

Improving Safety Training with Adult Learning Principles

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1

What is Training

Webster's defines *To Train* as:

- To form by instruction, discipline or drill
- To teach so as to make fit, qualified or proficient
- To make prepared for a test of skill

2

Why do we train?

To impart knowledge

To change behavior

To get a signature on paper

3

Why do we train?

- **To be effective in training, we have to understand our goal!!!!**

4

Why do we train?

“If you do, what you have always done, you will get what you always got.”

5

Why do we train?

“Insanity is the belief that we will perform repeat the same action and get a different outcome.”

6

Where to Start?

What do you/did you like/dislike when you sat in the trainee seat?

7

Where to Start?

- Most Safety professionals did not start in a safety career until they tried something else. What did you like about training before you got into safety.
- Must realize, Safety professionals have a lot of varied duties. Training is only one and not much time is spent in developing skills as a trainer
- We tend to fall back on our prime examples of how to train, how we were taught as children/young adults

8

Adult Learning Principles

Behaviorism:

- Helps us understand to how to best affect behavior
- Biggest proponent, BF Skinner
- Felt ALL behavior could be broken down to Stimulus-Response reaction

9

Adult Learning Principles

Behaviorism (cont'd):

- Skinner was a proponent of Operant Conditioning. Differed from Classical Conditioning in that any stimulus could be associated (not intuitive). Right stimulus can get any responses
- After the S/R, reinforcement kept the S/R response going
- Stop reinforcement, S/R reaction would fade (called extinction)

10

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Behaviorism (cont'd):

- Felt that positive reinforcement was more useful than negative
- Timing was important; more immediate after behavior, stronger the connection.
- Superstitious behavior could be problem

11

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Maslow's Hierarchy of Needs:

- Helps us understand how employee's priorities can shift in the long term and the short term
- Seen as a medium between Freud and Skinner
- Stated that people are motivated by unsatisfied needs. These needs are in a hierarchy. A higher need could not be satisfied until the needs below it were satisfied.

12

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Maslow's needs (in ascending order) were:

Physiological needs

Safety needs

Belonging needs

Esteem needs

Self-actualization



13

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Work of Knowles and contemporaries:

Malcolm Knowles is considered the modern father of Adult Learning principles

Knowles identified some principles (specifically that differ from children) when dealing with adult learners:

14

Adult Learning Principles

- Adults are autonomous and self-directed
- Adults have accumulated a foundation of life-experiences and knowledge
- Adults are goal-oriented
- Adults are relevancy-oriented
- Adults are practical, focusing on the aspects of lesson most useful to them in their work.

15

Adult Learning Principles

Some of Knowles findings included:

- Adults have multiple responsibilities which can conflict with the learning process, as opposed to children who have less demands on them.
- To motivate adults you have to increase their reasons for learning and decrease barriers to learning
- Learning is a life-long process.
- Since people learn at different speeds they may feel anxious or nervous when faced with a learning situation involving other people.

16

Adult Learning Principles

Some of Knowles contemporaries expanded his work to include:

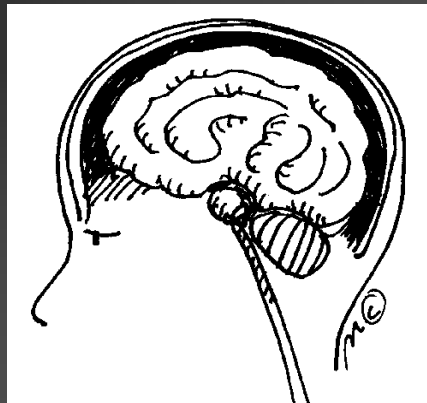
- Adult learners must be given time to reflect or think about each point of learning
- Adults do not effectively learn by simply being told.
- Information more easily enters the long term memory when it is linked to old memories
- Adults have different self-images than children and feel they are (or should be self-directed).

