

From Training to Performance: The Central Role of Evaluation

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What is my greatest performance block?



I would perform better if:

1. I knew what the exact expectations of the job were and had more specific job feedback and better access to information.
2. I had better tools and resources to work with.
3. I had better financial and non-financial incentives/consequences for doing my work.
4. I received more and better training to do my job.
5. My personal characteristics and capabilities better matched the job.
6. I cared more and really wanted to do my job better.



Factors Affecting Performance

Environment
75%

Individual
25%

Information	Resources	Incentives
35%	26%	14%
Knowledge/Skills	Capacity	Motivation
11%	8%	6%



Information

Resources

Incentives

**Knowledge/
Skills**

Capacity

Motivation



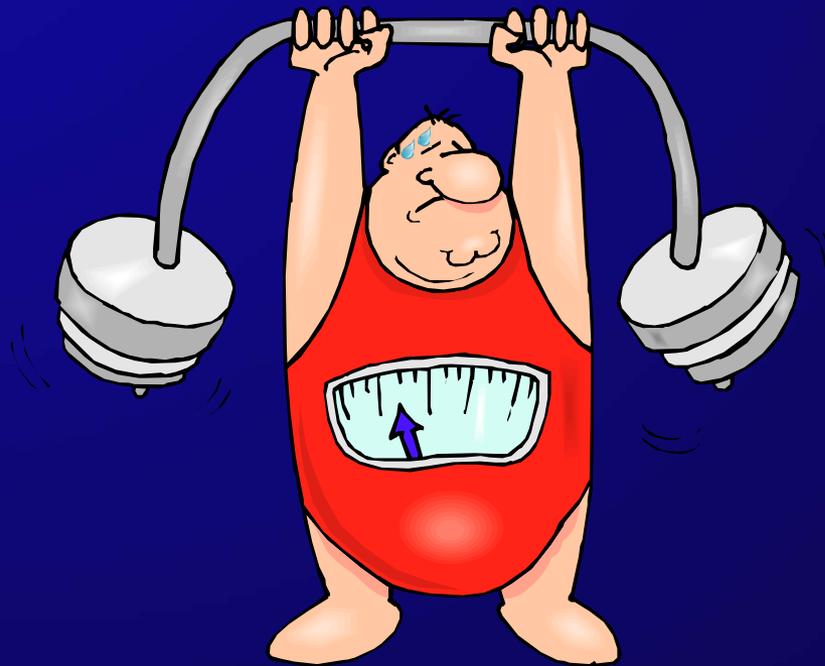
Three Questions

1. How do we ensure appropriate, sufficient skill and knowledge?
2. How do we ensure the skills and knowledge are applied on the job?
3. How do we ensure attainment of desired performance?



What is Performance?

Valued accomplishment derived from costly behavior.



Question 1

How do we ensure appropriate, sufficient skill and knowledge?

- Selection
- Job analysis
- Training
- S / K verification



Training

Training is the commonly used term in the workplace to encompass:

Training: A set of activities designed to change behaviors in very specific and predetermined ways. The aim is reproduction of behaviors to the point of automaticity.

Instruction: A set of organized activities aimed at creating changes that allow learners to generalize what they have learned to new instances.

Education: Activities either deliberately designed or naturally experienced that foster the development of general mental models and values.

Basis for consistent behavior and decision-making patterns.



In all instances we must verify S / K attainment.

“If you don’t inspect it, don’t expect it”

“ You get what you measure”



Question 2

How do we ensure the skills and knowledge are applied on the job?

Transfer Verification:

- Self report
- Supervisor report
- Customer reports
- Observation
- Simulation
 - Low fidelity
 - High fidelity



Question 3

How do we ensure attainment of desired performance?

- Establish credible, consistent, bottom-line data gathering methods and standards.
- Analyze factors that affect the gap between actual and desired results.
- Apply systematic and systemic evaluation methods to verify accomplishments and identify needed improvements.



IAFF's Efforts: Past & Present



Evaluate training impact at Kirkpatrick's
Levels 1, 2, 3.



