

TRAINING EFFECTIVENESS

HOW COME AFTER I TRAINED THEM THEY STILL MAKE MISTAKES?

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TRAINING EFFECTIVENESS

Does your safety training look like this?



Tell me and I forget


Teach me and I remember

Involve me and I learn

-Ben Franklin



OBJECTIVES FOR TODAY

- Understanding Adult Learning Theory
 - Distinguish Learning Styles
 - VARK
 - Paragon Adult Learning Theory
 - Multiple Intelligences
 - Facilitating learning based on goals
 - Human Error Basics
 - Instructional Design of Safety Training for Craft Brewers
 - Measuring Training Effectiveness
 - Results from Brewer's Association Safety Training Platform
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ADULT LEARNING THEORY

- Challenges in Training today: - Beloit Mindset List - Class of 2021
 - They never heard Harry Caray try to sing during the seventh inning at Wrigley
 - Vladimir Putin has always been calling the shots at the Kremlin.
 - The United States has always been at war.
 - They have never had to watch or listen to programs at a scheduled time.
 - If you want to reach them, you'd better send a text—emails are oft ignored.
 - A Bush and a Clinton have always been campaigning for something big.
 - John Elway and Wayne Gretzky have always been retired.
 - Bluetooth has always been keeping us wireless and synchronized.

ADULT LEARNING THEORY

- Andragogical Model – Adults seek to know **WHY** they must learn
 - Need Buy In
 - What is the motivation? - required/mandated
 - Do they know why? Is any time spent on the why?
 - Are their experiences relied on or valued?
 - Are they free to learn on their own?
 - Can they control the pace?
 - Is the more than one medium used?

LEARNING STYLES

- VARK (Keller)
 - Visual
 - Auditory
 - Reading
 - Kinesthetic

LEARNING STYLES

- Paragon Adult Learning Styles Inventory
 - 4 Dimensions
 - Introversiion/Extroversiion
 - Intuition/Sensation
 - Thinking/Feeling
 - Judging/Perceiving



LEARNING STYLES

Introverts teaching Extroverts	Extroverts teaching Introverts
<ul style="list-style-type: none"> • Use group work and cooperative learning • Use wait time with questioning • Provide time for movement • Value expression 	<ul style="list-style-type: none"> • Provide individual tasks • Call on all students regularly • Provide written venues for thinking • Value reflection
Sensates teaching Intuitives	Intuitives teaching Sensates
<ul style="list-style-type: none"> • Provide opportunities for creativity • Give students the “big picture” of their work • Use concept attainment and problem-based strategies on occasion • Teach inductively on occasion • Don't overemphasize the details 	<ul style="list-style-type: none"> • Provide hands on activities • Give clear step-by-step directions • Explain the practical application to work • Avoid long abstract or theoretical lectures • Value the quality of students work
Thinkers teaching Feelers	Feelers teaching Thinkers
<ul style="list-style-type: none"> • Remember to show your warm feelings • Avoid excessive conflict in your teaching style • Include praise in your feedback • Avoid being too critical • Express your joy or pleasure whenever possible • Value feeling in written work 	<ul style="list-style-type: none"> • Do not rely too heavily on praise • Give concrete feedback • Try to accept some degree of healthy conflict • Be consistent in your application of principles • Don't be afraid to give honest feedback/critique • Value logic in written work
Judgers teaching Perceivers	Perceivers teaching Judgers
<ul style="list-style-type: none"> • Allow for some flexibility in assignment format • Use variety • Provide clear written assignment guidelines • Allow for flexible time frames for completion • Value novelty and open-mindedness 	<ul style="list-style-type: none"> • Provide clear written assignment guidelines • Prepare students for changes in plans • Try to keep to the agreed upon schedule • Provide some routine in the day • Value accuracy and punctuality

LEARNING STYLES

- Multiple Intelligences (Gardner)

