

Creating Passionate Learning Experiences

Margaret Martinez
Instructional Psychologist, Ph.D.
CEO, The Training Place, Inc.

Engaging learners in the excitement of learning!
Passionate experiences inspire passionate learners!



Highlights

- Highlight current neuroscientific research studying how people learn
- Understand the importance of emotions and personalization to improve learning outcomes
- Identify design strategies supporting changing 21C needs and directions.
- Show how learners can get more actively involved in engaging passionate learning experiences.

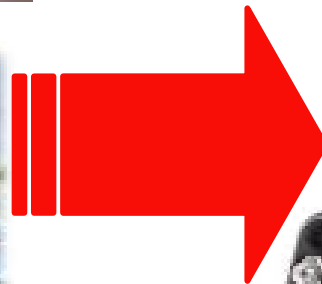


History of Transportation from 2000 BC



Which are your eLearning Challenges?

e-Learning works best for those who are highly motivated, autonomous, and self directed or goal oriented!
e-Learning is still evolving, no stable definition and now m-learning is already here!



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Comprehension

ALL MY FAVES
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Brain Morphology

Researchers at UC Semel Institute for Neuroscience examined 24 seniors from 55 to 76 years of age. Half had minimal Internet search experience (Net Naive group) and half had extensive experience (Net Savvy group). The groups did Google searches while brain pattern activation was measured (MRIs). Found that Google searching engages a greater extent of neural circuitry than text-based reading controls.



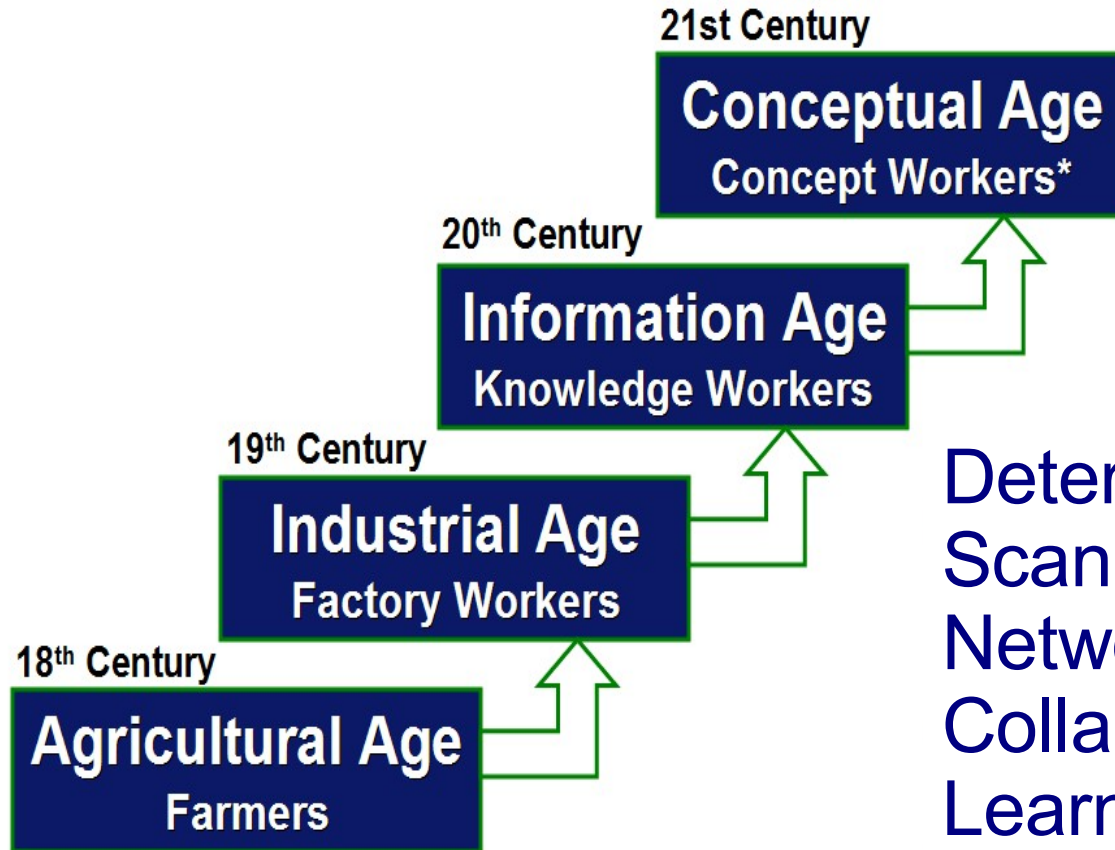
Brain Plasticity

- Understanding brain plasticity can help educators improve educational practice. Researchers are studying which cells and genes are involved in learning. They are looking at the effect of different training programs on synaptic changes. The question is how to learn something optimally?

