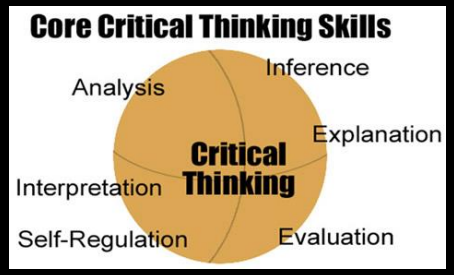


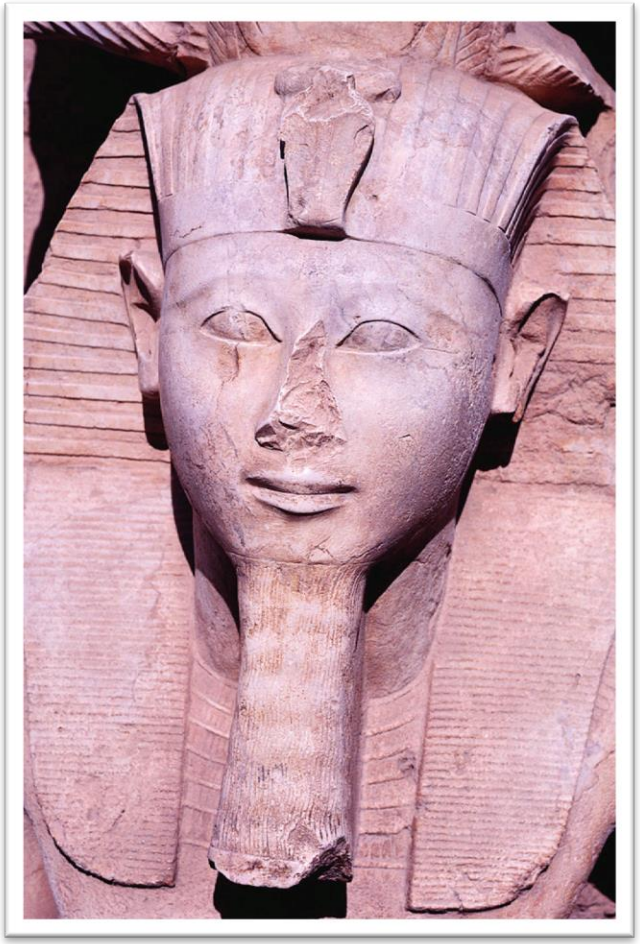
Adult Learning: Contemporary Understanding and Approaches

UC San Diego | Extension

Morgan P. Appel
Director, Education Department

Wisdom from the Ancients

In ancient Egypt, when humans were preserved through mummification, **the brain was discarded**--viewed as a superfluous organ. It was believed that the **heart was the center of all emotion and learning**. **Today, we know that learning with emotion is the learning that sticks.**