HazMat Evaluation

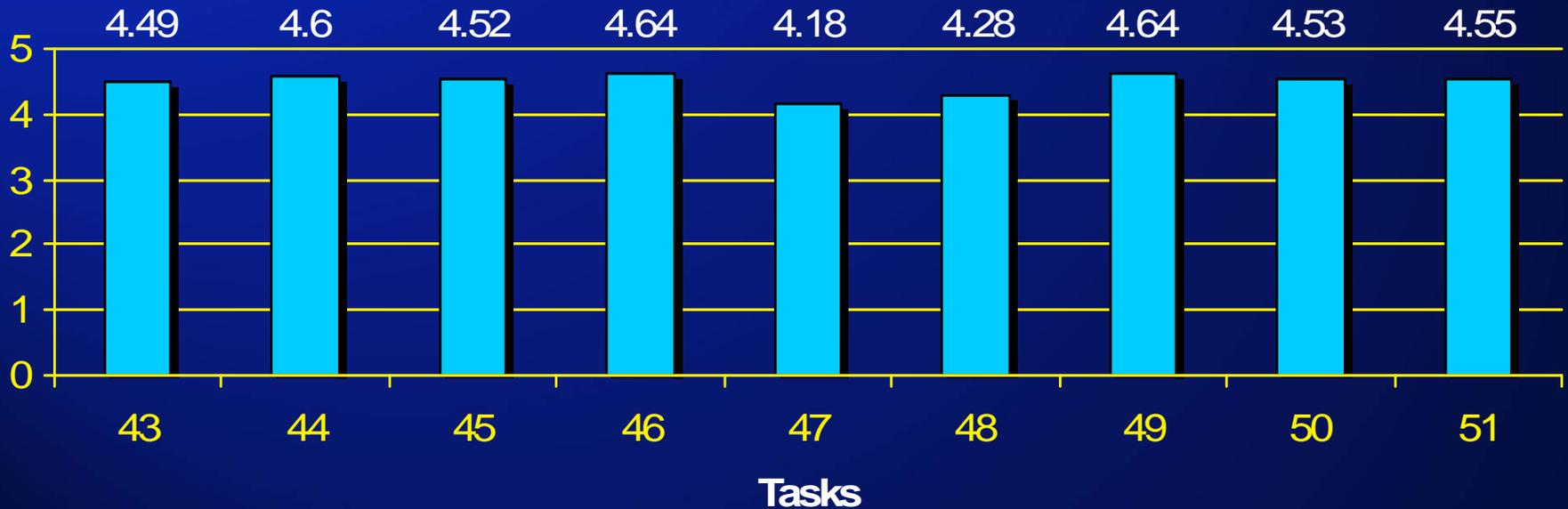
- Level 1 – Trainee reactions
- Level 2 – Immediate learning
- Level 3 – Transfer to the job
- Level 4 – Improved results



The HazMat Evaluation Shows:

Trainee reactions are very positive

General Reactions to Course



The HazMat Evaluation Shows:

Trainee reactions are very positive

Quality of Presentation



The HazMat Evaluation Shows:

Trainee reactions are very positive

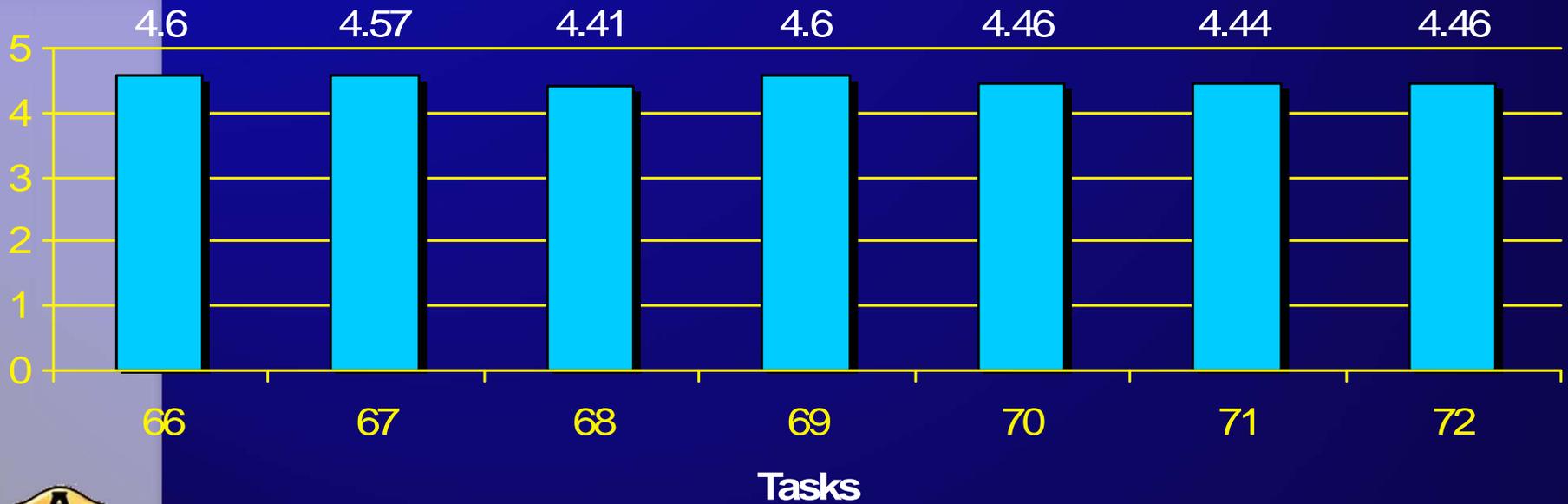
Information Covered



The HazMat Evaluation Shows:

Trainee reactions are very positive

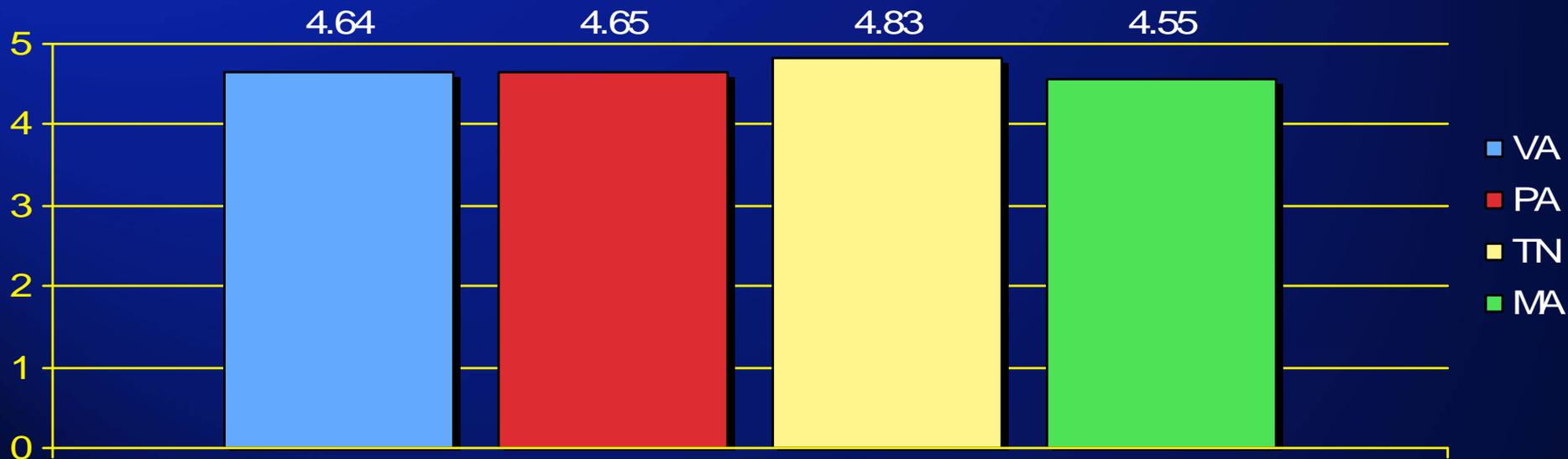
Usefulness in Doing Your Job



Trainee reactions do not vary much by:

GEOGRAPHY

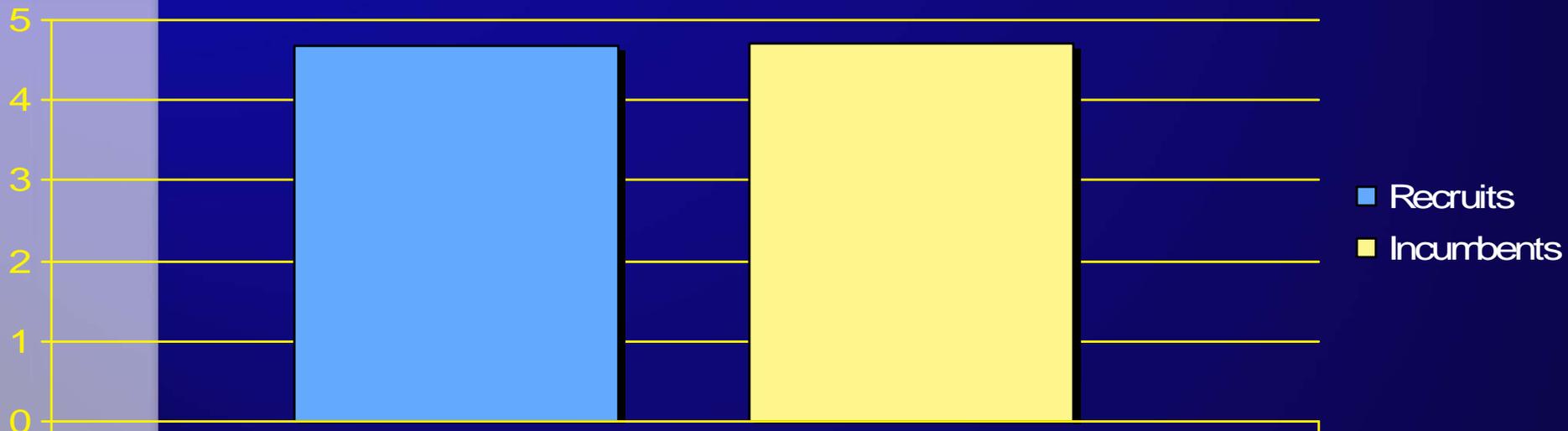
Overall Course Evaluation



Trainee reactions do not vary much by:

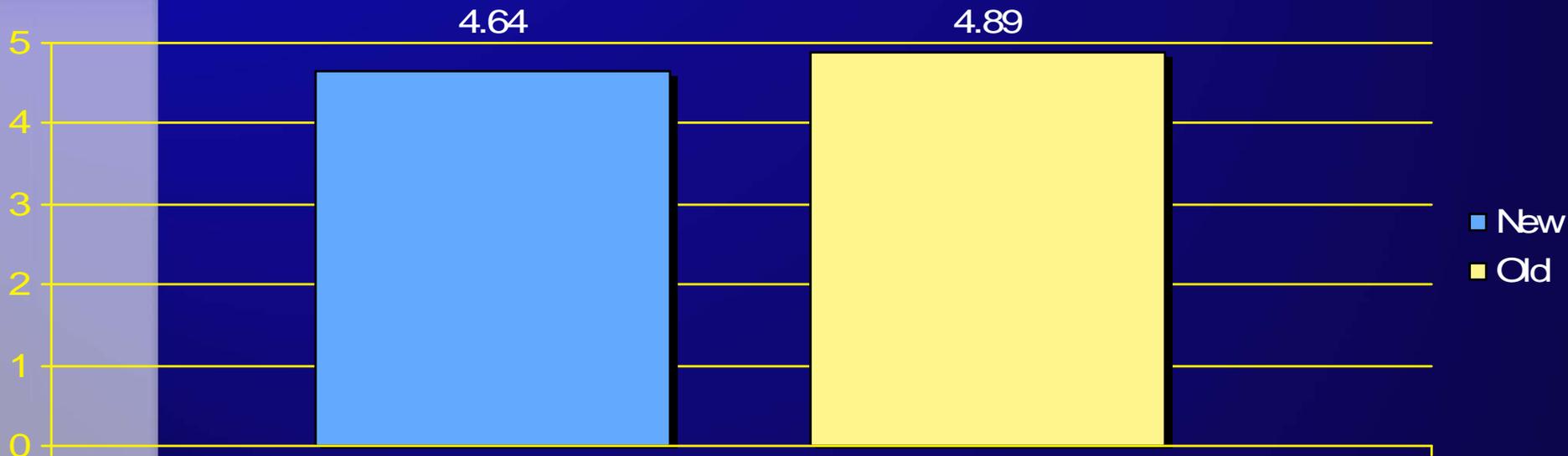
POPULATION

Overall Course Evaluation



Trainee reactions do not vary much by:
YEAR (2006 vs. 2008)

Overall Course Evaluation



Trainees learn from HazMat training

FRO Test Results (N = 442)

Items	Pre-Course	Post-Course
Mean %	52.62	88.83
sd	9.78	7.99
Minimum	26	66
Maximum	98	100
Range	72	34