17

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Brain Based Learning

Brain based learning is based on latest research on the brain and learning, not a specific well defined theoretical framework. (looks at how and what, not the why)



18

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Brain Based Learning (cont'd);

- **Researchers believe that current linear approach may inhibit learning, integrated method is more conducive to learning**
- **The brain is structured to attend to novelty in environment. Novel situations may represent danger.**
- **There is a balancing effect however, because ritual can be stress reducing and therefore, more conducive to learning.**

19

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Brain Based Learning (cont'd);

- **This is especially relevant because any behavior that makes students feel threatened is counter to learning. When we are threatened we shift into survival mode and blood, oxygen and nutrients are shifted to major muscles (flight or fight). Studies have shown that this applies to non-physical threats. Sarcasm, criticism and put downs have been found to raise heart-rates.**

20

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Brain Based Learning (cont'd);

- **Emotion is critical to learning. Trying to make learning strictly cognitive is counterproductive.**
- **Learning is optimized if we can hold the students' attention long enough for them to make meaning for themselves.**

21

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Brain Based Learning (cont'd):

- **Memories are not stored as one neat "package". Instead various pieces are stored in different places. To "remember" we draw all of these bites together. Remembering involves reconstructing reality by putting the "pieces" back together.**
- **Remembering is actually made up of two processes. Placing information into memory and recall.**

22

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Brain Based Learning (cont'd):

- **The brain is a multiprocessor. It receives input from numerous sources, and sorts, organizes and arranges. It does not perform this in a set pattern way. With this information, the human brain learns best in a multi sensory, multi method way**
- **Adults are less likely to place into long term memory meaningless learning, learning that involves reassessment of old knowledge, and pure memorization**

23

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Gardner's theory of Multiple Intelligences:

Gardner's theory states that while we speak of intelligence as a single, there are different types of intelligence.

The implication is that not only will individuals vary in each of the types, but our methods need to vary.

24

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The seven intelligences types of Gardner's are:

- linguistic
- musical
- logical-mathematical
- spatial
- body-kinesthetic
- intrapersonal
- interpersonal

25

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Memory Issues:

Misinformation effect and Memory lack

- a person's memory can be affected by the re-telling of the story by another.
- Memory is somewhat malleable and will change over time

26

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Memory Issues- Different types of memory:

- Semantic- memory of speech and text. Least reliable.
- Episodic memory- memory by event or location, memory embedded with a context. Think of something, move towards goal and can't remember. Go back to location where thought occurred and remember it.
- Procedural memory- memory from hands-on experience. Riding a bike.
- Reflexive memory- Memory from considerable repetitions or strong emotional content. Memorizing multiplication tables.

27

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Literature review:

NIOSH reviewed studies dealing with health and safety training and summarized them in **Assessing Occupational Safety and Health Training**, A Literature Review (circa June 1998)

Some of the summarized findings from the Literature review include:

28

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Literature review:

- In comparing lecture versus slide/video presentations versus “hands on” or interactive video technique, the more active “hands on”/interactive video techniques, the higher the score on knowledge and behavior indication test.
- Training approaches involving using role play, case study depicting workplace safety and health problems, and practice sessions in working through solutions/obstacles, showed signs of being successful

29

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Literature review:

- Looking at the other side of the coin per say, studies have shown that well-trained safe work practice may fail to yield benefits in the workplace because of physical restraints or other conditions that interfere with their expression
- Indifference on management’s part can extinguish gains

30

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Literature review:

There is support of behavior factors (in the forms of feedback) having an effect on the effectiveness of health and safety training programs. Setting performance goals around compliance with targeted behaviors and/or providing feedback to mark progress in the training and post-training environment are effective methods for attaining successful training

- Another utilization for feedback is that success in health and safety training, and its transfer to the workplace, can be driven by making health and safety practices an element in one's performance evaluation

31

Adult Learning Principles

ANSI EHS Training standard

- ANSI/ASSE Z490.1-2001
- More of a systemic framework to developing and documenting training

32

Adapting Training Strategies

What is the “picture” of Safety training in many organizations:

- Employees forced (by regulation or company)
- Often logistics given main concern
- Not interesting subject
- Same material heard over and over again
- Not always seen as relevant. Seen as waste of time.
- Employees may feel they are being graded

33

Adapting Training Strategies

What can we do to improve the situation?

34

Adapting Training Strategies

Trainees must see relevance

35

Adapting Training Strategies

We must appeal to multiple memories, intelligences and other mental states

36

Adapting Training Strategies

We must understand when to
positive reinforce, negative
reinforce and not to reinforce