<http://www.youtube.com/watch?v=Fk>



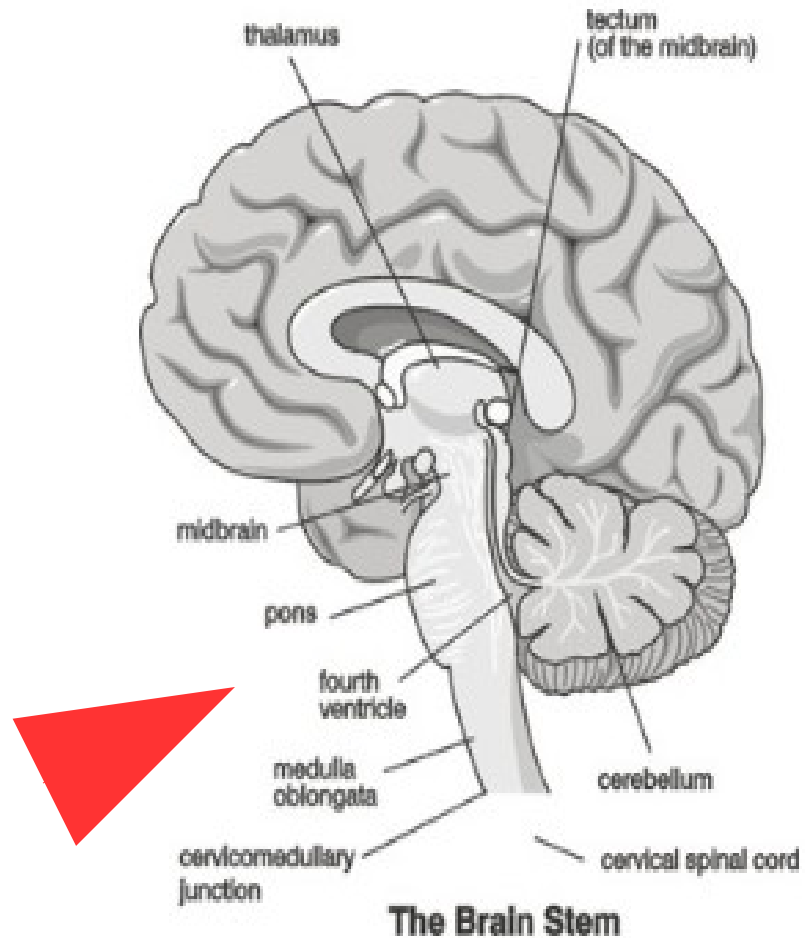
Work Literacy



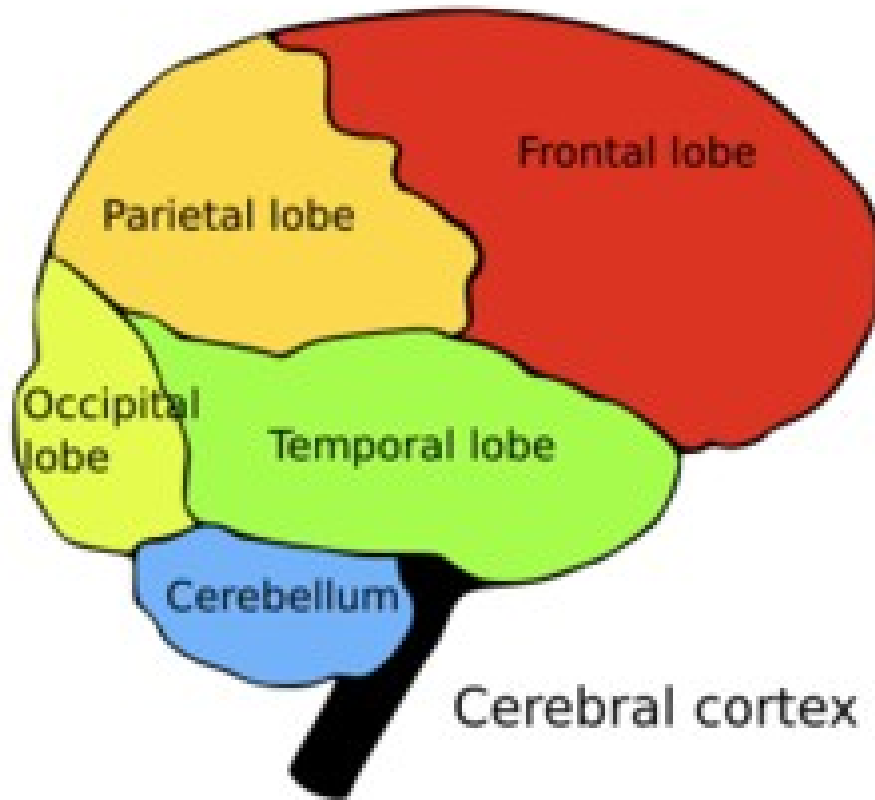
Determine,
Scan, Find,
Network,
Collaborate,
Learn, Reflect
and Reinvent



Brain Stem

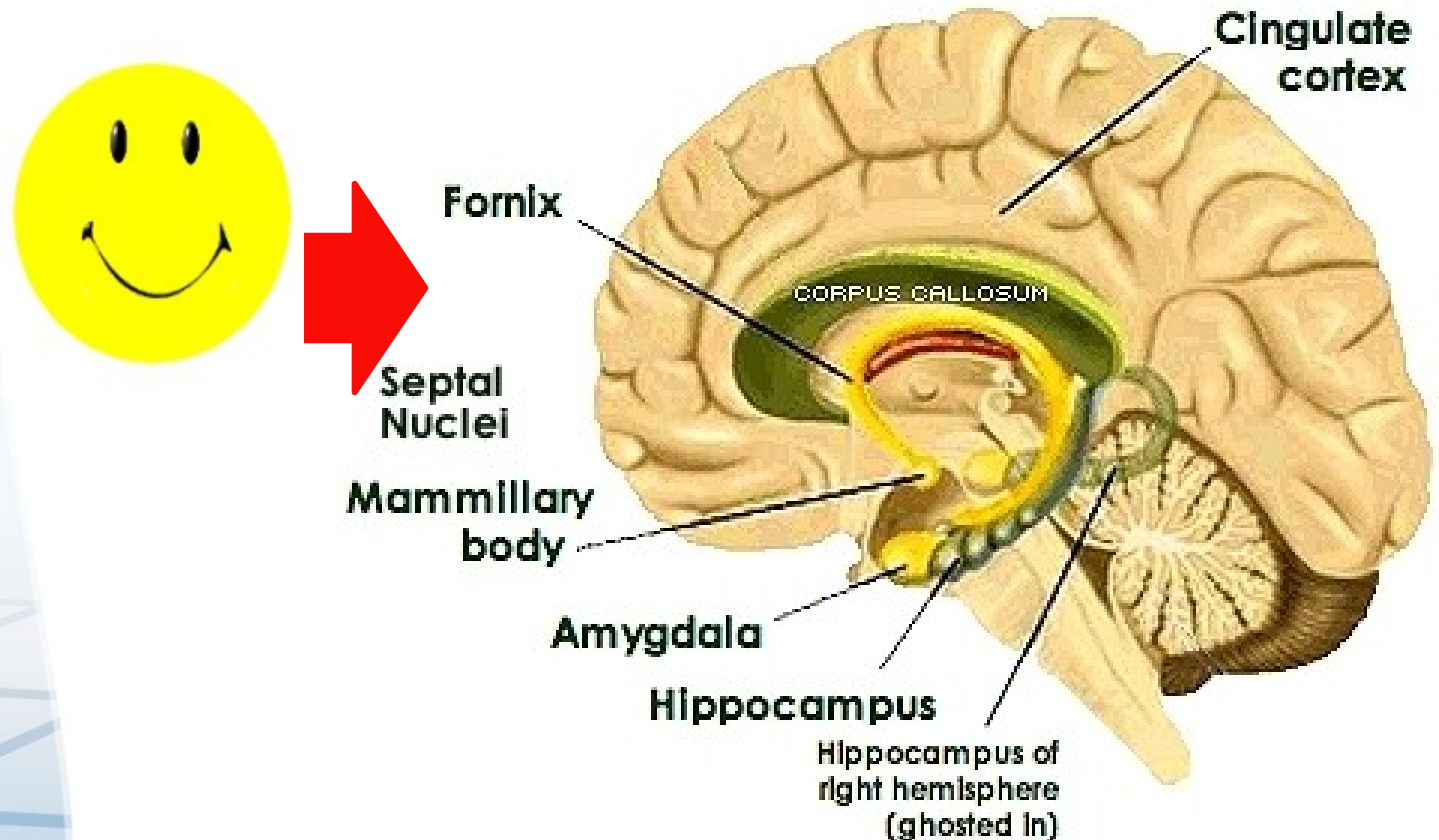


Cerebral Cortex



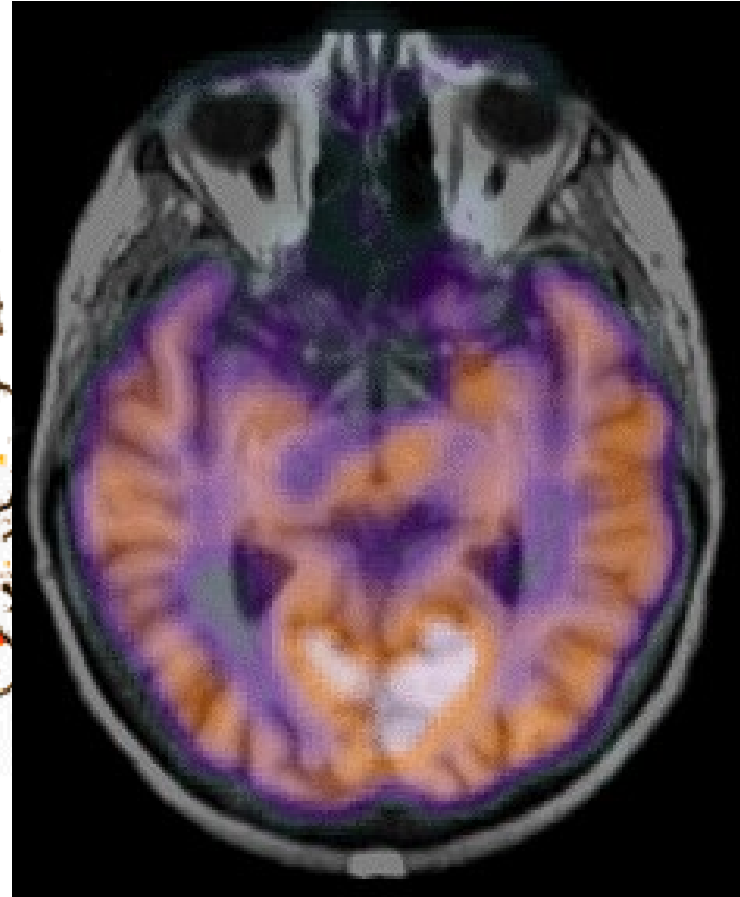
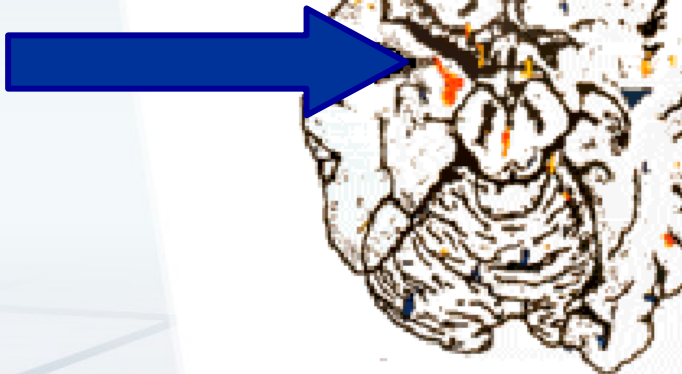
Biological Links to Emotions