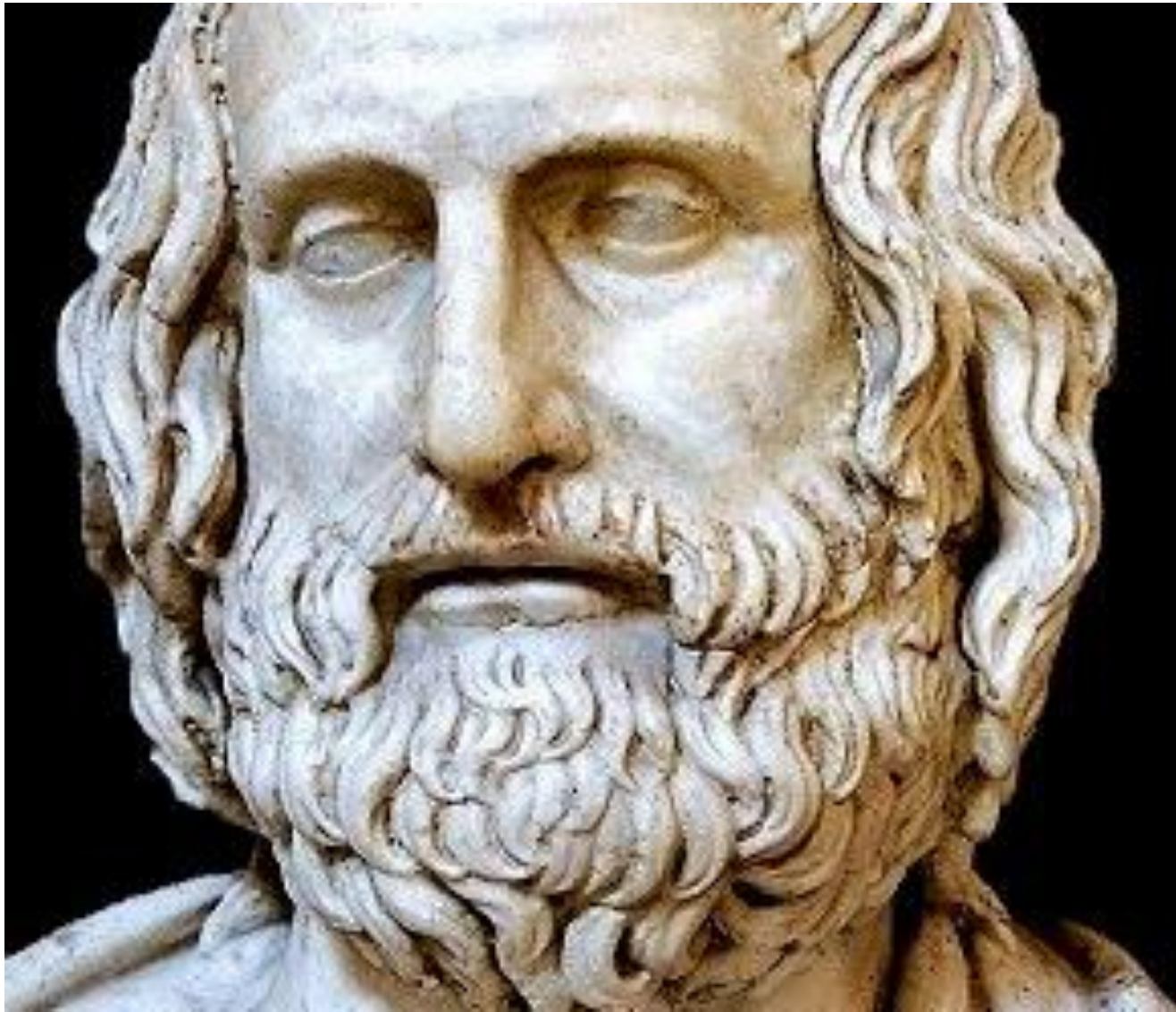
Thoughts About Teaching Adult Learners

"Learning is more effective when it is an active rather than a passive process." – **Euripides**

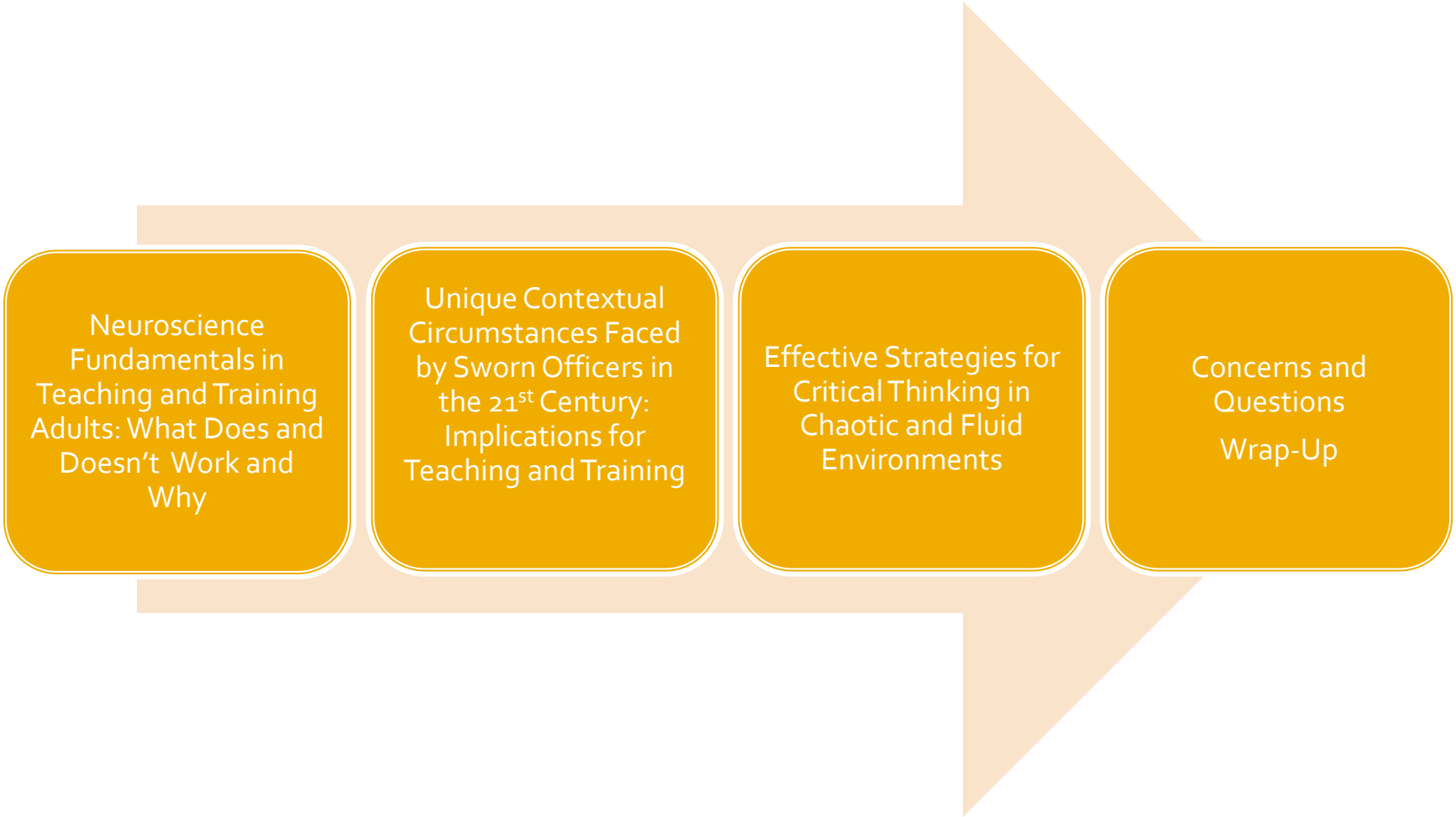
"Learning is always rebellion… Every bit of new truth discovered is revolutionary to what was believed before." – **Margaret Lee Runbeck**

"Learn from yesterday, live for today, hope for tomorrow. The important thing is to not stop questioning. Curiosity has its own reason for existing." – **Albert Einstein**

"Why should society feel responsible only for the education of children, and not for the education of all adults of every age?" – **Erich Fromm**