Trainees learn from HazMat training

Knowledge Retention

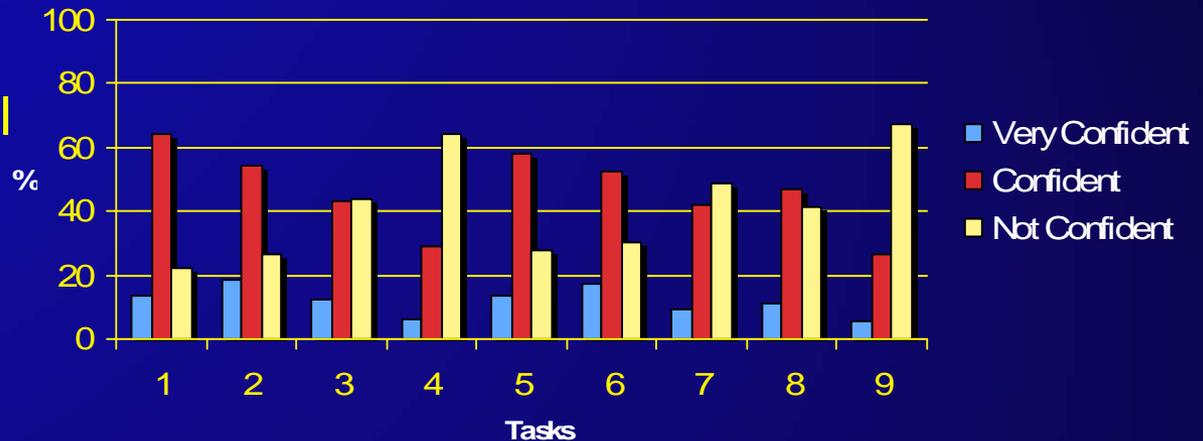
Items	Post-Course	Follow Up	Cohen's <i>d</i>	Effect Size
N	442	210		
Mean %	88.83	75.66	1.4757	Very large
sd	7.99	10.63		
Minimum	66	48		
Maximum	100	94		
Range	34	46		



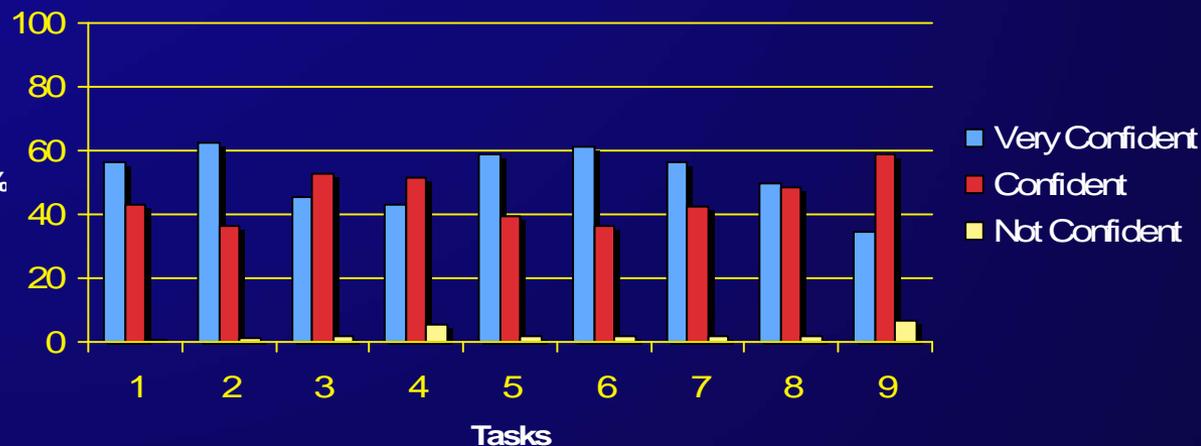
Training Effectiveness: Confidence

1. Recognize hazmat clues in alarms
2. ID hazmat in cargo
3. Determine toxic material health risk exposure
4. Explain medical surveillance need
5. Differentiate exposure from contamination
6. Describe limits of chemical hazard gear
7. Apply info in hazmat guides
8. Control chemical hazard releases
9. Gauge chemical exposure risks