Limbic System: Major Structures



How Does it Work?

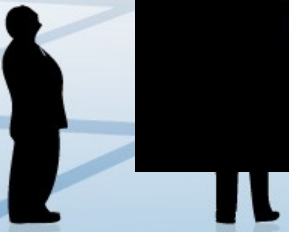
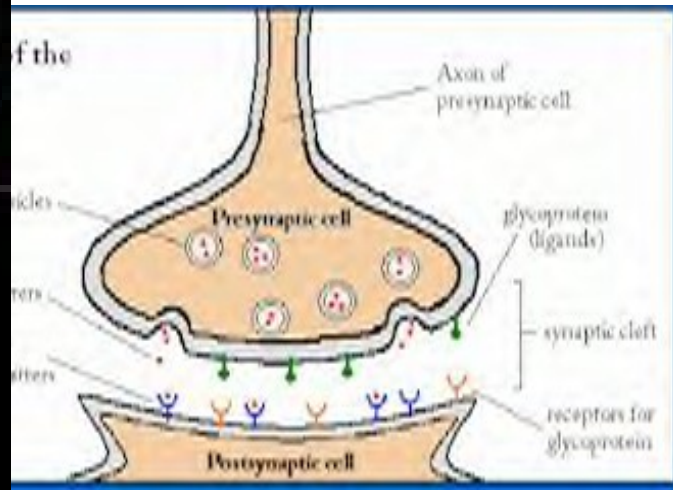
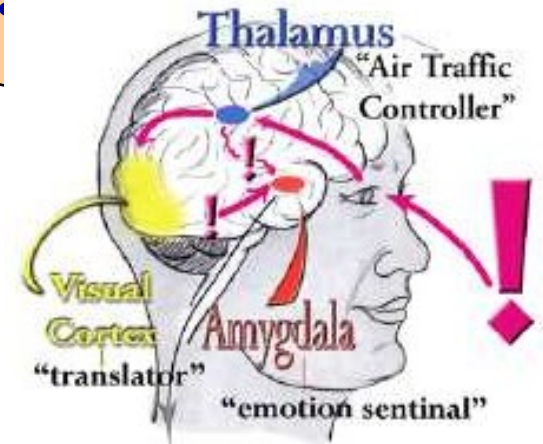
A) Emotional



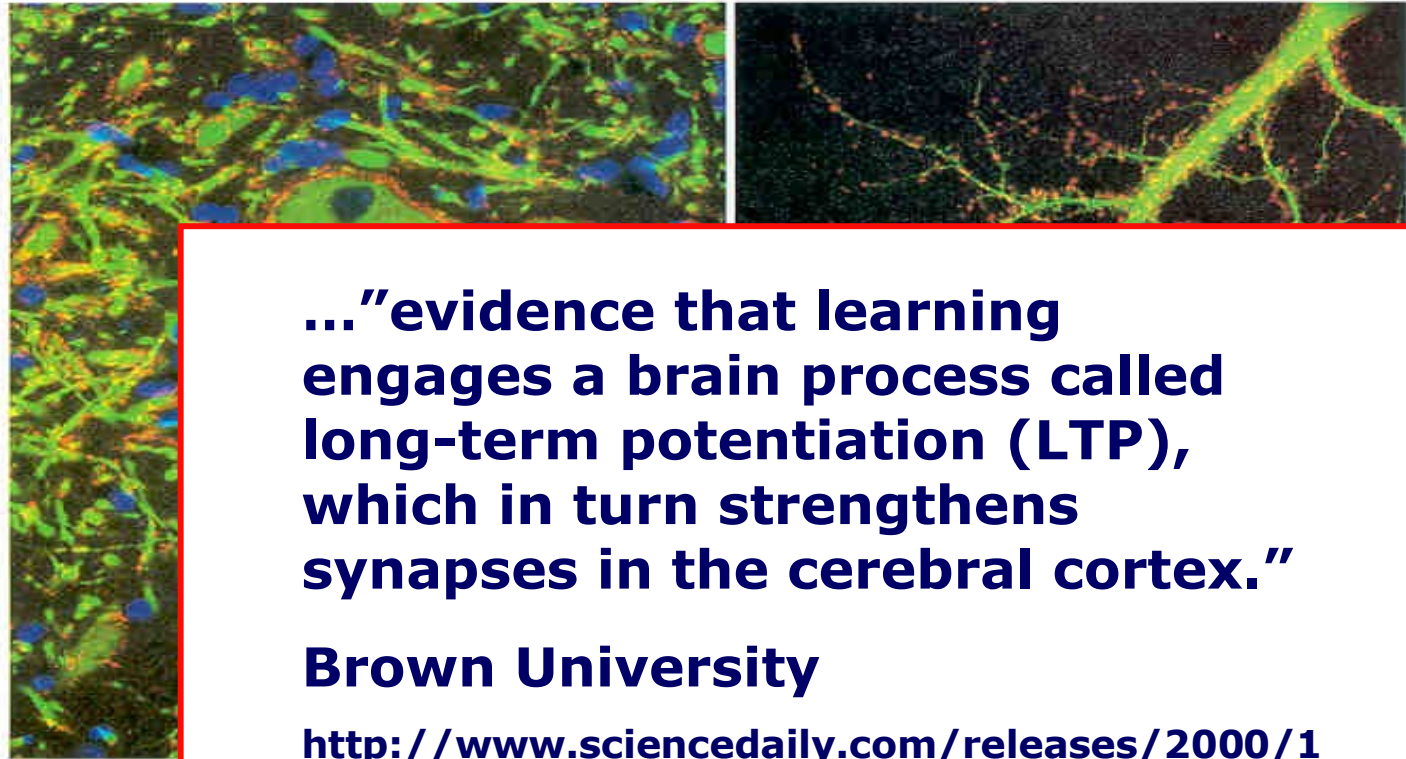
How We Learn



otions,
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(i)



Neuronal Development



...“evidence that learning engages a brain process called long-term potentiation (LTP), which in turn strengthens synapses in the cerebral cortex.”