Flow of the Presentation



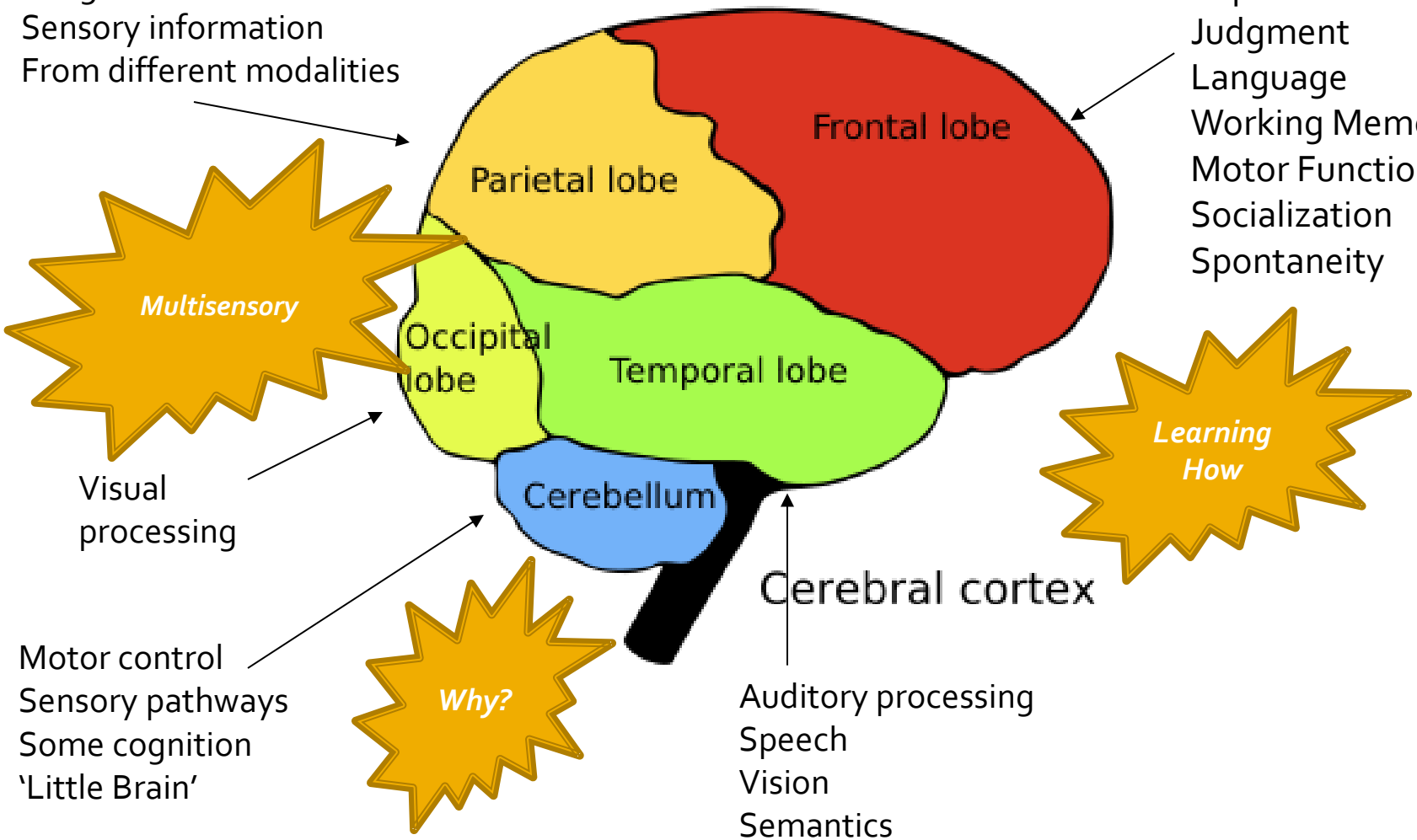
The Brain, the brain!

Despite seemingly contrary empirical evidence we see daily, everyone has a brain.

Practical Neuroscience

Integration of
Sensory information
From different modalities

Impulse Control
Judgment
Language
Working Memory
Motor Function
Socialization
Spontaneity



