

Adult Learning Theory: Overview

Andragogy (Knowles) Adults are independent and self-directed. They need to know why they should learn and learn best when the value of the topic is immediately apparent. Adult learning works best when instruction is task-oriented and problem solving is emphasized. Andragogy makes the following assumptions: (1) Adults need to know why they need to learn something (2) Adults need to learn experientially, (3) Adults approach learning as problem-solving, and (4) Adults learn best when the topic is of immediate value.

Experiential Learning (Kolb) Direct experience is a critical component of adult learning. Successful learning will occur when current tasks are linked to past experiences. Hands-on tasks, case studies, role playing, internships, etc. all provide learning in an experiential context.

CAL (Characteristics of Adults as Learners) (Cross) Both the characteristics of the learning environment and the characteristics of the learner will influence the learning process. Personal characteristics of adults include age and life/developmental stage (e.g. marital status, job status, parenthood, etc.) as well as the more typically considered aspects of learning styles. Teachers of adults should be aware of the influence of these factors.

Self-Directed Learning (Brookfield) To a greater or lesser extent, depending on experience and personality, adults will learn well if they set their own learning goals, discover needed resources on their own, choose the methods by which they learn, and evaluate their own progress. The teacher role becomes that of a facilitator.

Transformational Learning and Critical Reflection (Mezirow) Adults can learn by examining previously unchallenged assumptions, working through previously unconsidered perspectives, and revising the way in which construe experiences. Critical reflection may lead to a transformation in thinking.

Characteristics of Effective Adult Learning Programs (Billington)

- Safe and supportive environment
- Encouragement of experimentation and creativity
- Treatment of adult learners as respected peers
- Self-directed learning
- Optimal pacing (challenging just beyond current abilities)
- Active learning, interaction, and dialogue
- Regular student-to-faculty feedback mechanisms

MITA in combination with PBL (Weber) Problem based learning put into a Multiple Intelligences Teaching Approach. These approaches share some features: they start with a question or problem that is of interest to the group, faculty act as facilitators/coaches rather than lecturers, learning outcomes are broad and interdisciplinary, and assessments are performance based. Phases in the combined process as defined by Weber are:

- Dialogue to generate key problems/questions that stimulate interest in the topic
- Identify goals that demonstrate the minimum learning students should achieve
- Create rubric used to evaluate learning
- Choose learning and assessment tasks (match to real word issues, student abilities, etc.)
- Reflect on the learning that occurred (or didn't)

Learning as brain change (Leamson)

- Learning is based on strengthening synaptic connections between neurons
- Repetition and focused attention increase synaptic strength
- Memories are actively reconstructed at each subsequent "remembering"
- The brain works in modules that interact (e.g. frontal lobe centers, limbic centers, motor activity centers, etc.)
- Learning that involves multiple brain modules is most effective
- Emotional involvement combined with intellectual activity is very effective for learning

Excerpts from “**LEARNING AS BIOLOGICAL BRAIN CHANGE**” Nov, 2000, by Robert Leamson

The opportunity to learn, and to learn an enormous amount, is, and always has been in modern times, available to nearly everyone in developed countries. Libraries contain more than any of us will ever be able to learn. But someone who did learn primarily from books would not simply start at the first shelf in the stacks and try to go through the lot. What's central, or what's particularly worth the effort, will always be a prime question in anyone's education.

This is the first and not-to-be-denigrated function of teachers. If learning occurs when students think deeply and repeatedly about something, it is teachers' first responsibility to ensure that their students hear and see just what that something is. And so it follows that the first requirement for teaching is some mastery of the content.

Fans of baseball do not have to discipline themselves to sit down for half an hour every night to study the baseball encyclopedia. Their emotional involvement with the game so focuses their attention that they are often capable of "one trial learning." Most teachers would agree that if their students were ever to become as "involved" with history, chemistry, or economics as they are in movie stars, rock musicians, and computer games, teaching would become effortless.

No matter how tempted we are to believe otherwise, there is nothing at all wrong with the learning apparatus of our students' brains. They readily learn what captures their imagination. What's lacking where subject content is concerned is focused attention, and the limbic system is one way to get at the problem...

So it is, in my opinion, that the really difficult part of teaching is not organizing and presenting the content (by whatever technology) but rather in doing something that inspires students to focus on that content--to become engaged, to have some level of emotional involvement with it. This is not at all an easy thing for a teacher to accomplish. It cannot be done by force or threat. However, it becomes less daunting when we consider that the limbic system can conjure up a variety of states, at various levels of intensity. Emotional involvement is not limited to the intense levels we sometimes associate with the word "emotional." Fear, for example, is not limited to terror in the face of a life-threatening situation. Fear of embarrassment and fear of disappointing a friend are both examples of mild and potentially useful emotional states. As used here, emotion is facilitating not debilitating.

A perusal of the literature of the field leads me to believe that the goal of most educational innovations and theories-- consciously or not--is to get students engaged, involved, and focused, no matter what the content or method of instruction. If it is true that the cognitive modules of our students' brains are in good working order, then getting them to fire up these modules and ignore other distractions seems like an excellent strategy...

Functional Magnetic Resonance Imaging has shown that the modules of the brain that are active when engaging in novel physical activity are physically displaced from those areas involved in problem solving and other higher modes of cognition. For both to become engaged at once requires gating signals that link these modules and attenuate distracting stimuli.

This failure of mere activity to effect learning is consistent with our everyday experience of being able to do one thing while thinking about something totally unrelated.

Hands-on activity facilitates learning only when the "thinking" modules of the brain are in communication with the "acting" modules. Activity, then, can be of help in focusing attention, but it is not a sufficient cause for learning to take place. And, as the meditators among us know, it isn't even a necessary cause. Getting the limbic system involved, however, is an effective way to set off the signals that focus attention...

If there is an overall lesson here for the design of instruction, it would be that such a design must include accurate information, clear presentation, but should also consider the elements of emotional involvement on the part of the learner.

There are those happy instances where emotional involvement seems almost innate. Many young people discover that learning something new and challenging tickles their brain, so to speak, and they are forever trying to repeat the experience. In the more typical case, learning is associated with schooling and that in turn with a kind of oppressive tedium. When these latter associations become hard-wired, the job of firing up a student's motivation to engage in thinking while in college becomes a real challenge.

But in terms of the brain model of learning, the task is possible because it involves only the strengthening of some pre-existing synapses through repeated use. Using weak, labile synapses, however, can cause discomfort. Designing a pedagogy that will inspire or motivate students to do the difficult is not a trivial matter. It's one of the things that makes teaching difficult. Simply getting students active or talking in groups or having fun will not alone produce learning. Students must become inspired (the best word I can think of) to associate that pleasurable, engaging activity with the content to be learned. When that happens, some wonderfully useful connections will become a permanent part of their brains' wiring.

Pedagogy	Androgogy
Teacher structured	Learner structured
Minimal control by the learner	Minimal control by the teacher
Focus on training for events to come	Focus on assimilation of learning from past experience
Encourages convergent thinking	Encourages divergent thinking
Focus on memory	Focus on thinking/doing
Content supplied by teacher/class materials	Content supplied partially by students
Based on specified content standards	Outcomes evolve as learning progresses