Brown University

<http://www.sciencedaily.com/releases/2000/10/001020092659.htm>

<http://www.youtube.com/watch?v=r71Rolkftd4>

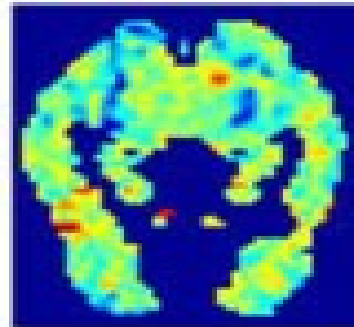
Source: Griffith & Zull



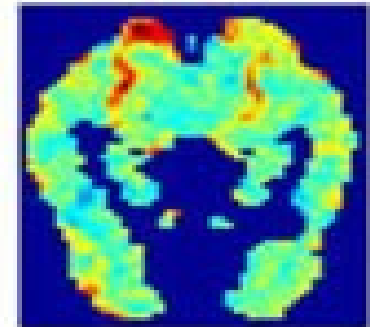
MRI Scans

Predicted:

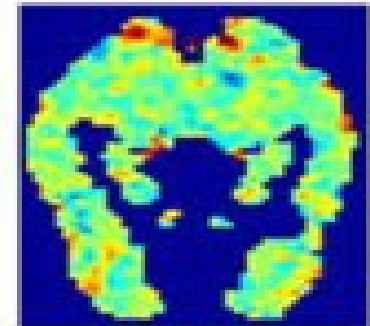
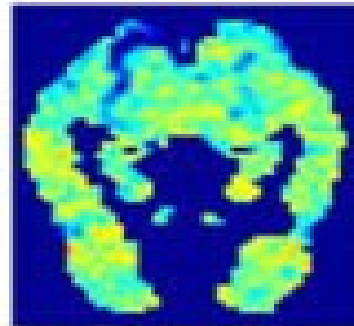
"celery"



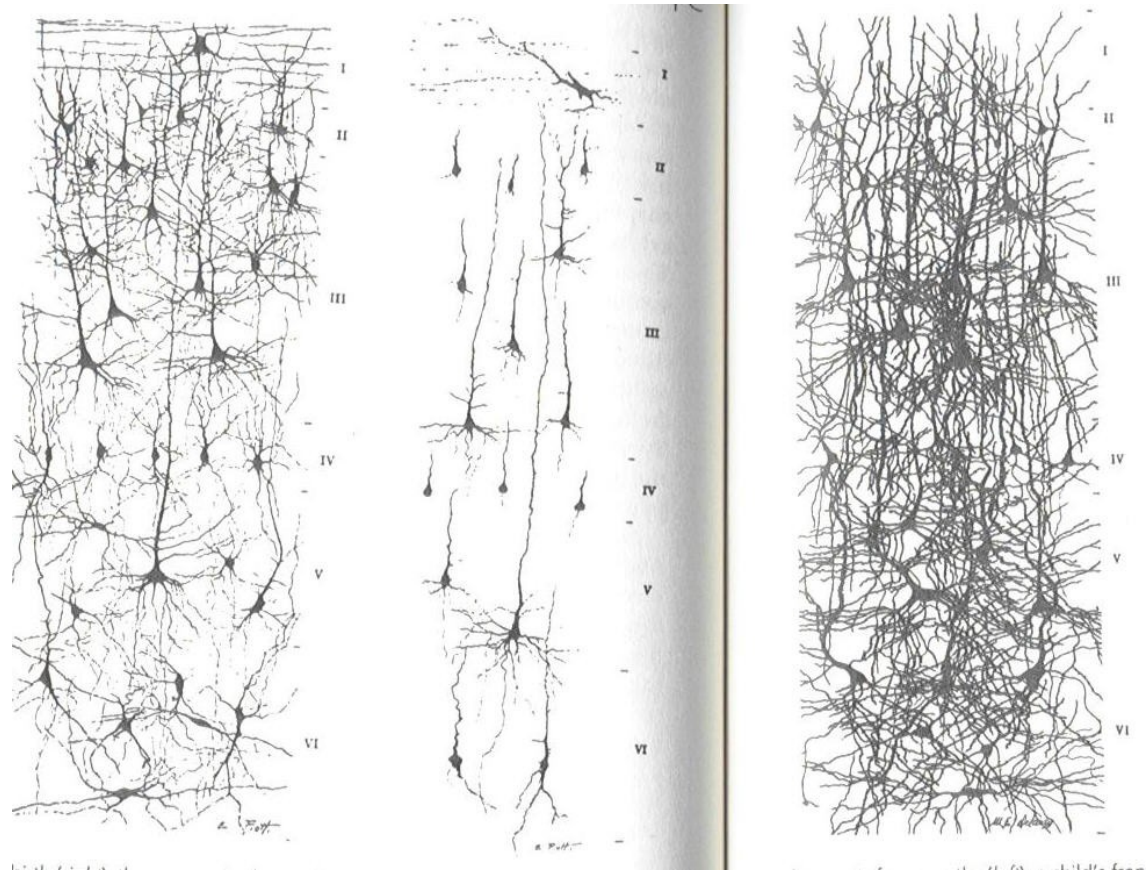
"airplane"



Observed:



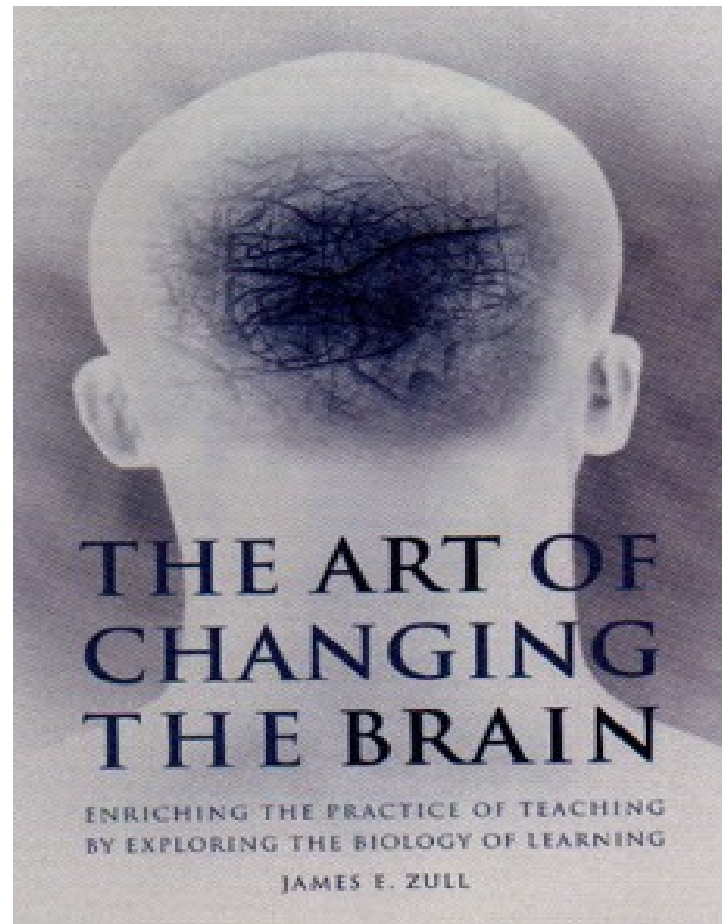
Learning Changes the Brain



Source: Zull



Art of Changing the Brain



James Zull

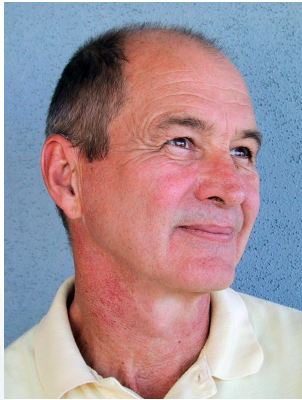
**Professor of Biology
& Director of UCITE**