- <http://www.tecweb.org/styles/gardner.html>

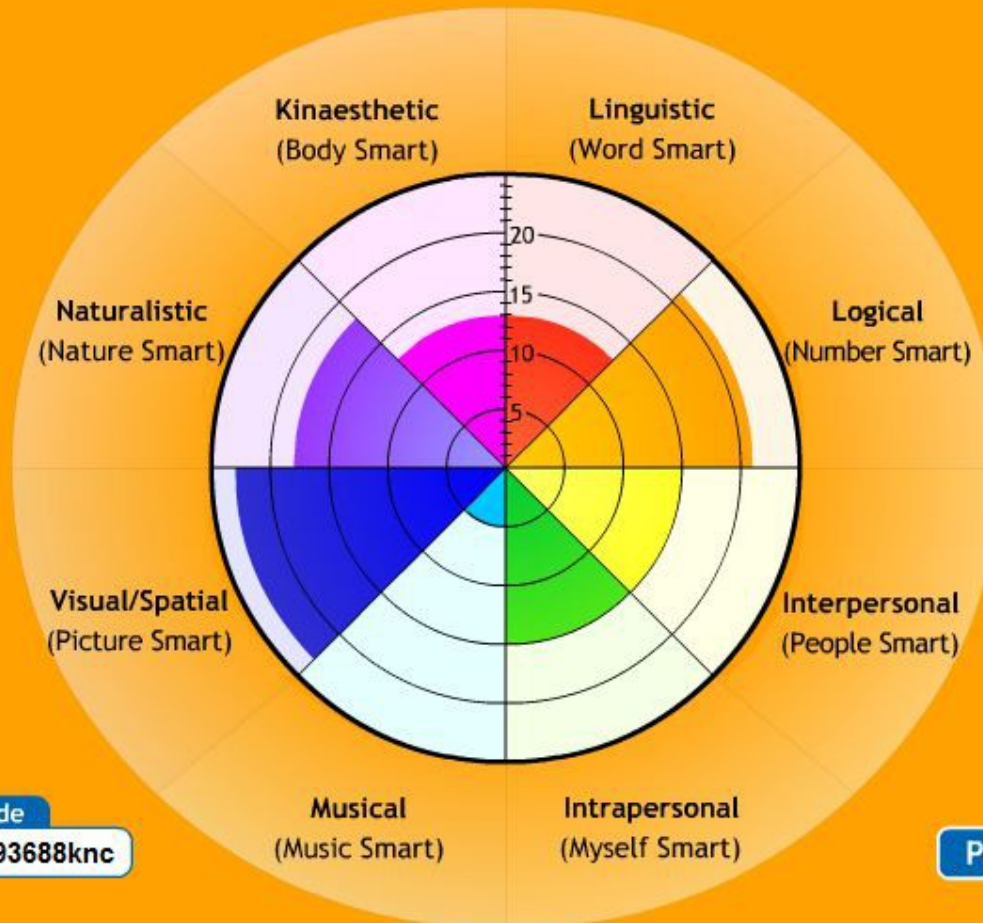
- Visual-Spatial - think in terms of physical space, as do architects and sailors. Very aware of their environments. They like to draw, do jigsaw puzzles, read maps, daydream. They can be taught through drawings, verbal and physical imagery. Tools include models, graphics, charts, photographs, drawings, 3-D modeling, video, videoconferencing, television, multimedia, texts with pictures/charts/graphs.
 - Bodily-kinesthetic - use the body effectively, like a dancer or a surgeon. Keen sense of body awareness. They like movement, making things, touching. They communicate well through body language and be taught through physical activity, hands-on learning, acting out, role playing. Tools include equipment and real objects.
 - Musical - show sensitivity to rhythm and sound. They love music, but they are also sensitive to sounds in their environments. They may study better with music in the background. They can be taught by turning lessons into lyrics, speaking rhythmically, tapping out time. Tools include musical instruments, music, radio, stereo, CD-ROM, multimedia.
 - Interpersonal - understanding, interacting with others. These students learn through interaction. They have many friends, empathy for others, street smarts. They can be taught through group activities, seminars, dialogues. Tools include the telephone, audio conferencing, time and attention from the instructor, video conferencing, writing, computer conferencing, E-mail.
 - Intrapersonal - understanding one's own interests, goals. These learners tend to shy away from others. They're in tune with their inner feelings; they have wisdom, intuition and motivation, as well as a strong will, confidence and opinions. They can be taught through independent study and introspection. Tools include books, creative materials, diaries, privacy and time. They are the most independent of the learners.
- Linguistic - using words effectively. These learners have highly developed auditory skills and often think in words. They like reading, playing word games, making up poetry or stories. They can be taught by encouraging them to say and see words, read books together. Tools include computers, games, multimedia, books, tape recorders, and lecture.
- Logical -Mathematical - reasoning, calculating. Think conceptually, abstractly and are able to see and explore patterns and relationships. They like to experiment, solve puzzles, ask cosmic questions. They can be taught through logic games, investigations, mysteries. They need to learn and form concepts before they can deal with details.

