Learning Styles

Our understanding of the ways we humans learn continues to evolve. Neurological research has indicated tendencies toward some differences in functioning between the left and right cerebral hemispheres in most people. This "right brain/left brain" model has helped legitimize a whole range of teaching strategies and learning modes in formal and informal educational settings.

The "right brain/left brain" model and attention to learning modalities have led to "whole brain" models that are being refined continually as researchers apply and extend the implications to educational and human development settings. One such model describes what seem to be tendencies among people to have a preferred approach to learning, or learning style.

For example, we have begun to realize that activities like music, dance, artwork, and other forms of creative processing are important components of the ways we comprehend, internalize, and communicate learned information. Instructional programs increasingly recognize the importance of Symbolic Abstract, Auditory, Kinesthetic, and Visual modalities of learning. (2) The use of a diversity of modes is now seen by most to be complementary to, rather than a distraction from, the traditionally - valued skills of reading, writing and arithmetic.

IMPLICATIONS FOR WORKSHOPS

Over the years, all of these various approaches and modalities that represent the "whole learner" have influenced the development of the WILD, WET, and PLT materials and instructional strategies. The modalities for learning also strongly influence our suggestions for workshop design. For example, such "whole-brained" models suggest that the most effective learning experiences contain all of the following components:

1. A chance to recognize our individual relationships with, or intrinsic interest in, the topic at hand ("why should I pay attention to this?");
2. Access to the information about the topic, in any of a variety of forms, including teacher's delivery, print or other media, and first-hand data collection, as well as opportunities to process information through a variety of modalities, including auditory, visual, kinesthetic, and abstract learning ("now that I'm interested, what is this all about?");
3. An opportunity to touch and explore, literally hands-on ("how does this work?");
4. An opportunity to demonstrate mastery of the topic by being able to generalize from this experience to another situation, or by being able to teach it to someone else. (2) Research suggests that people vary in their responses to each of these component experiences, depending on their individual preferences for particular learning styles.

However, all of these components influence our individual learning experiences.

The most important implication for educators is to recognize and act on the

knowledge that it is appropriate and necessary to incorporate experiences that honor the whole range of learning style preferences and learning modalities into any workshop, classroom instruction, or other teaching that we do. Each individual learner benefits from a diversity of approaches, as does the whole group. The group will be made up of a variety of people who each represent some individual preference for a particular learning style and modality. The most successful workshop is one which plans and provides for this diversity.

** When planning your workshop, choose activities and elements that will model each learning style. Some activities should have the participants moving around a lot, some should involve a degree of visual creativity, etc. While you need not represent each learning style equally, be sure that you exemplify each one and point them out to the participants. **

1) Adapted from Bob Samples, Cheryl Charles, and Dick Barnhart. The Whole Schoolbook: Teaching and Learning Late in the Twentieth Century. Reading, Massachusetts: Addison Wesley Publishing Co., 1997.

2) Adapted from Bemice McCarthy, The 4-Mat System, Arlington Heights, Illinois: EXCEL, Inc., 1980.

The Theory of Multiple Intelligences

A different kind of smart—that's the hottest topic of discussion in classrooms across the country today. With the currently accepted theory of multiple intelligences, educators no longer focus on "how smart students are" but on "how students are smart."

The theory of multiple intelligences, developed by Howard Gardner and his associates, holds that every individual possesses several different and independent capacities for solving problems and creating products. Gardner has named these capacities "intelligences" and has scientifically identified eight of them, which are grouped into three categories.

The language-related intelligences—verbal/linguistic and musical/rhythmic, reflect the structures of individual languages. These two intelligences are "object free," meaning that thoughts are represented through sound-based communication and symbolic representations of those sounds.

The second category, personal relationships, consists of intrapersonal and interpersonal intelligences. These are the people-centered intelligences. They reflect the personal vision of self, expectations of others, accepted norms of thinking and acting, and the cultural pressures that shape behavior.

The third category is object-related intelligences. These include bodily/kinesthetic, visual/spatial, and logical/mathematical. The designation of object-related means: the basic concepts and procedures are rooted in physical manipulation of concrete objects that results in a defined product. These intelligences are subject to the "rules of the game" for using the objects to solve a problem or make a product.

The newest intelligence to be identified is naturalist intelligence. Gardner describes this as an ability to differentiate the patterns and characteristics among natural objects in the environment, recognize flora and fauna, make distinctions in the natural world, and observe and classify plants. Charles Darwin is often cited as an example of a person who possesses a naturalist intelligence.

As with other instructional strategies, WET, WILD, and PLT these workshops have already incorporated many of the key aspects of multiple intelligences theory into their activities.

