recognizing stories, the learner sees himself situated inside the narrative of his experience.

Non-Western Learning and Knowing

In non-Western systems, learning is communal, learning is lifelong and informal, and learning is holistic.⁶ Communal learning means that learning is for the good of the community. Western individualism is viewed as immature and self-centered. While we generally think of lifelong learning as continual skill development which enables us to work better, non-Western cultures see it as part of living—community-based and informal. They value learning for the sake of knowing without any further motivation. They may solve problems together using whatever resources are available, learning as they go along. The notion of holistic learning involves some of what we have already considered—learning involves not only the mind, but also the body, spirit, and emotions. It takes place in the journey of life, in community with others. Everything is interconnected.

Teaching with the Brain in Mind

The human brain is a series of switches. The electrical paths are determined by the switching patterns, kind of like a railroad system where the switch can be set to take you east to Virginia Beach or south to Emporia. Along the way there will be more switches with an either/or choice which determines the final destination.

When storing new input, the brain tries to connect it to something that has already been stored. This storage process looks for existing patterns (already established switching routes) in order to make sense of the stimulus.

⁴ Tammy J. Freiler, "Learning Through the Body," in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 37-47.

⁵ M. Carolyn Clark and Marsha Rossiter, "Narrative Learning in Adulthood," in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 64.

⁶ Sharan B. Merriam and Young Sek Kim, "Non-Western Perspectives on Learning and Knowing," in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 73.

Items which are connected this way are easier to remember. If there is no connection with prior knowledge, the information may get lost in the shuffle, having no logical place to reside and therefore no satisfactory method for retrieval.

Zull's steps for adult learning are called the "four pillars of learning." These are experience, reflection, abstraction, and testing. These brain functions seem to be vital to making learning stick. Listening to lectures and reading texts are valuable learning experiences, but the learners likely to derive the most benefit are those who can also draw on related prior experience.⁷ Reflection is the key to interpreting past experiences in light of newer ones, because it can alter the brain's "switches" and the meaning derived from those connections. Abstraction involves problem-solving and meaning-making. Testing requires the brain to try out the new meaning to discover if the association was correct. There are several implications for educators which will be addressed later.

Where we learn

*The Future of Learning*⁸

Chief Learning Officer magazine asked leaders in corporate learning to give their thoughts on important trends for the near future. Ken Blanchard answered with bullet points. Here are a few:

- Organizations need to pay attention to how social networking, gaming and simulations facilitate real work.
- Organizations need to be deliberate in strengthening relationships at work, even virtual ones.
- Organizations need to provide shorter training and more follow-up.
- Get away from one-size-fits-all: People need their own career/development journey mapped out and supported.

Jay Cross, CEO of Internet Time Group, says, "People learn to do their work in small chunks: a tip from a pal, an 'ah-ha' moment after trying something new, a factoid from Wikipedia or Google, or a story told over lunch."

Karie Willyerd is the CLO of Sun Microsystems. "We need to expand our thinking from an emphasis on leadership development to an emphasis on knowledge transfer, broader skill building, just-in-time learning and breaking content into smaller, more digestible and incremental units available online and to mobile learners...I expect shorter, snack-sized learning modules that learners can pick and choose from to assemble their own curriculum...Learning in the future may look more like what we think of as play: games, quizzes, self-directed exploration and peer collaboration."

Frank Anderson and Christopher Hardy of the Defense Acquisition University say, "The biggest imperative for the learning industry in the next five years will be delivering learning to employees when and how they need it."

Social Networking

A primary benefit of a social network is the inherent interactivity in each system.⁹ To participate in the network, the participant has to *participate*. (Sorry!) Lurkers—those who read only—don't get the benefit of taking part in the conversation. Organizations are beginning to recognize and take advantage of the tools available via social

⁷ Kathleen Taylor and Annalee Lamoreaux, "Teaching with the Brain in Mind," in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 54.

⁸ Brian Summerfield and Lindsay Edmonds Wickman, "The Future of Learning," *Chief Learning Officer*, December 2008, 20-23.

⁹ Mark Sylvester, "Learning Opportunities Embedded in Social Networking," *Chief Learning Officer*, December 2008, 28-33.

networking. The informal learning that takes place in the virtual environments is becoming the just-in-time assistance that workers need. Archived discussion threads provide answers to questions and techniques for nearly everything the organization does. Capturing the corporate knowledge base before baby boomers retire drives some of the need to share. Company wikis provide a searchable wealth of updated knowledge for the entire organization.