**Case Western
Reserve University**

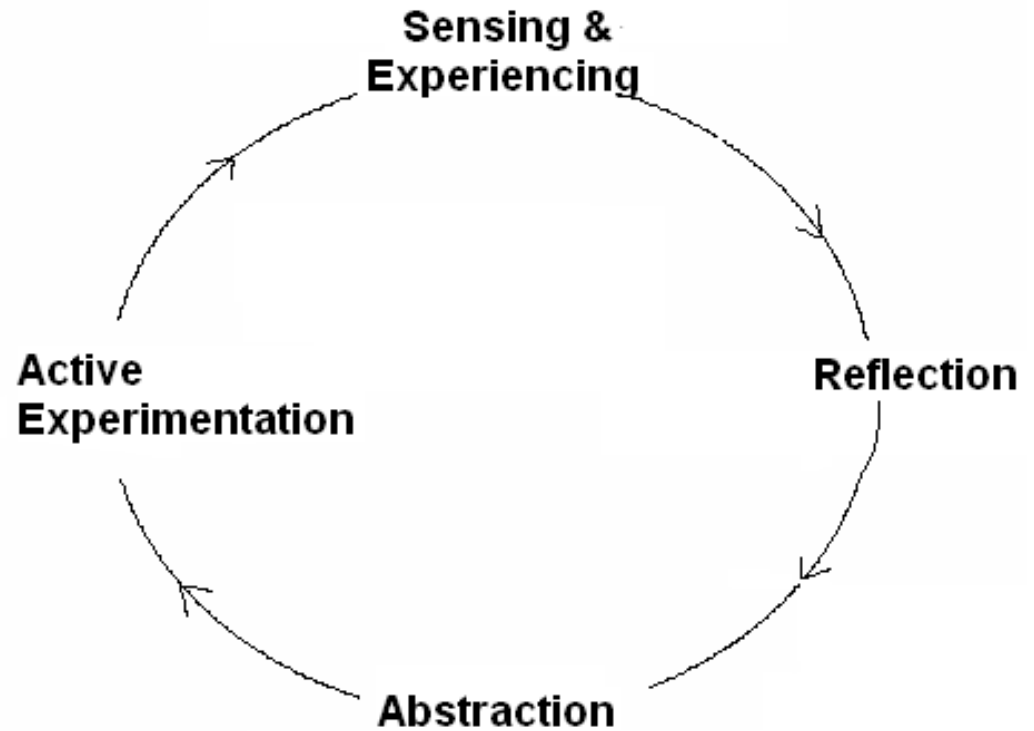
<http://www.case.edu/artsci/biol/zull.htm>



4-Step Learning Cycle



David A. Kolb
*Professor of
Organizational
Behavior
Weatherhead School
of Management Case
Western Reserve U*

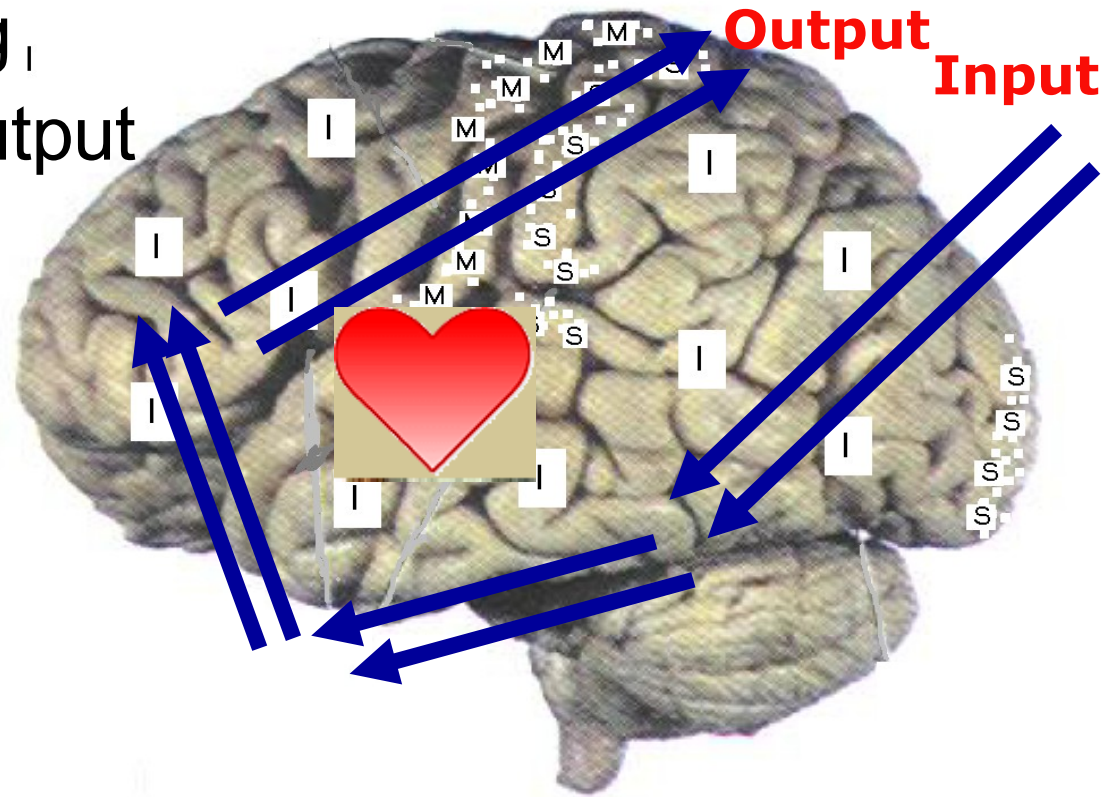


http://www.learningfromexperience.com/About_Us.htm



Brain Learning Cycle

S=Sensing
I=Integrating
M=Motor Output



Source: Zull, Art of Changing the Brain (2002)



Activity 1

Begin thinking about one time in your life where you felt passionate about learning. It might have been when suddenly the light bulb flashes and you finally understand. Or, it might also have been an experience where you couldn't wait to wake up in the morning to learn some more about a new skill.



Activity 2

Tell your neighbor what you think of the one key attribute or quality of that experience which made it so memorable for you.



