

# The Evolution of HERS Rater Training

Setting the Next Generation of  
HERS Raters on the Path to Success

# The Evolution of HERS Rater Training

Allison Bailes III, Energy Vanguard

Scott Doyle, Energy Logic

Matt Thornberry, Energy Logic

# What this session is:

- First person account of evolving HERS Training from two separate organizations



# The Evolution of HERS Rater Training

**Scott Doyle**  
**Director**  
**Energy Professional Services**  
**EnergyLogic, Inc.**

# What this session is:

- Why we're changing and how
- Discussion on current practices and growing trends

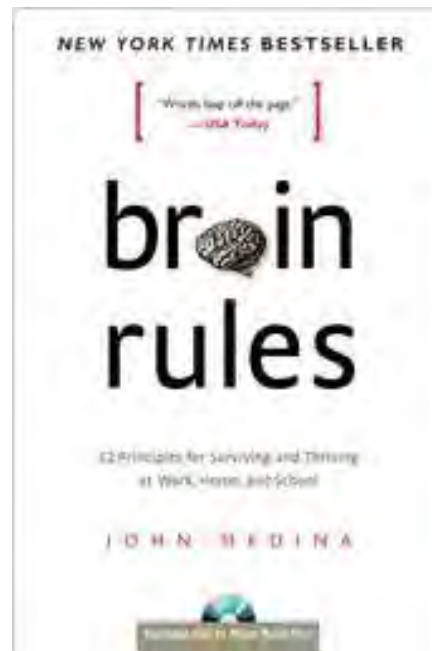
# What this session is NOT:



# Basic Principles of Adult Education

My Favorite Resource:

- Brain Rules by Dr. John Medina



# Basic Principles of Adult Education

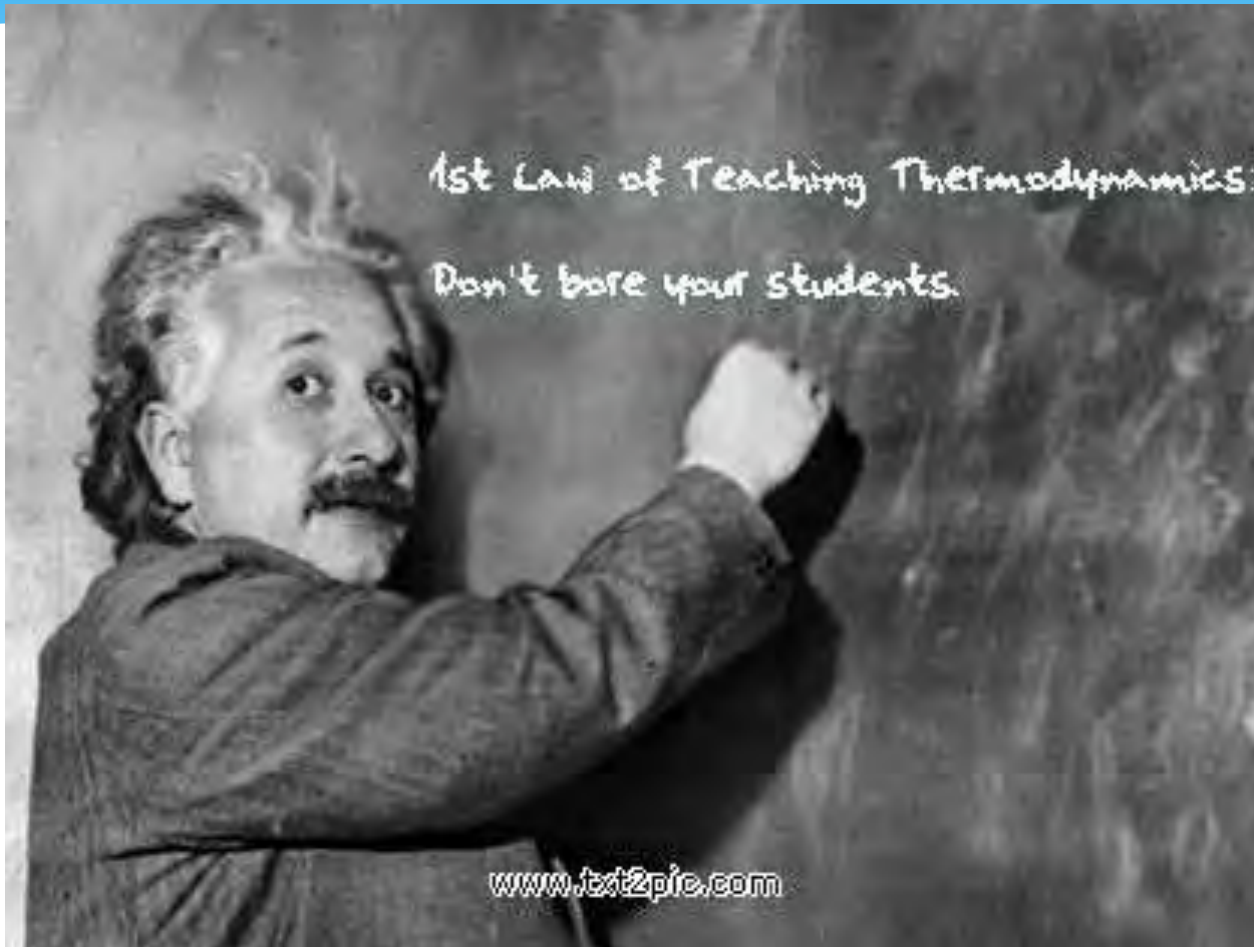
## Brain Rules:

- Rule #4 Attention
  - Audience checks out after 10 minutes





# So Don't Be Boring!



# Basic Principles of Adult Education

## Brain Rules:

- Rule #10 Vision Trumps all other senses




# This...

## Convection

- Energy transferred by a moving fluid, like air or water



# ... Is Better than this

Temperature is different from heat 

- **Temperature:**
  - is a measure of the internal energy of the system
- **Heat:**
  - is a measure of how energy is transferred from one system (or body) to another
- **The greater the heat absorbed by a material**
  - the more rapidly the atoms within the material begin to move,
  - and thus the greater the rise in temperature

# Current Practices



Passive learning



# Current Practices



Monday	Time	Tuesday	Time
<b>Introductions</b>	8:00	<b>Principals of Moisture - 85 Slides</b>	8:00
Logistics & class expectations	8:15	Durability, Bulk Water, Vapor, IAQ, CO	8:15
<b>Building Science 101 - 126 slides</b>	8:30	Ventilation ASHRAE 62.2	8:30
Overview - the cert and & brief history	8:45		8:45
The climate & systems thinking	9:00		9:00
Air-flow - driving forces	9:15		9:15
Energy & energy movement	9:30		9:30
Human comfort	9:45		9:45
Intro to Thermography	10:00	<b>15 min break</b>	10:00
<b>15 min break</b>	10:15	<b>Water Heaters -43 Slides</b>	10:15
<b>Advanced Framing - 54 slides</b>	10:30	Energy factor, tanks, tankless, solar	10:30
Framing factor & window-to-wall ratio	10:45		10:45
Thermal bridging, types of framing	11:00		11:00
	11:15	<b>Intro to Mechanical - 33 Slides</b>	11:15
	11:30	Comfort, HVAC design, design temp	11:30
	11:45	HHD, CDD, sensible and latent heat	11:45
<b>Lunch</b>	12:00	<b>Lunch</b>	12:00
<b>Lunch</b>	12:15	<b>Lunch</b>	12:15
<b>Lunch</b>	12:30	<b>Lunch</b>	12:30
<b>Lunch</b>	12:45	<b>Lunch</b>	12:45
<b>Insulation 101 - 135 slides</b>	1:00	<b>Mechanical Systems 83 Slides</b>	1:00
R & U-Value, RESNET grading,	1:15	Space heating, space cooling	1:15
Heat flow, weighted-R, parallel path	1:30	Heat pumps, low energy cooling	1:30
Types and application, retrofitting	1:45	Default values	1:45
	2:00		2:00
	2:15		2:15
"	2:30	"	2:30
"	2:45	"	2:45
	3:00		3:00
<b>15 min break</b>	3:15	<b>15 min break</b>	3:15
<b>Air Barriers &amp; Vapor Barriers - 57 slides</b>	3:30	<b>Intro To Blower Door - 37 Slides</b>	3:30
Defining the two, problems, condensation	3:45	Pascal, doing a test, intro to the DG700	3:45
How to install	4:00	Can't reach 50, expressions of leakage, ACH, NACH	4:00
	4:15		4:15
	4:30	"	4:30
<b>Windows - 54 Slides</b>	4:45	<b>Blower Door Demo and Hands-On</b>	4:45
NFRC, U-value, SHGC, VT, AL, Low-e	5:00		5:00
Gases, frame, edge, comfort, passive solar	5:15		5:15
	5:30		5:30
	5:45		5:45
<b>Homework: Read Krigger, Practice Test #1</b>	6:00	<b>Homework: Read Krigger, Practice Test #2</b>	6:00