Visual
processing

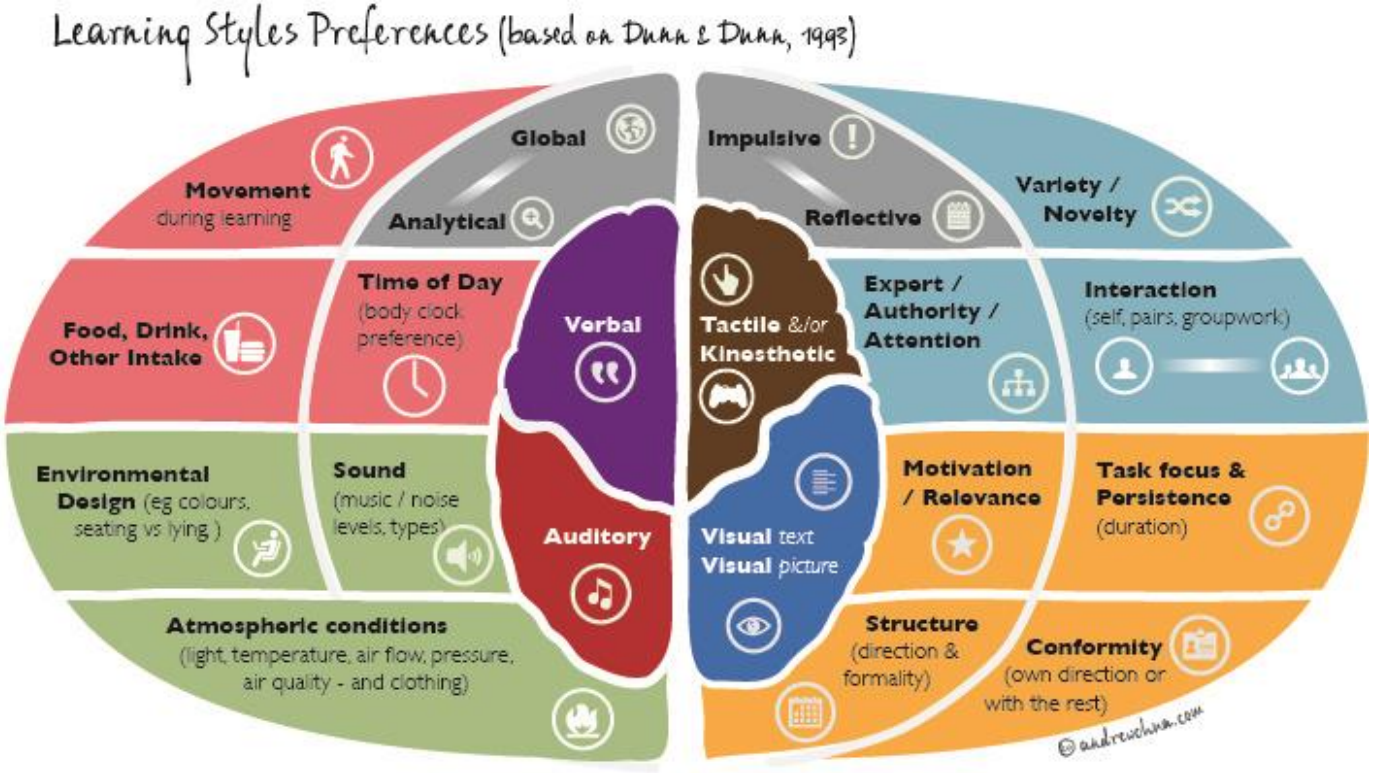
Motor control
Sensory pathways
Some cognition
'Little Brain'

Auditory processing
Speech
Vision
Semantics

Physiology of Learning

- Over 100 billion nerve endings in the brain that process sensory information
- Active learning creates dendrites/fibers that bridge across them
- As dendrites grow closer, they create synapses (bridges)
- This is the process of learning—the creation of neural networks or pathways
- All learning is based on the chemistry of survival

Who we are and how we Learn



It all starts here. Everyone has a unique learning profile and set of life experiences to scaffold upon.

This is especially true for diverse adult learners who populate your courses.

One size doesn't fit all – it never did!

The Cocktail Party Effect

How much do you retain?

Only about one percent

Three Types of Memory

- **Sensory Memory**
  - Received through the senses
  - Filters into short-term memory by attention (what is important at the time?)
- **Short-Term Memory**
  - "Scratch Pad" for recall of information under process (need to recall beginning of sentence to understand the end)
  - "Chunking" helps (hyphenated telephone numbers)
- **Long-Term Memory**
  - Long-Term Storage (little decay)
  - Episodic and Semantic Memory (scaffolding)

The Dynamics of Long-Term Memory

- Long-Term Memory
  - Three functions: **Storage, Deletion, Retrieval**
  - **Repeated exposure/rehearsal** transfers from Short-term to Long-term Memory
  - Learning is **most effective over time**
  - Deletion through interference or decay
  - Retrieval: **recall** (reproduction) and **recognition** (knowledge that information has been seen before)

Practical Neuroscience

- The brain learns through **multiple senses and modalities**
- The brain thrives on **process** and **making sense** of new information
- The brain works in **context** when processing new information
- The brain uses **patterns** to make sense of information
- The brain uses **scaffolding** to process new information
- Neuroplasticity: the lifelong ability of the brain to reorganize neural pathways based on new experiences
- The '**cocktail party**' effect and the importance of redundancy and reinforcement
- Consider the old saw 'Give a man a fish and he eats for a day, *teach* a man to fish and he eats for a week'
- The brain works in a very similar way: it thrives on making sense of *process*!
- Process reinvigorates the brain through re-establishing neural networks