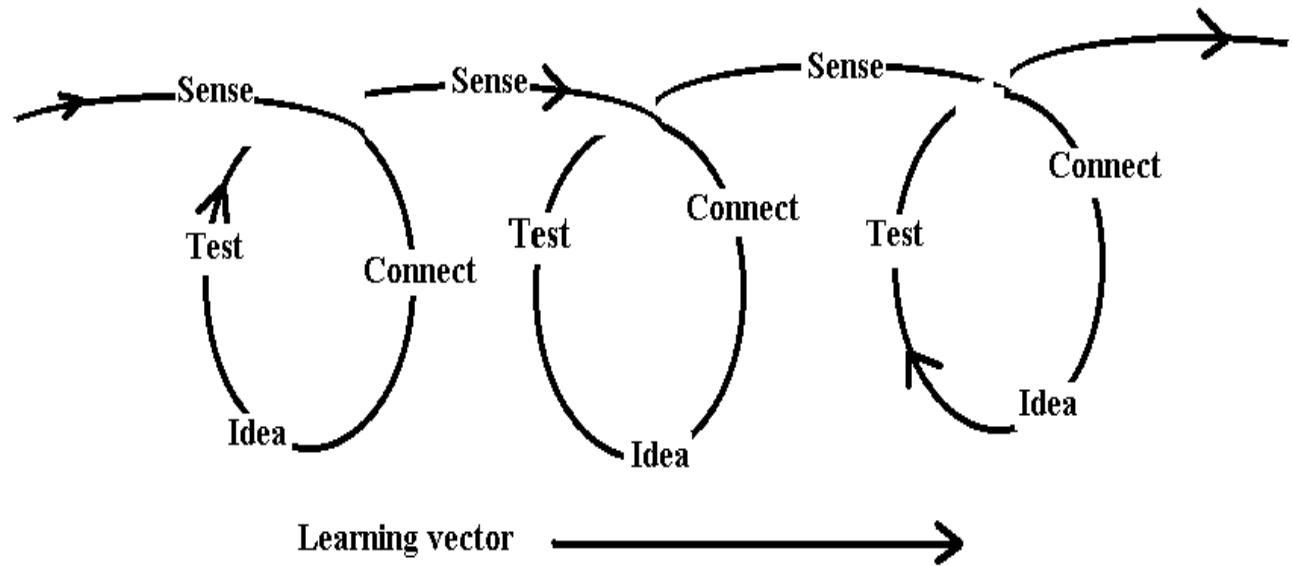
Emotions

- Emotions influence everything, e.g.,
 - Arousal, selectivity of attention, prioritization, elaboration, memory storage (encoding), decisions, persistence, context, retention
 - Neuromodulators, (e.g., dopamine, serotonin, acetylcholine, histamine and others).



Iterative Learning Processes

Learning spiral



Source: Zull, Art of Changing the Brain (2002)

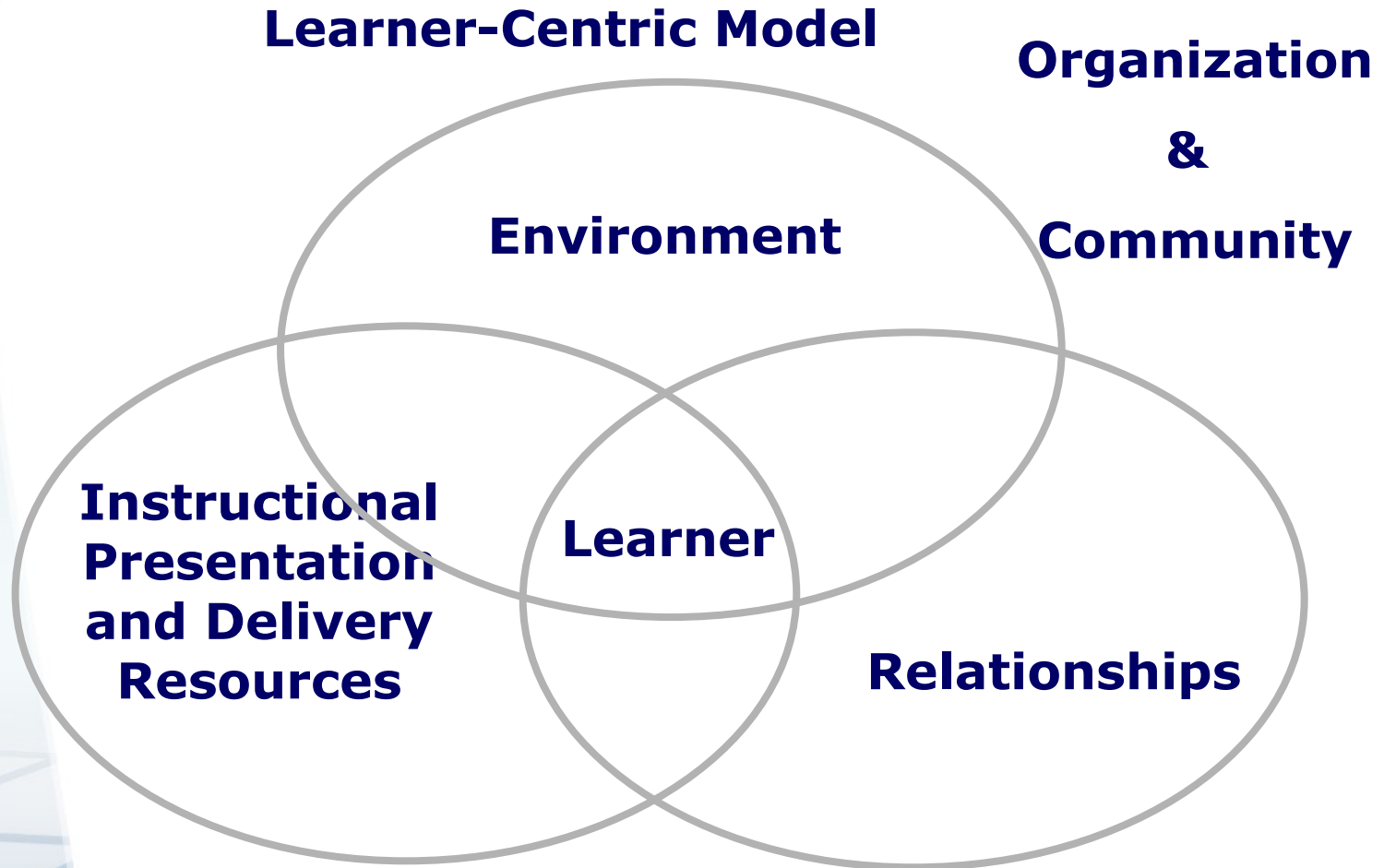
Reinvent Audience Analysis



Align better with business objectives.



Reinvent ISD for Next-Gen



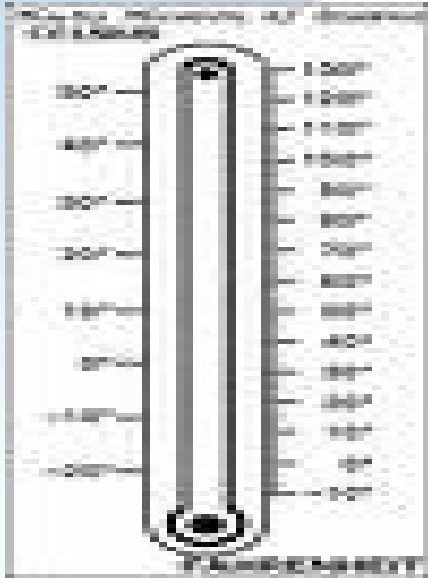
--Measures for Improvement--



Successful Learners

Key characteristics associated with the successful learner:

- Achievement motivation, goal oriented
- Assertiveness & self confidence
- Dedicated, strong work ethics
- Strong internal locus of control
- Holism, creativity & resourcefulness
- Persistence, perseverance and tenacity
- Tolerance of ambiguity
- Initiative, energetic, & opportunistic
- Independence, adaptability, & versatility
- Strong nonverbal and cognitive ability