37

Adapting Training Strategies

We must have realistic
expectations

38

Adapting Training Strategies

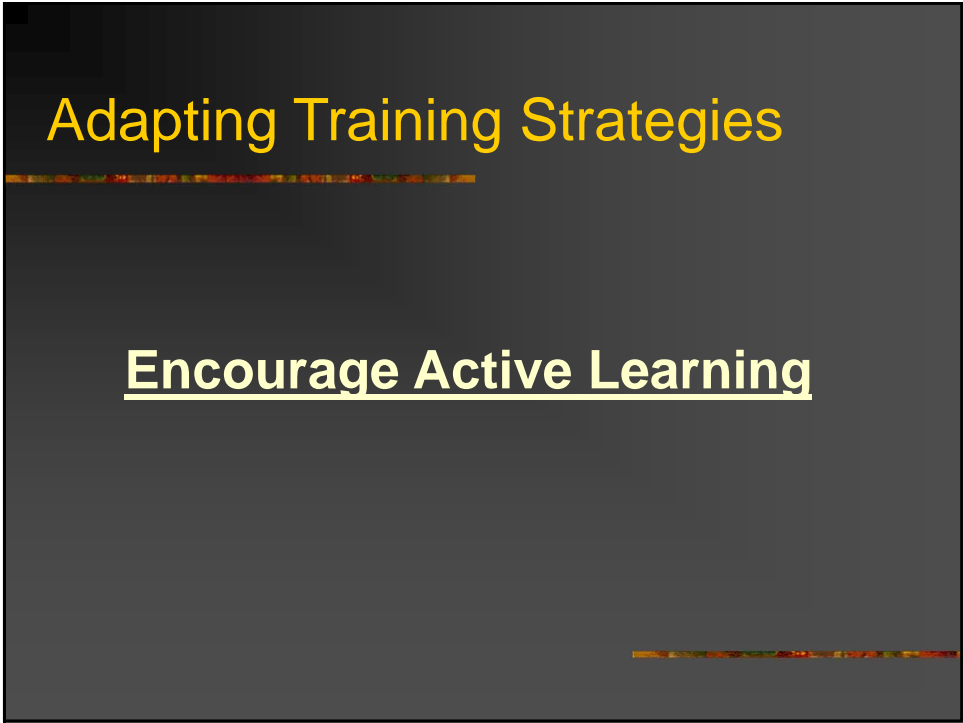
Understand and recognize the indications of training (test) stress

39

Adapting Training Strategies

Remember your physical comfort issues

40

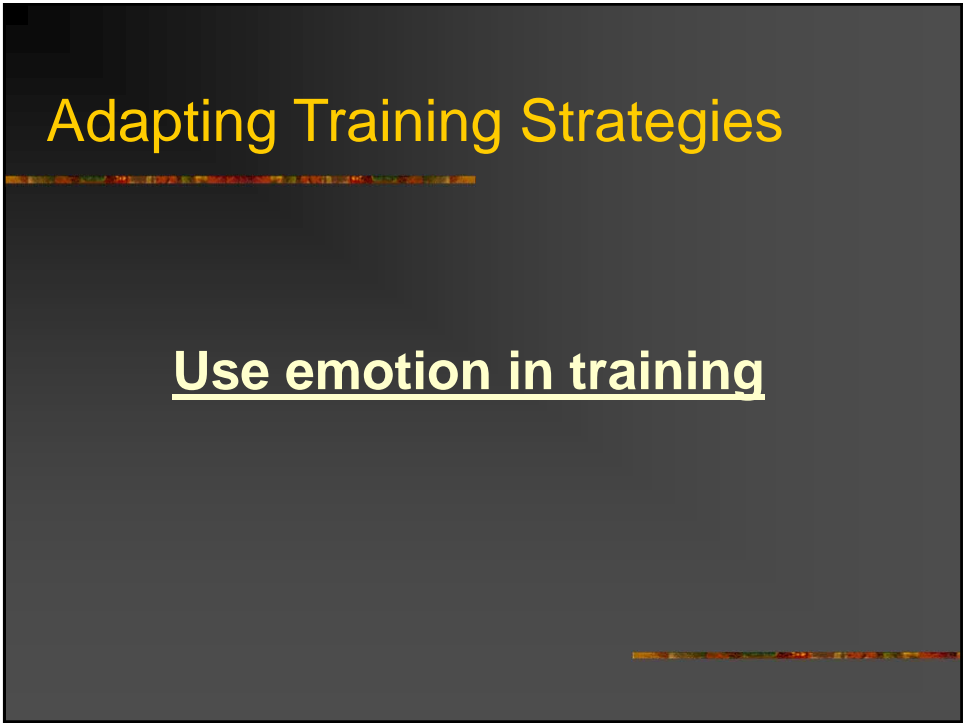


Adapting Training Strategies

Encourage Active Learning

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41



Adapting Training Strategies

Use emotion in training

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42

Adapting Training Strategies

Try to insert novelty

43

Adapting Training Strategies

Increase the amount of recall
cues provided by association

44

Adapting Training Strategies

Do What Works for You

45

Conclusion

Questions?

46