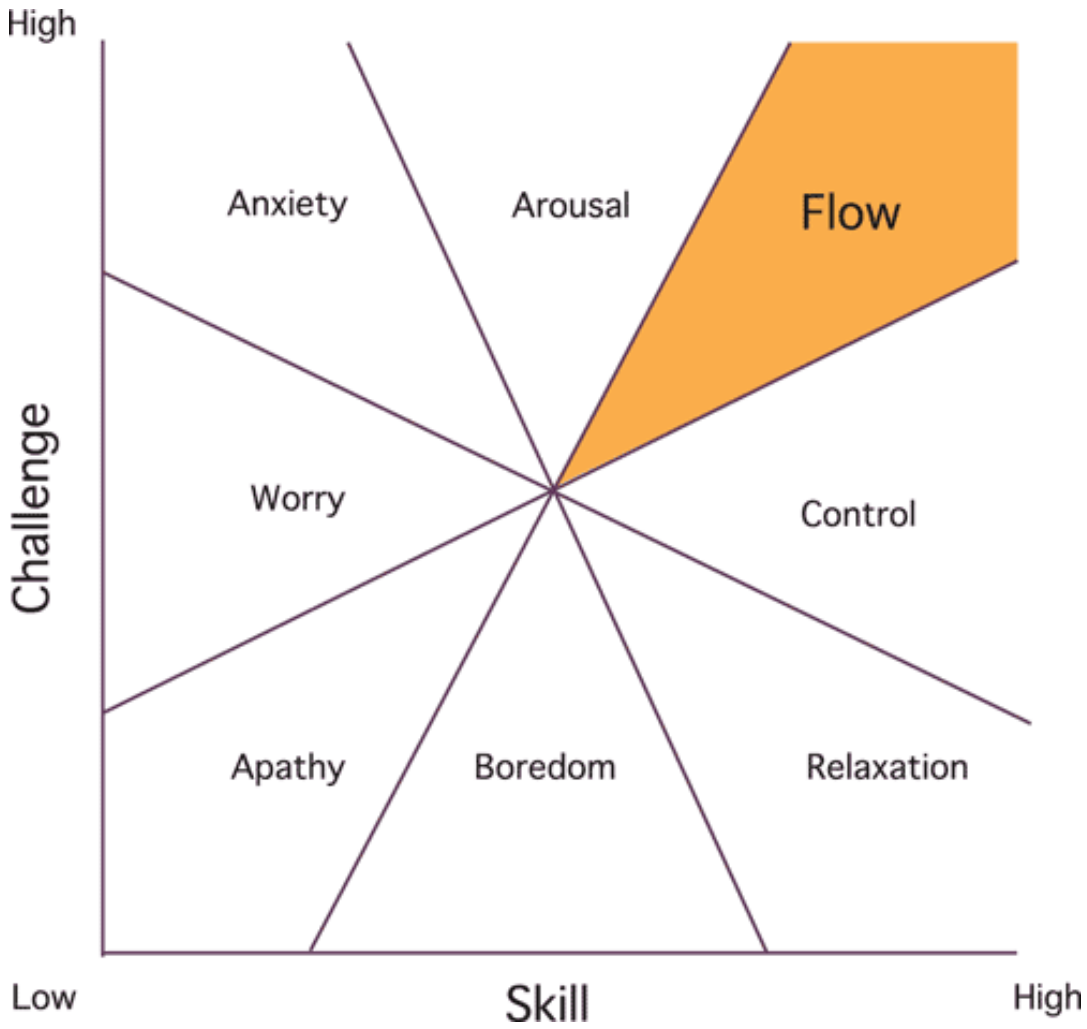
Always Ready (*Semper Paratus*)

Adult learning strategies are not designed to be used as one-size-fits-all solutions, but rather depend on your expertise and experience for deployment.

Effectively serving the adult learner means that you take on the role of professional mentor and surveyor of the learning environment. As in similar situations, it is not so much tools at your disposal versus knowing what to use and when.

Trust your intuition as an educator—it will carry you much farther than you might imagine.

Establishing *Flow*



When in the flow state, the **brain is actively seeking out information from multiple sources to engage in problem solving activities**.

That, my friends, is where Motivation, persistence and creativity make their homes.

That is **FLOW**.

Where are your students?

Pedagogy Versus Andragogy

PEDAGOGY

- Learner is largely **dependent upon instructor** for all learning
- **Instructor is responsible** for teaching, learning and evaluation
- **Instructor experience is paramount** —learners come with little or no experience upon which to build

ANDRAGOGY

- Learners are **self-directed** and responsible for their own learning/evaluation
- Learners bring **greater volume and quality of experience—** diversity of experience important
- **Adult learners are rich resources for each other** (peer learning) and experience is source of **self-identity**

Based on Whitby, 2013.

Pedagogy Versus Andragogy

PEDAGOGY

- Students are **told what they need to know** to advance to next level
- Acquiring **prescribed subject matter** and units are sequenced according to logic of subject matter
- Motivated by **external pressures** (grades and the consequences of failure)

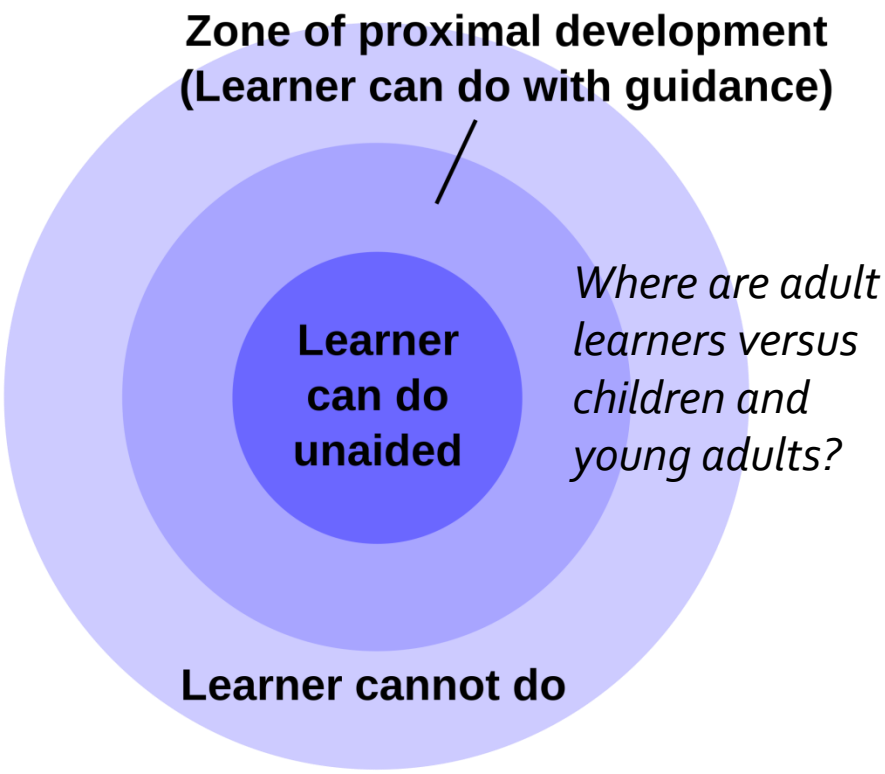
ANDRAGOGY

- Search for knowledge is motivated by **life change and identified gaps** between where one is and wants to be
- **Problem solving orientation,** real-life **relevance**, situationally organized (JIT Learning)
- **Internal motivators** (esteem, want of education, better quality of life, recognition)

Based on Whitby, 2013.