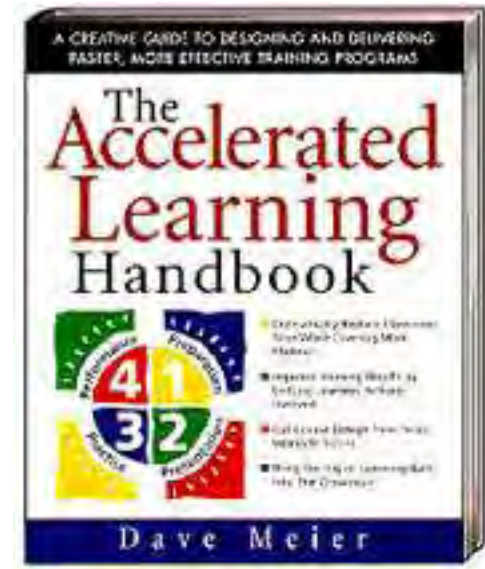
# The Evolution of HERS Rater Training

Allison A Bailes III, PhD  
President  
Energy Vanguard



# EV's Main Resource

*The Accelerated Learning Handbook*  
by Dave Meier



# Guiding Principles

from *The Accelerated Learning Handbook*

Learning involves whole mind & body.

# Guiding Principles

from *The Accelerated Learning Handbook*

Learning is creation, not consumption.

# Guiding Principles

from *The Accelerated Learning Handbook*

Collaboration aids learning.

# Guiding Principles

from *The Accelerated Learning Handbook*

Learning happens on many levels simultaneously.

# Guiding Principles

from *The Accelerated Learning Handbook*

Learning comes from doing the work itself.

*“I hear and I forget. I see and I remember. I do and I understand.” ~ Confucius*

# Guiding Principles

from *The Accelerated Learning Handbook*

Positive emotions greatly improve learning.

# Guiding Principles

from *The Accelerated Learning Handbook*

The visual brain learns better & faster.





# The SAVI Approach to Learning

- \* Somatic
- \* Auditory
- \* Visual
- \* Intellectual

# An Example of Somatic Learning Teaching the Psychrometric Chart

- \* Let students be a point on the chart.
- \* Give them enough data to find their spot.
- \* Give them a change and have them find new spot.
- \* Play games, like Simon Says.



# An Example of Intellectual Learning Using Concept Tests

Give the students a question and let them discuss it. For example:

*Is it possible to build a house too tight?*

- A. No, a house can never be too tight.*
- B. Yes, a house needs to breathe.*



# Concept Test

What should we spend most time on?

- \* Preparation
- \* Presentation
- \* Practice
- \* Performance

# The Learning Cycle



- \* Preparation
- \* Presentation
- \* Practice
- \* Performance

# Preparation Phase

- \* Email
- \* Phone call
- \* First day

# Presentation Phase



- \* Dominates most classes
- \* PowerPoint bingo
- \* Short stretches followed by activity

# Practice Phase

- \* Where students should spend a lot of their time
- \* Hard to do with demands of having students pass test in 5 days
- \* Lack of practice time is why many students feel overwhelmed and underprepared.