One of the simplest ways to include multiple intelligences with your students is to ask them to "represent" the data they have collected during an activity, such as "Water Wonders," using one of the eight intelligences. Each group can be invited to use the intelligence with which they are most comfortable, or you can assign intelligence to each group. By doing this, you encourage them to really let their personalities shine! We have found that groups will dance, sing, draw pictures, make models, create graphs, or do calisthenics to report their findings from activities.

While all of this information about Multiple Intelligence Theory may seem overwhelming, the main idea we would like for you to get from this article is that these activities already incorporate a great deal of this theory. Just by doing the activities, you are modeling some aspects of Multiple Intelligence Theory in your classrooms; and with some small modifications, you can model all aspects of it. And, if you are a workshop facilitator, when planning your workshops it is also important that you think about how combinations of activities will address all of the intelligences.

What is "Hands-On" Learning?

Take 2 minutes and describe in the space below the most interesting classroom activity that you ever did as a student:

»Chances are, you remember that activity because it was hands-on!

"Hands-on" learning is participatory learning that includes (but is not limited to):

> Making something with your hands

> Using manipulatives (such as props, art media, equipment)

> Working with a group of other students to come up with a story, project, or other joint product

> Using more than one of the senses (hearing, seeing, smelling, touching)

> Using imagination and encouraging creativity

> Exploring a topic first-hand by experimentation rather than by only reading about it in a book (examples: making a clay volcano that uses vinegar and baking soda to erupt; acting out the parts of an historical event; designing a web page that teaches how to solve a geometry problem; going outside to observe insects on plants; inventing a new song that has different parts; etc.)

Differences Between Children and Adults as Learners

Children:

1. Rely on others to decide what is important to be learned
2. Accept the information being presented at face value
3. Expect what they are learning to be useful in their long-term future
4. Have little or no experience upon which to draw - are relatively "clean slates"
5. Have little ability to serve as a knowledgeable resource or to teach fellow classmates

Adults:

1. Decide for themselves what is important to be learned
2. Need to validate the information based on their personal beliefs and experiences
3. Expect what they are learning to be immediately useful
4. Have much past experience upon which to draw - may have mixed viewpoints and preconceived ideas
5. Have a significant ability to serve as a knowledgeable resource to the trainer and fellow learners

Both Children and Adults:

1. Appreciate teaching that includes variety, fun and humor
2. Prefer not to remain seated for extended periods of time
3. Have similar learning styles (visual, auditory, kinesthetic)
4. Are more likely to learn when the teaching is hands-on

Adults as Learners: An In-Depth Look

One of the goals of our workshops is to help educators learn new ways of approaching their teaching tasks. Adults as learners are different than children as learners. The following characteristics of adult learners may help you plan and present your workshops.

Orientation to Learning

- Adults will commit to learning something when they believe that the goals and objectives of the workshop are important to them — that is, job-related and perceived as being immediately useful.
- Adults want to initiate their own learning and be involved in selecting objectives, content, and assessment.

What you can do: State your workshop goals early in the schedule and add participant goals not listed. Be prepared to help participants see the need for learning something new. Encourage and nurture the seeds of understanding and change. Assume that each person wants to understand or learn.

The Learner's Self-Concept

- Adult learning is ego-involved. Learning a new skill, technique, or concept may promote a positive or negative view of self. Adults may fear that others will judge them, which produces anxiety during new learning situations.
- Adults reject prescriptions by others for their learning, especially when what is prescribed is viewed as an attack on what they are presently doing.

What you can do: Provide an environment in which the participants feel safe to try something new or to consider new ideas. Never criticize participants, but be positive and affirm each person in some way.

The Role of the Learner's Experience

- Adults come to any learning experience with a wide range of previous experiences, knowledge, skills, self-direction, interests, and competencies. This means that the richest resource for learning is often the group of adult learners themselves.
- Adults will resist learning situations they believe are attacks on their competence, thus they may resist topics and activities, "imposed during a workshop."

What you can do: Accept and value participants as individuals with their own experiences, knowledge, and skills. Provide ways for participants to contribute to each other's learning through techniques like group discussion, problem-solving, and peer-helping activities.

Motivation: Motivation must come from the adult learner, and is highly individualized. All one can do is encourage and create conditions that will nurture what already exists in the adult.

- Adult learning is enhanced by behaviors or modeling that demonstrate respect, trust, and concern for the learner.

What you can do: Show participants that you respect, trust, and are concerned for them. Do not blame participants who do not pay attention or are reluctant to participate; instead, look for ways to adjust the workshop to increase interest.