The Art and Science of Adult Learning

- **Malcolm Knowles** (1980, 1985), primarily, but believed to be initiated in Germany as early as 1833
- Five Assumptions:
  - Self-concept: **dependent to self directed** as one matures
  - **Experience is a resource** for learning
  - Readiness to learn is focused on **developmental tasks**
  - Postponed application versus **immediate application of knowledge**
  - Learning is **internally motivated**



Where are adult learners versus children and young adults?

Vygotsky's ***Zone of Proximal Development***

The Art and Science of Adult Learning

- Move from more structured to less structured over time
- Fundamental principles:
  - Adults **need to be** involved in the planning and evaluation of their instruction
  - **Experience (including mistakes) provides the basis** for the learning activities
  - Adults are most interested in learning subjects that have **immediate relevance and impact to their job or personal lives**
  - Adult learning is **problem-centered** rather than content-oriented

From Knowles 1980, 1984

Adult Learning: Heutagogy

- Pedagogy and Andragogy are steps along the pathway
- Heutagogy is self-determined versus self-directed, is more metacognitively focused: process and content (very well suited to those pupils emerging with experience under Common Core State Standards)
- Self-efficacy; understanding the learning process; communicating and working well with others; creativity in problem solving; adopting flexible and informed approaches to new areas of study
- Knowledge sharing versus hoarding
- Blending informal and formal learning resources, such that the learner is at the center of the learning process
- Very well suited to blended learning and distance learning environments—somewhat structured, but with latitude for independent learning
- Certain levels of self-regulation and maturity are applicable here (may not be immediately used with inexperienced students)
- Least structured, closest to auto-didactic learning

Source: https://heutagogycop.wordpress.com/history-of-heutagogy/

Heutagogical Thinking

In each of your training courses, you will find a diverse range of skills, abilities and attitudes based on prior expertise and experience.

To enhance learning and metacognitive skills requires the application of pedagogical (modified), andragogical and heutagogical strategies to differentiate content and instruction.

Smartly differentiated instruction can facilitate transitions and create an environment characterized by creativity, engagement and commitment (FLOW).

Move from more to less structure and from concrete/manipulation to application to abstraction

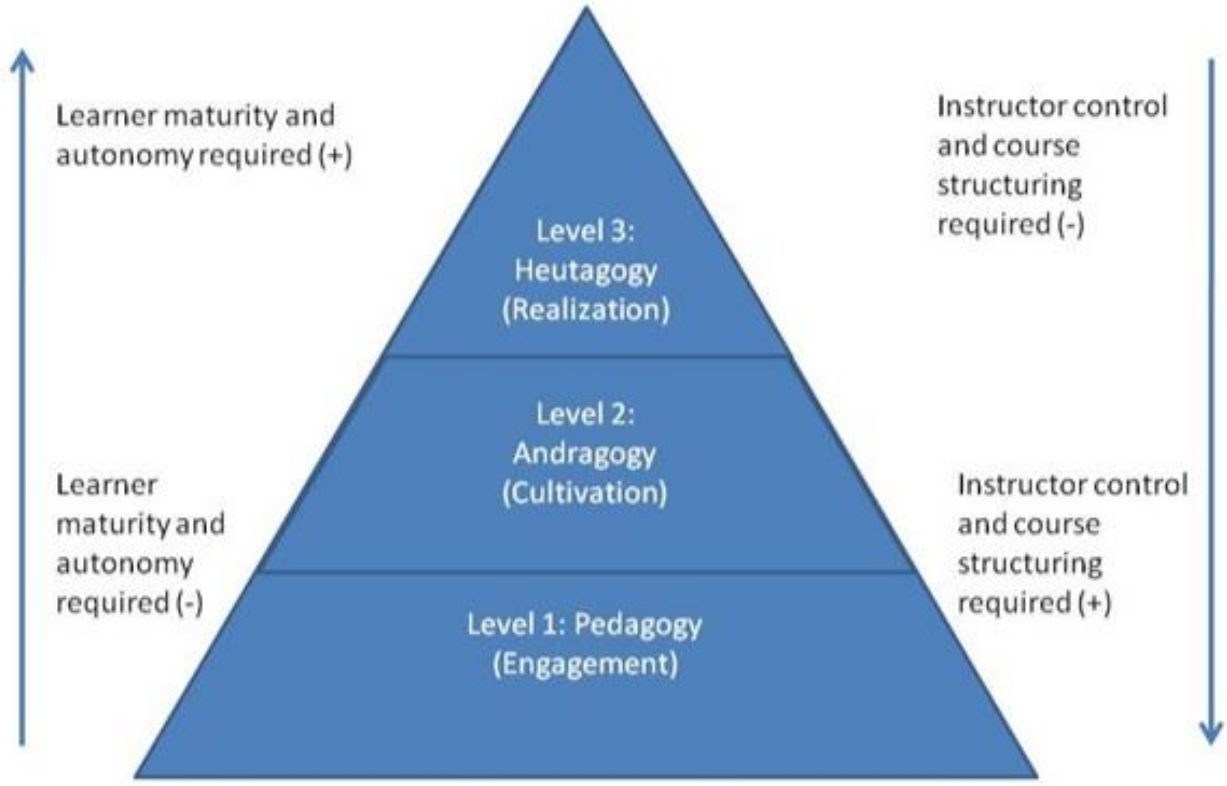


Figure 2. Progression from pedagogy to andragogy then to heutagogy (based on Canning, 2010, p. 63).