# Performance Phase

- \* National Rater Test
- \* 2 required ratings
- \* Pressure testing exam

# Highlights of the EV HERS Class

- \* 8 days instead of 5
- \* 2 phases:
  - \* 1<sup>st</sup> 5 days – a bit of everything
  - \* Last 3 days – 2 required ratings + pressure testing



# Highlights of the EV HERS Class

Rating activities every day



# Highlights of the EV HERS Class

3 attempts to pass the test



# The Evolution of HERS Rater Training

**Matt Thornberry**  
**Deputy Director**  
**Energy Professional Services**  
**EnergyLogic, Inc.**

# Current Approach



# Motivation for Change



- \* Evaluation
- \* Adult Education Principles
- \* Commitment to Industry



# Learning Management System (LMS)



- Administration
- Rapid Content Development
- Student Tracking
- Developed for Social Interaction

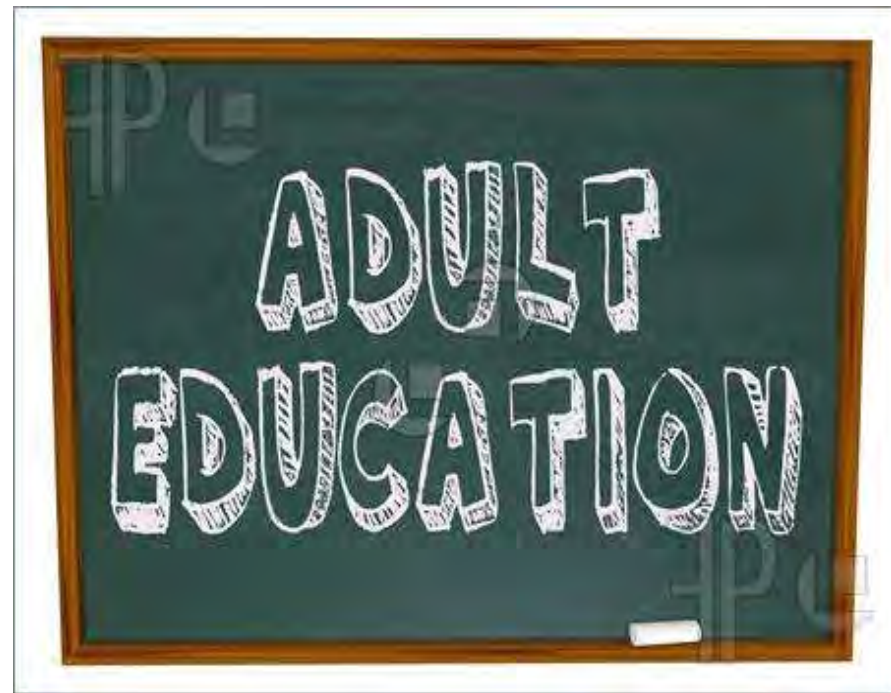


# LMS – Social Constructivism



# Principles of Adult Education

- Adults need to know why it is important
- Self Directing
- Adults use Experience
- Task Centered
- Motivated by Extrinsic and Intrinsic Reasons



# LMS – Why



- \* Base training on valid needs of the audience
- \* Why is it Important
- \* Demonstrate importance
- \* Activities should focus on real work experiences

# LMS – Self Directing



- ❖ Put the student in charge
- ❖ Create self directed work
- ❖ Incorporate search and discovery
- ❖ Present the student with many options to learn the materials

# LMS – Using Experiences

- Broad experience to attach new ideas
- Use this experience through discussion and reflection
- Design training activities on work students will perform

# LMS – Task Oriented



- Incorporate problem solving
- Perform tasks that they will use in the field
- Frame large amounts of material as reference for future use

# LMS – Motivation



- \* Extrinsic
- \* Intrinsic
- \* Focus on both, but build around intrinsic need