LEARNING STYLES

[What are Multiple Intelligences?](#) | [Take a Test](#) | [Results](#) | [Notes](#)

Your Results

Your answers have been saved using the secret code: n6jn0jqw93688knc.
To see this chart again, type your secret code into the **Results** page.



Code

n6jn0jqw93688knc

Print

FACILITATING LEARNING

- Focus on the ways we learn not on individual leaning styles
 - Learning styles help us to understand our students (Davis and Arend)
- 7 ways we learn based on outcomes/goals

Outcome	Way of Learning
Building Skills	Behavioral Learning
Acquiring Knowledge	Cognitive Learning
Developing critical and creative thinking	Learning through inquiry
Cultivating Problem Solving and Decision Making	Learning with mental models
Exploring Attitudes	Learning through groups/teams
Practicing Professional Judgment	Learning through virtual reality
Reflecting on Experience	Experiential Learning

FACILITATING LEARNING

- Of those 7 outcomes. What are our outcomes in safety and health training in breweries?


- What if you were designing a training session for entering a fermenter (confined space entry)?



FACILITATING LEARNING

- Building Skills
 - Common methods

 - Acquiring Knowledge
 - Common methods

 - Cultivating Decision Making
 - Common Methods
- 

THE POWER OF STORIES

- Life is a Story
 - Full of drama
 - Use of stories to make a point
- Stories help us figure things out
 - Case Studies
- Examples



HUMAN ERROR BASICS: WHY PEOPLE MAKE MISTAKES

Knowledge

Ignorance

Pseudo-knowledge

Imprudence

Apathy

Cognitive Errors

Loss of Activation

Description

Capture





HUMAN ERROR BASICS: WHY PEOPLE MAKE MISTAKES

Interpersonal

Peer Pressure

Power of Authority

Stress

Errors in Judgments

Heuristics – Mental Shortcuts



BREWERS ASSOCIATION INSTRUCTIONAL DESIGN

Instruction designed with the following parameters:

Online Training Environment - Self paced Asynchronous

Training by job task rather than safety subject

Video segments no longer than 2-3 minutes before interaction by participant

First person viewpoint (as participant would be performing task)



MEASURING TRAINING EFFECTIVENESS

- Increasing Training Transfer
- Four Phases/measurements of training effectiveness (Kirkpatrick)
 - Phase 1 – Reaction – Satisfaction Surveys
https://www.surveymonkey.com/s/SZ_Training_Module_Evaluation
 - Phase 2 – Learning – Assessments – Tests (Pre and Post)

_____ Time Lag _____

- Phase 3 - Behavior – Audits/Observations, Questionnaire's
- Phase 4 – Results – Change in Incident Frequency

RESULTS FROM BREWER'S ASSOCIATION SAFETY TRAINING

Module	Completed
Overall Total	14,819
Bottling	1091
Canning	395
Ferm Cellar	1214
Ferm Clean	1320
Carbonation	1144
Filtering	280
Grain Handle	2214
Keg Clean	1198
Keg Fill	1121
Mashing	1856
Boiling	1584
Whirlpool	1402

RESULTS FROM BREWER'S ASSOCIATION SAFETY TRAINING



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RESULTS FROM BREWER'S ASSOCIATION SAFETY TRAINING



SUMMARY

Adults learn differently than children

Adults Learn through many different styles

Learning Outcomes may be a way to design training – Facilitated Learning

Causes of Human Error

Design criteria for online asynchronous training

How training effectiveness can be measured

Case Study Results from Brewer's Association



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QUESTIONS??

REFERENCES

Davis, J. R., & Arend, B. D. (2013). Facilitating Seven Ways of Learning: A Resource for More Purposeful, Effective, and Enjoyable College Teaching