Critical Facets of Teaching Diverse Adult Learners

Effectively teaching diverse groups of adult learners requires that the instructor move from more-structured activities (didactic and whole-group learning) to less- structured activities over time.

Varying delivery of instruction using multiple modalities and grouping strategies and moving from concrete to abstract helps to engage all learners.

Recall that individual learning styles are the product of culture, personality, preferences, experiences, etc.

Explicit expectations, explanations and outcomes are universally appreciated.

- Create creative colleagues, not pupils
- Value peer-to-peer learning
- Your life experiences may not match
- Preferences and prejudices are part of prior experience (for instructor and student alike)
- Immediately applicable information
- Move around, vary learning activities
- Build up, not tear down (immediate feedback and constructive criticism)
- Want/expect to be part of the learning and assessment process
- Different in many, many ways, including learning styles and profiles
- Structured learning opportunities (metacognitive/ process)
- Laughter is the best medicine—use humor!

Teaching and Learning Strategies

- **First and foremost**, know the audience, bearing in mind that learning is equal parts cognitive and affective
- *New Faces*. Broad range of age, understanding, aptitude and ability
- Challenge your own understandings of the training experience (not everyone knows what you know)
- Facilitator versus teacher: what they want to learn (can't always happen, however), actively drawing upon experience(s)
- Explain the relevance of the course to their lives, as well component pieces (materials, activities, etc.)
- Clarity, clarity, clarity. Clearly define objectives and explain relevance to the training/course.

The Adult Brain on Fire

The adult brain is much like a volcano on the verge of eruption.

Chaotic, swirling, yet somehow controlled unconsciously seeking order and release.

Chaos frequently requires quick adjustment to rapid-fire change (bringing about ambiguity and associated anxiety)

The Context for Training

A journey is a person in itself; no two are alike. And all plans, safeguards, policing, and coercion are fruitless. We find that after years of struggle that we do not take a trip; a trip takes us. – *John Steinbeck*

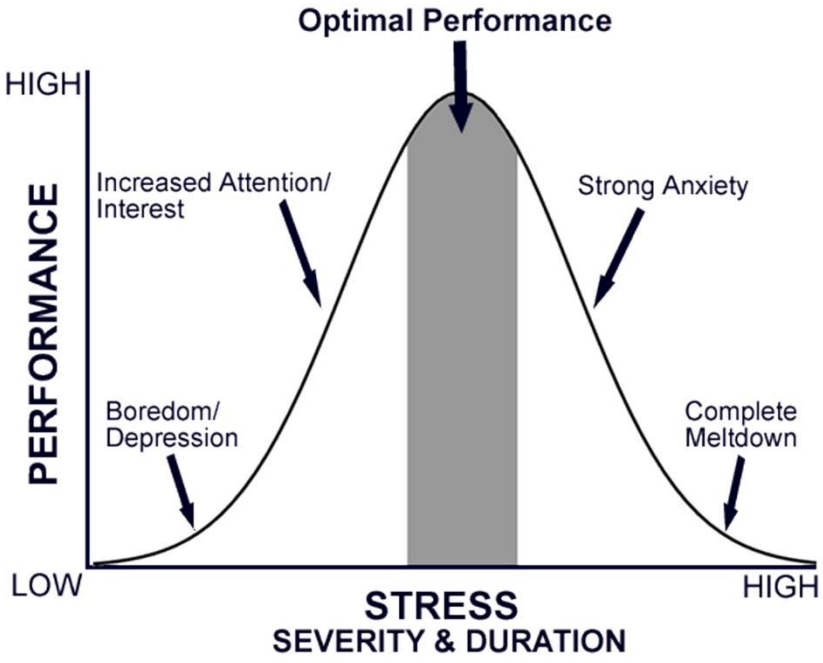
Challenges in Training Future Peace Officers

- **Broader bands of trainees** (organic differentiation with greater spread)
- **Consistency within and between** delivery formats
- **Determining mastery** (Competency-Based Education)
- **Delivery formats** v. topics/themes
- **Avoiding stasis** and training for the sake of training
- **Setting the stage** for additional training and development
- **Infusion of choice** and (some) independence [leads to empowerment/ confidence]
- **Holistic and integrated** curriculum and instruction

Source (in part): Connelly, 2008.

Preparing to Embrace the Warrior/Counselor Journey

- Peace officers are expected to wear **multiple hats,** similar to other professions
- The **difference** is that these hats are **changed much more frequently**; worn atop one another; and are often accompanied by **surges of adrenalin and precarious circumstances**
- Even if one is a **big fish** in a **small pond,** it is easy to get lost in the **ocean**
- The roles can prove **mentally and physically exhausting,** in part due to the chemistry involved



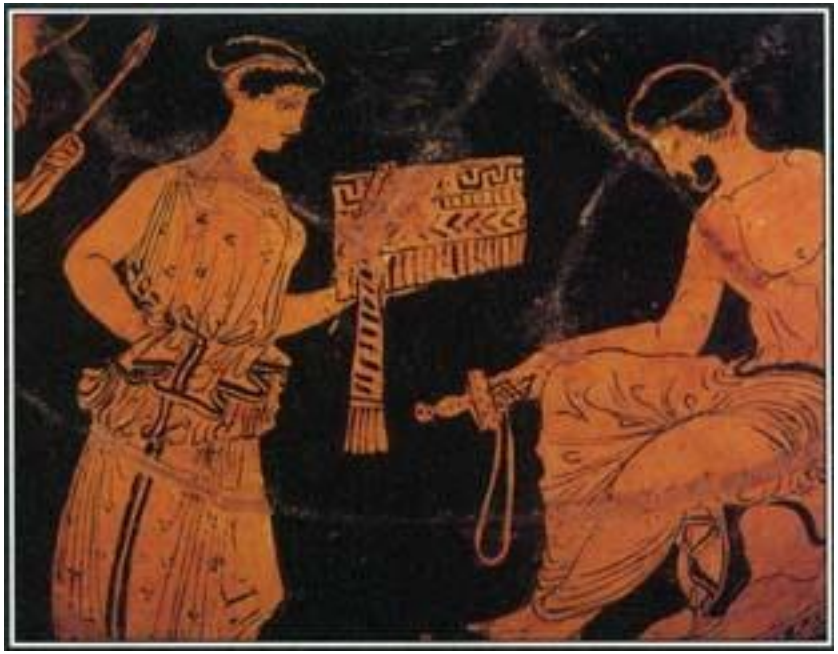
Source: University of California, 2015.