Implications and Recommendations

Learning is Multidimensional

Adult learning has been understood as a cognitive process in which the mind takes in facts and information, converts it to knowledge, resulting in a subsequent behavior change. Research is expanding this view. The mind, body, spirit, emotions, and society are not themselves simply sites of learning: learning occurs in their intersections with each other.¹⁰

We've looked at a variety of ways adults learn. Here are some thoughts and implications:

- Men and women need to understand how their brains function differently in order to work well together. Issues of teaming, supervision, and conflict resolution in particular are affected by their different approaches. We need to be intentional in recognizing *and training for* these needs.
- “The ability to create, imagine, and come to further insight through symbol, metaphor, and art is part of the experience of being human that is so often ignored in education.”¹¹ Creative expression comes from the spirit. We need to provide for and accept alternative evidences that learning has occurred. Words are not the only way to answer a question. As the new generations become even more a part of the IMB, we have to recognize their preferences for learning and for demonstrating their learning.
- “Learning occurs in social contexts and bodies, not just in minds.”¹² We must look for ways to get the learning into the muscles and bones as well as the thoughts. Guided practice and activities like ICEL’s TinkerToy building lesson on teamwork are doable now. Beyond this we need to think even more creatively toward virtual communities (Second Life-type simulations) and mentoring.
- When we learn something new, we create a narrative about it, whether intentionally or somewhere in the depths of our thoughts. To help learners make the most of this process we can teach them to create
 - Learning Journals—These become a conversation between the learner and the material, with reflection on the way they are processing the information, including the emotions that accompany the learning. ICEL courses and iGuides are forms of learning journals.
 - Autobiographical Writing—When focused around a specific concept, this allows the learner to examine the material from an entirely personal perspective, including how it affects them, how they will use it, what it means to them, and so on.
 - Instructional Case Studies—When learners use what they know to create a scenario, they have taken it apart and put it back together in a format that is useful for teaching others. They have to think at the practitioner level to accomplish this.
- We have heard for several years about the “teachable moment” for children. Why are we not using this same concept with adults? The best learning is embedded in everyday life. Just-in-time learning occurs when it is

¹⁰ Sharan B. Merriam, “Adult Learning Theory for the Twenty-First Century,” in Sharan B. Merriam (Ed.), *New Directions for Adult and Continuing Education*, Number 119, Fall 2008, 97.

¹¹ Elizabeth J. Tisdell, 34.

¹² Tammy J. Freiler, 45.

needed most, generally not in a classroom and not with a “certified” instructor. Non-Western societies put great value on this kind of learning.

- “Listening to lectures and reading texts are valuable learning experiences, but the learners likely to derive the most benefit are those who can also draw on related prior experience.”¹³ We ought to facilitate the connection with prior experience through analogies, concrete examples, and activities. Lecture is efficient but not nearly as effective as experience. Helping learners to discover and construct meaning is the role of the facilitator. Even people who are brand new to the information have some kind of prior knowledge and we have to help them figure out where the “switching” pattern starts. Kind of like finding a “dendrite of peace” that is open to listening where we can begin the work. (Did I help you situate this information?)
- “When learners are challenged to make meaning...their brains are stimulated differently than when they are asked to focus on meaning already made.”¹⁴ Life is more like word problems than pre-set equations to solve. There are choices to make and the path to the conclusion may differ from person to person. We have to facilitate discovery and construction of meaning.
- We must consider the emotional context of learning. Jane Vella calls this “safety” in the learning setting. If the learner fears embarrassment or humiliation, that will inhibit any discovery he makes. On the other hand, there must be a certain level of challenge. This balance requires high support and high challenge. The scaffolding should support as long as necessary to assist the learner in achieving all she can, stretching beyond her preconceived limits to test new abilities. A good mentor program can provide this kind of support. In a classroom or workshop, working in teams will take care of it.
- We have to make the best use of delivery systems—mobile learning via iPod or other device is just-in-time. We have to leverage it now.
- Social networking provides interactivity beyond time and space. The Visioning Together blog is just a baby step in the direction we have to go. As affinity groups form and teams are widely dispersed, they will need to share information and informal learning. Now is the time to initiate the foundational processes in order to influence the way they will be used.
- ICEL is envisioning “chunks” of learning rather than comprehensive courses, so that learners can construct their own curricula, choosing from a menu of snack-size lessons. There will be “second-helpings” that go further into the topic. Learners will have control over their learning plans so they get what they need when they need it.

I am reminded of the time my brother-in-law went through U.S. Army Ranger School. He was the platoon leader. They learned some in the classroom and then they put on all their gear and went out into the swamp for a couple of weeks to put it into practice. They faced many challenges and they learned, informally, to survive. Their final exam required them to accomplish a pre-set goal, but there were no specifics as to how that should be done. They had the necessary tools and the knowledge to use them. Time was limited but adequate. In order to “sew on the patch” everyone in the platoon had to pass the test. One of George’s men didn’t make it. After all those weeks of training and hardship, the entire platoon was denied. I’m guessing they could have done something more to support this one that was unsuccessful. And I figure it was essential to their training to discover that fact. Let anyone who has ears listen. Hoo-ah!

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¹³ Kathleen Taylor and Annalee Lamoreaux, 54.

¹⁴ Ibid, 56.

For Further Reading

Chief Learning Officer, www.clomedia.com

Gurian, Michael with Barbara Annis. *Leadership and the Sexes: Using Gender Science to Create Success in Business*. San Francisco: Jossey-Bass, 2008.

Merriam, Sharan B., ed. *New Directions for Adult and Continuing Education: Third Update on Adult Learning Theory*, No. 119. San Francisco: Jossey-Bass, Fall 2008. (Available in ILC library)