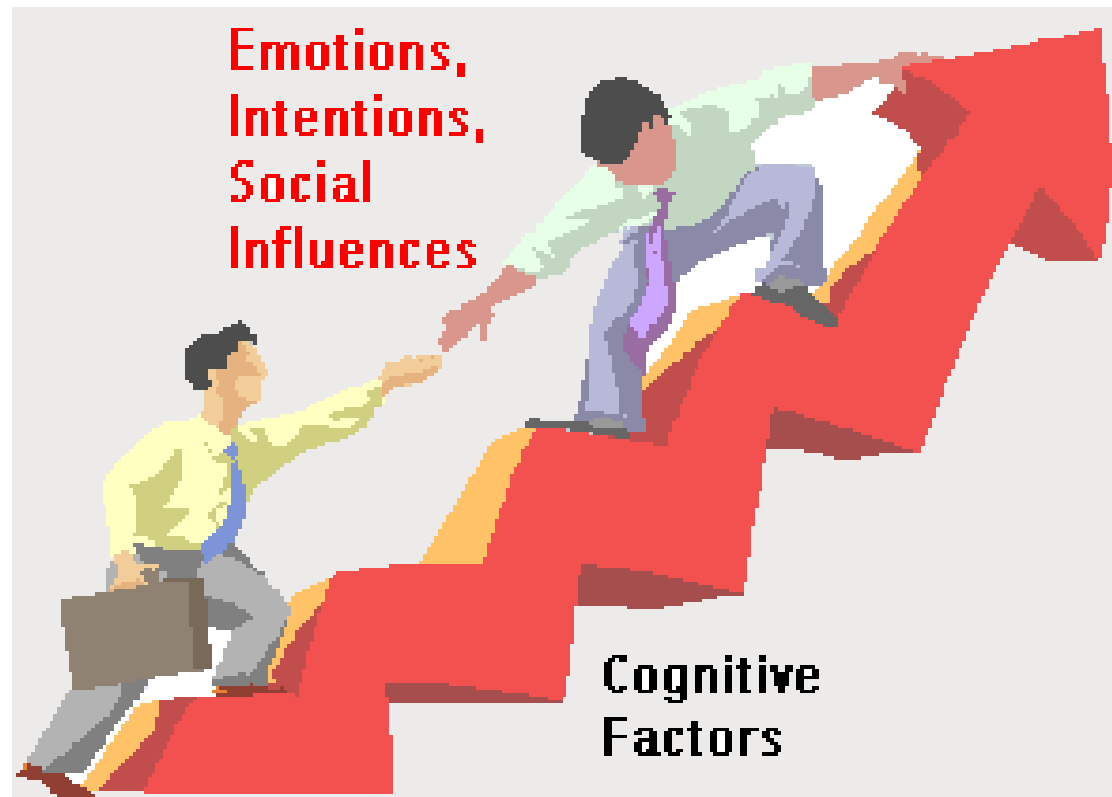


Success Attributes

Attribute		
Autonomy / Independence	Light Red	Dark Blue
Learner Control	Light Red	Dark Blue
Goal Orientation	Light Red	Dark Blue
Self-Assessment / Review	Light Red	Dark Blue
Problem Solving	Light Red	Dark Blue
Holistic Thinking	Light Red	Dark Blue
Risk Taking	Light Red	Dark Blue
Long-Term Thinking	Light Red	Dark Blue
Self Reliance	Light Red	Dark Blue
Progress Monitoring	Light Red	Dark Blue
Self Reflection	Light Red	Dark Blue
Passion	Light Red	Dark Blue
Active Participation	Light Red	Dark Blue
Intrinsic Motivation	Light Red	Dark Blue



Introduce the Whole-Person Perspective



Learning Orientations Construct

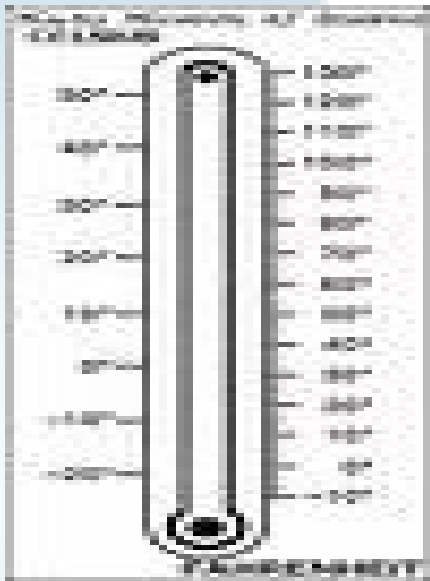
LO research recognizes individual differences in learning and uses 3 factors to measure and describe the differences...

- 1. Self-Motivation**
- 2. Independence**
- 3. Self-Directedness**



Learning Orientation Questionnaire (LOQ)

- Describes how learners generally want or intend to learn (learning agility)
- Measures dominant psychological factors (affective, conative, cognitive, and social) that influence learning, memory, and performance
- Provides 25-item survey (15 min)
- Access Code: IS120701JJ at: <http://tinyurl.com/5s5j6o>



Learning Orientations

- **Transforming Learners (Innovators)**
Mentor Me

Rely on intrinsic resources to self-manage their environment independently—set long & short goals accordingly.



Learning Orientations



- **Performing Learners
(Implementers)
Coach Me**

Rely on intrinsic/extrinsic resources to semi-manage their environment collaboratively—set short, some long goals accordingly.

Granularity= 1. Follows Principles, Manages & Probes or 2 Follows Thru on Procedures, Finds Fact, & Meets Requisites



Learning Orientations



Conforming Learners (Sustainers) Guide Me


Rely on extrinsic resources to comfortably exist within their environment dependently—set short goals accordingly.

Granularity= 1. Meets routine requirements 2. Avoids risks and complicity

Page Turners

Skills^{oft}

Preparing for Cross-selling in a Customer Service Call Lesson Overview



Are YOU Prepared?

Have you ever had the experience of answering the phone, initiating a dialogue, and carrying on a conversation before you recognized whom you were talking to? Awkward, isn't it? Since you weren't prepared to talk to this person, your mouth engaged before your brain had a chance to catch up.

Page 1 of 10

Turn Audio Off
Stop Audio

Applet started Internet



Complex Cognitive Load

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Windows XP Support Center

[Windows XP users: Get Service Pack 2 today](#)

Your first step to help protect your computer is to install this new security update to Windows XP. [Learn how to get it now.](#)

On this Page:

- [Highlights & Top Issues](#)
- [Step-by-Step Instructions & How To Articles](#)
- [Downloads and Updates](#)
- [Common Knowledge Base Searches](#)
- [Additional Resources & Related Sites](#)

Highlights & Top Issues

- [Windows XP Service Pack 2 \(SP2\) Support Center](#)
For support information specific to Windows XP SP2, visit this support center.
- [Computer Viruses: Description, Prevention, and Recovery](#)
- [Identify & Help Protect Yourself from Deceptive \(Spoofed\) Web Sites](#)
- [How to Enable or Disable Internet Connection Firewall in Windows XP](#)
- [Support WebCast: Microsoft Windows XP: Internet Connection Firewall](#)
- [How to Configure and Use Automatic Updates in Windows XP](#)
- [Get Started Using Windows XP](#)
This page contains the information you need before you install Windows XP.
- [Frequently Asked Questions](#)
Have a question? You're not alone. See the answers to the questions our support professionals hear the most.
- [Windows XP Professional Topics](#)
Looking for advanced information like corporate deployment, domains, user migration, scripting, and network performance tuning? See our Windows XP Professional topics.
- [Windows XP Support WebCasts](#)
Learn tips and tricks on how to use your new Microsoft product via a Support WebCast presented by a Microsoft Support Professional.
- [Get Windows XP Service Pack 1](#)
Windows XP Service Pack 1 (SP1) provides the latest security, reliability, and performance updates to the Windows XP family of operating systems.
- [Support WebCast: Microsoft Windows XP: Maintaining Your Windows XP System](#)
- [How to Troubleshoot Hardware and Software Driver Problems in Windows XP](#)



Person-environment fit theory predicts strong matches between the person and the social environment results in satisfaction

Areas for Improvement

1. Problem-solving and critical thinking
2. Collaboration across networks and leading by influence
3. Agility and adaptability
4. Initiative and entrepreneurship
5. Effective written and oral communication
6. Accessing and analyzing information
7. Curiosity and imagination.