Pre-Course



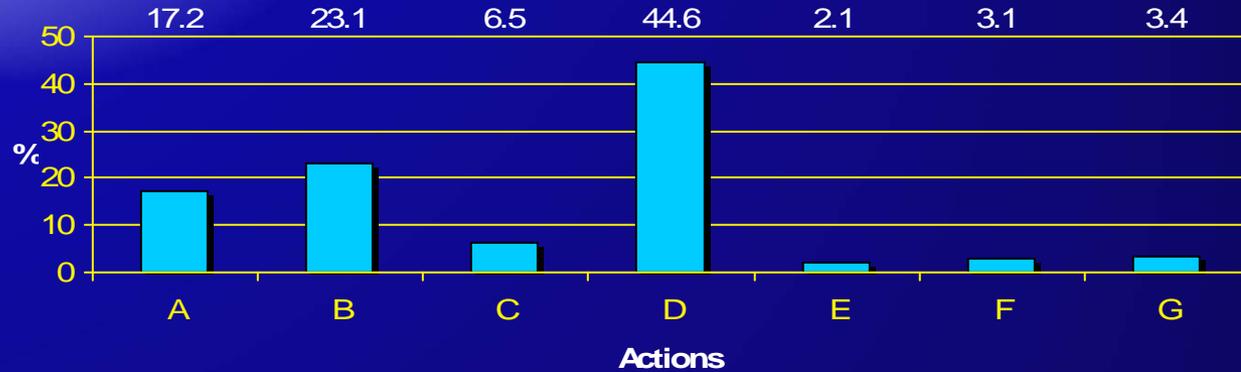
Post-Course



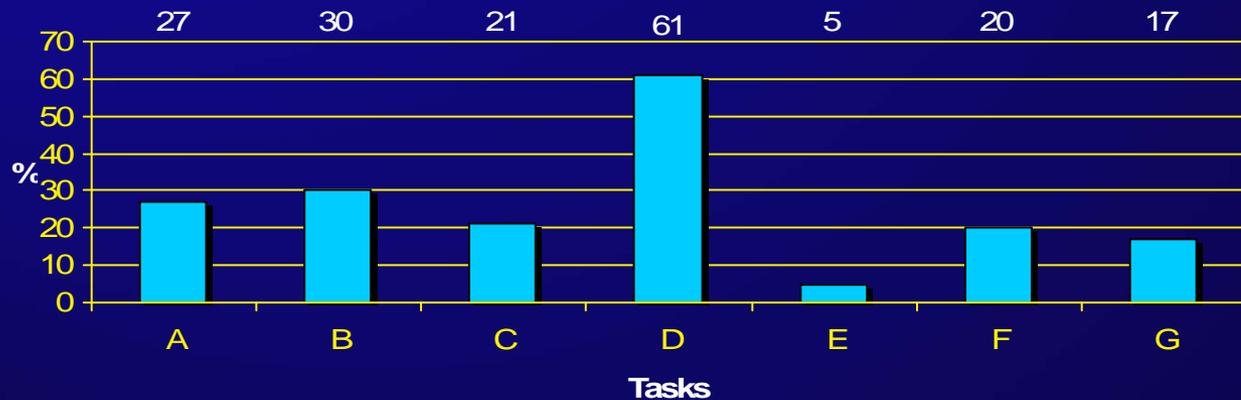
Confidence grows with HazMat training



Trainees say they will apply:



and do apply:



HazMat Evaluation

- Level 1 – Trainee reactions
- Level 2 – Immediate learning
- Level 3 – Transfer to the job
- Level 4 – Improved results



**Correlations between
levels have been shown to
be very low or “0.”**



IAFF Future

- Ensure high quality, consistent trainer selection, preparation, support and structured observation and feedback.
 - New generic and specific instructor training
 - ISD applied to all training and material development
 - Structured instructor guides
 - Implementation of an **Instructor Structured Feedback** process and observation tools applied by trained Mentor Observers.



- Improved testing procedures including true Level 3 evaluation – realistic simulations.
- Refined data collection and analysis procedures.
- Improved methods for identifying fire department learning and performance support needs.
- Longer term relationships between IAFF instructors and field personnel.



To Conclude

- HazMat training, **as training**, works well
- In a study we conducted at Level 3, the key variable affecting on-job application is **organizational support**
- The **supervisor** is **key**, but sees the world differently from subordinates



To Conclude

- Focus on application and scenario-based training
- Focus on supervisor and on-job support
- Conduct Level 4 evaluations



• A Crying Need for Level 4 Evaluation

- Currently, bottom line results data are inconsistently gathered.
- How do we know if what we do affects the bottom line?
- How can we improve if we don't know?



- Any questions?
- Any comments?
- Any sarcastic remarks?