Context for Training Future Peace Officers

- **Trainee Diversity**
  - Trainees are now more diverse than ever, including and bring varied levels of expertise and experiences to the table (organic differentiation)
- **Preparing for Scrutiny**
  - Never before have we had so many 'eyes on' that catch us at our worst (or often seek to frame it as such)
- **Chaos and Fluidity**
  - No two chaotic circumstances are the same (or static)
  - Similar patterns (truncated timelines; higher expectations; and potentially lower margins)
  - High pressure situations followed by long lulls
- **Technology and Delivery:**
  - Divergent methods of delivery; structure and time; and immediacy of information availability (not to mention comfort!)
- **Understanding Learning Styles (trainees):**
  - Trainees assume ownership over learning and seek to engage opportunities aligned with their own learning styles and preferences
- **Metacognitive Skills:**
  - Imparting what one might call 'sound habits of mind' or process-related skills that extend beyond specific content areas (cross-cutting/applicable to a variety of situations)

Professional Mentor versus Curriculum Transporter

- Share knowledge and life experience
- Offer counsel and advice
- Listen/Inspire
- Offer encouragement/tell stories
- Are genuinely interested in the needs and concerns of their protégés
- Are open and honest/Explore goal setting
- Provide advice on professional development/Identify resources
- Help protégés cultivate leadership skills
- Provide insight into organizational (law enforcement) cultures
- Help provide exposure and visibility for protégés
- Advise on networking opportunities
- Coach/support
- Observe and provide feedback on practice



In the Homerian tale, Mentor was an elderly man charged with looking after the kingdom of Odysseus and well-being of his son Telemachus (a responsibility shared with Odysseus' foster brother Eumaeus). The Goddess Athena also took the form of Mentor when she encouraged Telemachus to go abroad to find his father during his Trojan war exploits.

Brain as Physiological Rudder

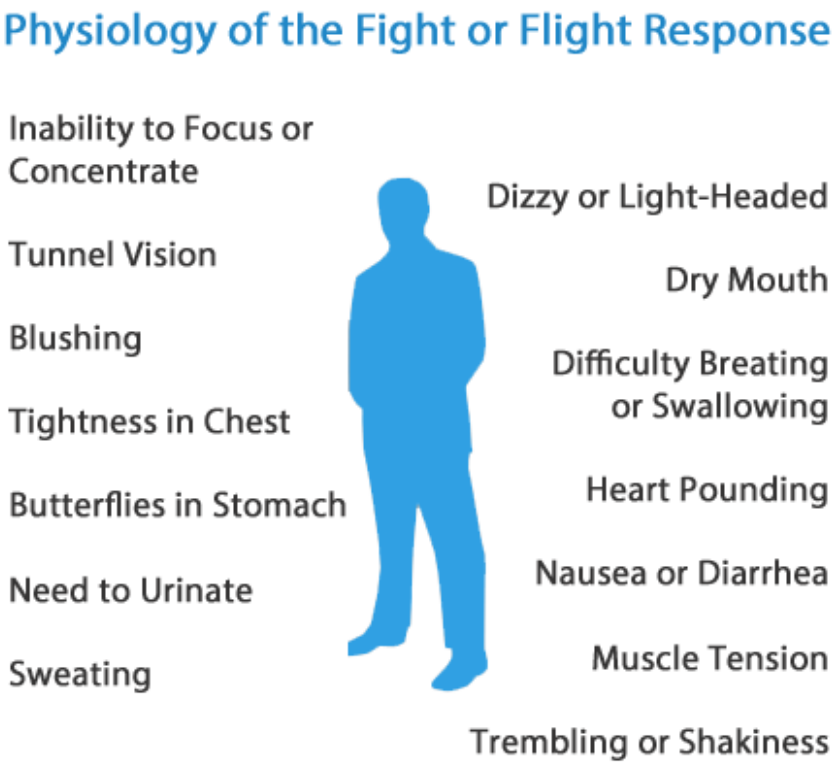
- Our instinctual reactions often propel us like a **sail** or an engine—without direction (loss of control)
- Thus, we need a **rudder** to control our instincts and move us to safer waters (experience and logical thinking)

The phenomenon seen here is called 'broaching' in which vessels in distress unexpectedly find themselves sailing parallel to large waves. The indicated solution is a bit frightening: zig-zagging around the waves until the danger has subsided.

Navigating the Storm

- Understanding the **biochemistry** of the situation (norepinephrine, adrenalin, epinephrine
- **'Labeling' and 're-labeling' emotions/feelings** allows one to move out of survival mode and serves as a catalyst for more logical thinking about a situation
- Deep breathing also helps to interrupt survival mode through **oxygenation**
- **Eliminate the impetus** for the fight-or-flight reaction
- **Repeated rehearsal empowers quick access** from long-term memory

Source: James, 2015



Comments and Questions

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