Top Reasons for Dropping Out

- **Learner Ability for Objectives**
- **Learner Readiness**
- **Lack of Commitment**
- **Unmet Requirements**
- **No Context / Connection**
- **Too Much (Info, Distractions, Obstacles, etc.)**
- **No Involvement or Relationships**
- **Unmet Communication Needs**
- **Attitudes and Behavior Patterns**
- **No Time Management Skills**
- **Stress / Anxiety / Frustration**



Top Passion Strategies

- Always engage emotions. The best learning comes from concrete experiences stimulated by great emotions that influence how we allocate attention and ensure retention and recall.
- Detect what is meaningful, expected, understood, and valued; use relevant, concrete experiences to build on what exists in memory. Identify meaningful benefits: why should I care and pay attention.



Top Passion Strategies

- Make connections with patterns / images (e.g., faces) and reinforce them continuously to improve learning.
- Ensure practice and feedback opportunities; the best learning comes from experiences. Repeat using different perspectives and different senses; some more or others!



Top Passion Strategies

- Often don't focus on mistakes or misunderstandings; minimize negative emotions and try to build on what is correct.
- Structure challenges to scaffold / support / pattern / model new opportunities for different types of learners.
- Use motion and physical activities.



Top Passion Strategies

- Use metaphors, parables, similes, analogies, and stories to enhance connections with meaning; help your students to create their own matching ideas, images, and patterns. Humans are good at copying. Use these techniques to help students COPY and PRACTICE expertise.



Top Passion Strategies

- Use reflection to search for connections, consider meaning, and build new knowledge; minimize other sensory experiences.
- Use mystery and captivation to stimulate curiosity and fun; we are attracted to what appeals. Foster interest with variety and surprise.



Top Passion Strategies

- Tap into all the human senses as you progressively model how skills are acquired; use those that are very relevant to the learning experience.
- The brain likes to predict; use strategies to help set and meet expectations.
- Use active discourse, engaging exchange; use conversational style.



Top Passion Strategies

- Provide a pleasurable, stress free environment that ensures comfort, safety, and security.
- Show, don't tell (Guide, Coach, Mentor); help learners experience IT and produce; hands on.
- Chunk; don't overload learning or memory capability.



Top Passion Strategies

- Use graphics to help with focus, getting attention, and concentration and engagement.
- Personalize strategies; use technology to adapt environments.
- Ask the SMEs. Focus not on the skill but on the model that supports new skill acquisition (e.g., learning to walk).



Top Passion Strategies

- The brain likes pleasure and is asking to be engaged and be happy. It may not happen if we rely on old things!
- Be passionate yourself; spread your passion to ignite fires in other hearts!



Use Other Sources

- NeuroMarketing and Advertising

<http://www.myprofessionaladvertising.com/Advertising%20for%20the%20Human%20Brain.htm>

- Sports Psychology

<http://www.selfgrowth.com/articles/Sheridan10.html>

- Change Management

<http://home.att.net/~nickols/change.htm>

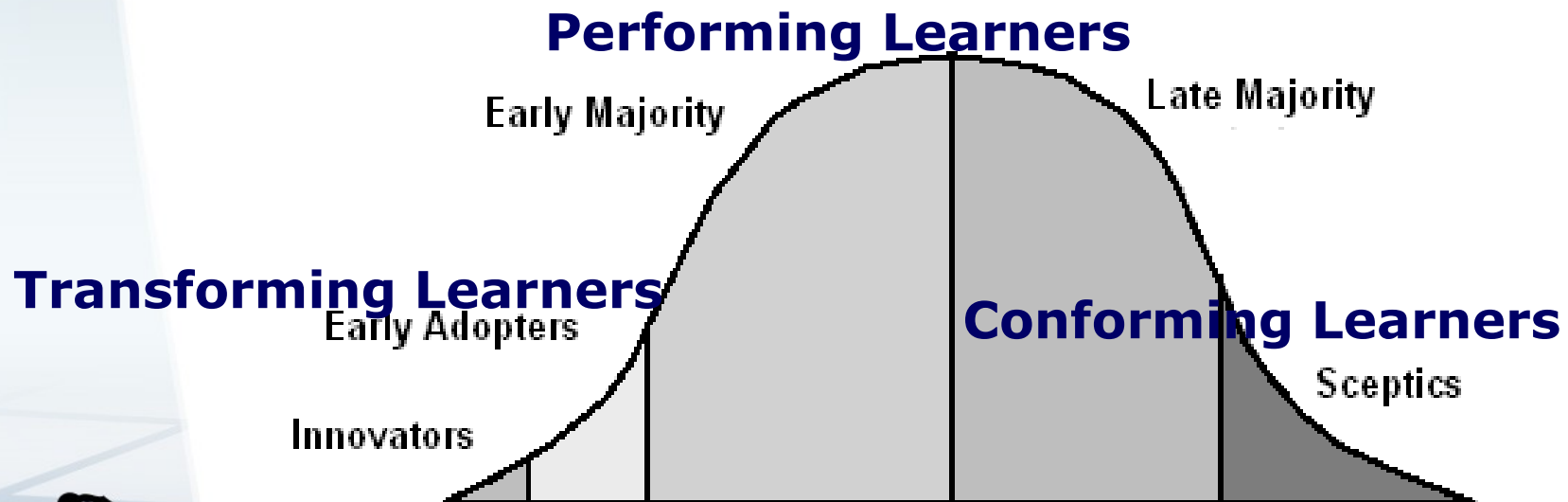
- Diffusion of Ideas

<http://traubman.igc.org/change.htm>



A Primer in Diffusion of Innovations Theory

Diffusion researchers found that, for any given behaviour, an audience could be broken down into 5 segments, based on their propensity to accept the new idea or behaviour.



Learning Strategies

- Learning Strategies
http://www.astd.org/LC/2003/1103_dobrovolny.htm
- Teaching and Learning Strategies
http://www.newhorizons.org/strategies/front_strate
- Learning Strategies Database
<http://www.muskingum.edu/~cal/database>
- News from the Neurosciences
http://www.newhorizons.org/neuro/front_neuro.htm



Summary

In your designs, remember to:

- use strategies to nurture emotions/fun
- support the brain's natural inclination: 1 sense-2 connect-3 abstract-4 create
Practice-Feedback-Reflect-Again
- use analysis to understand values, abilities, expectations and support individual differences in learning when it matters
- evaluate progress, measure success, reflect and reinvent



More Brain Research?

Look at:

- <http://www.trainingplace.com/newsletter/brainsarticles.htm>
- Amygdala
- Neuromodulation
- Neuronal Development
- Synapses
- Mirror Neurons
- Brain Plasticity
- Cingulate Cortex or Gyrus
- Latent Inhibition



Brain Fitness Market

- State of the Brain Fitness Software Market 2008 report (SharpBrains) estimates that the Brain Fitness market revenues grew from \$100m in 2005 to \$225m in 2007, in the US.
- 2008 developments, public policy, venture capital investments, major corporate initiatives (e.g., insurance companies and new research will support continued growth. SharpBrains forecasts the market to grow above \$2B by 2015.



Learning Orientation Links

Learning Orientation Questionnaire

<http://www.trainingplace.com/loq/loqinfo.htm>

Learning Orientation Research Site: [http://](http://www.trainingplace.com/source/research/index.html)

www.trainingplace.com/source/research/index.html

Learning Orientation Studies:

<http://www.trainingplace.com/source/research/studies.htm>

Learning Orientation Papers:

<http://www.trainingplace.com/source/research/relatedstud>

Find this presentation at:

<http://www.trainingplace.com/pres/brainbased2009.pdf>



To Your Learning Success

Dr. Margaret (Maggie) Martinez
mmartinez@trainingplace.com
(520) 877-3991
743 W Bougainvillea Drive
Oro Valley, AZ 85755