# Concept Test

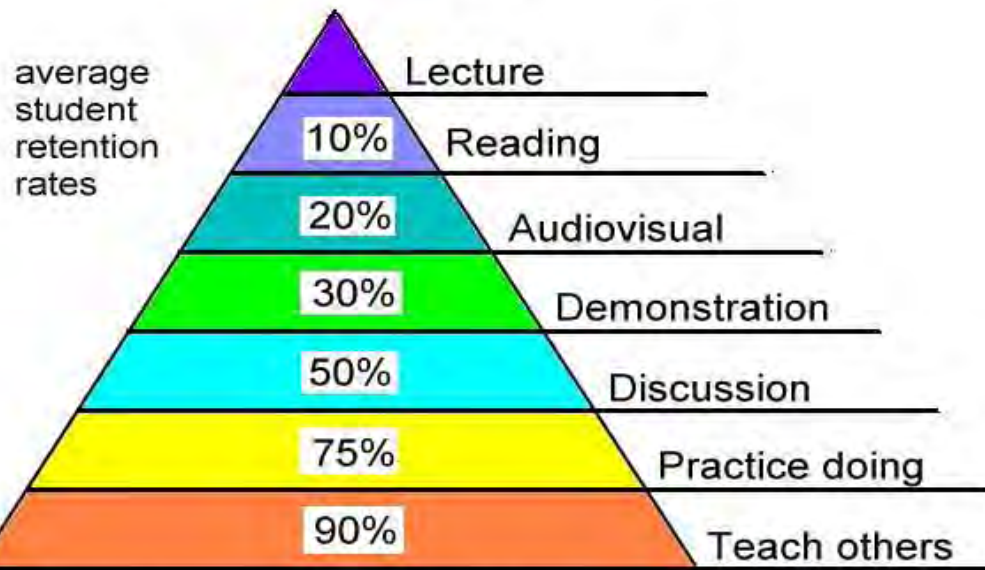
What activity would you expect the highest retention rate from?

- \* Lecture
- \* Discussion



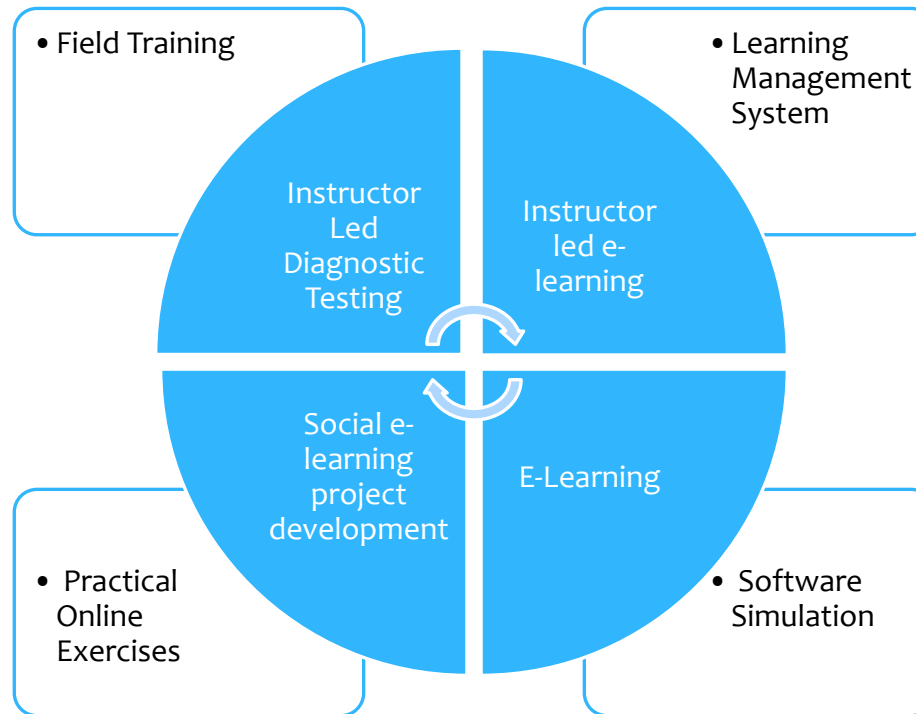
# LMS – Retention Rates

## Learning Pyramid



Source: National Training Laboratories, Bethel, Maine

# LMS – Hybrid/Blended Approach



# Where is HERS Training Headed?



# Where is HERS Training Headed?



# Where is HERS Training Headed?

- \* Extended Live Formats



# Where is HERS Training Headed?

- \* Learning Management Systems (Online)



# Where is HERS Training Headed?

- \* Blended Model (LMS with Live supplement)





# Where is HERS Training Headed?

- \* Semester Long (Technical College format)
- \* Extended Trainings with Multiple Certifications





# Where is HERS Training Headed?

\* Mentoring



# Where is HERS Training Headed?



# Where is HERS Training Headed?



# Thank You!