EVALUATING TRAINING EFFECTIVENESS

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SECTION OBJECTIVE

PARTICIPANTS WILL BE ABLE TO DESCRIBE FOUR WAYS TO ASSESS SAFETY TRAINING EFFECTIVENESS

Why Measure Training Effectiveness?

- Determine if changes are needed and how future programs may be improved
- Assure continued program quality
- Determine if goals are being achieved
- Determine cost-effectiveness
- Determine how frequently training is needed
Methods for Evaluation

- **Supervisor Observations:**
  - Subjective
  - Specific Targeted Questions to Supervision
    - Has compliance with safety glasses use in your area
      ( ) Increased; ( ) Decreased; ( ) Remained the Same
      since the PPE training session?

  Supervision is key to behavior change implementation and support. This can further engage them in the process.

**CHANGES in TRADITIONAL METRICS**

- **Measuring reductions in accidents:**
  - The company had 22 injuries last year
  - This year the company had 18 injuries
  - Therefore the Safety Training was successful!
  - WHAT’S WRONG WITH THIS?
CHANGES in TRADITIONAL METRICS
• Attribution of Outcome to Training Activity may not be Valid

I was wearing a pink shirt
I was in a car accident
Pink shirts cause car accidents

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CHANGES in TRADITIONAL METRICS
Reduction Comparisons Should be:
– Rate-Based
  • The company may have worked less hours
– Risk-Based
  • The company may have performed work which had lower risk
– Focused on the Training Content
  • Measure Eye Injury Rate vs. General Incident Rate if training was Eye-Injury

CHANGES in TRADITIONAL METRICS
• Based on a large enough population and change to be statistically relevant

50 Employees
3 Eye Injuries in Year 1: Rate: 6.0
1 Eye Injuries in Year 2: Rate: 2.0

60% Reduction in Rate, but with a small employment base, this is not statistically significant.
CHANGES in TRADITIONAL METRICS

- Based on a large enough population and change to be statistically significant
- 5000 Employees
- 25 Eye Injuries in Year 1: Rate: 0.50
- 10 Eye Injuries in Year 2: Rate: 0.20
- 60% Reduction in Rate, with a large employment base, IS statistically significant. (> 3 STDs)

Methods for Evaluation

- Student Perspective / Evaluation
  - Likert Scale (e.g. 1 – 5)
  - Overall
  - Content
    - Understandable
    - Adequate Coverage
    - Applicable to their Work
Methods for Evaluation

• Student Perspective / Evaluation
  – Instruction
    • Clearly Conveyed Message
    • Organized Presentation
    • Knowledgeable
    • Engaging (Enthusiasm)

• Facility
  • Comfortable (seats, temp, environment)
  • Amenable to Learning (quiet, view)

• Materials
  • Helpful, Supportive
  • Quality of the Materials (Content, usability, readability)

• Free Field Comments:
  • Best Aspect
  • Least Helpful Aspect
  • Suggestions for Improvement
  • Comments
MEASUREMENT BY OBJECTIVES

• EFFECTIVE LEARNER-BASED OBJECTIVES SHOULD BE MEASUREABLE.

Measurement by Objectives

PARTICIPATION – (Yes / No)

COGNITIVE - Knowledge

BEHAVIORAL (skills OR simply habit)

Measurement by Objectives

PARTICIPATION – (Yes / No)

89% of the associates attended the Hazard Communication Training Session
MEASUREMENT BY OBJECTIVES

• TRAINING OBJECTIVE:

  – PARTICIPANTS WILL BE ABLE TO LIST THE FIVE SIGNIFICANT HAZARDS ASSOCIATED WITH SCISSOR LIFT OPERATIONS

    (Cognitive)

MEASUREMENT BY OBJECTIVES

• COGNITIVE GOALS → TESTING

  – POST-TEST ONLY
  – PRE-TEST & POST-TEST
  – EVALUATE AVERAGE SCORES CHANGES

MEASUREMENT BY OBJECTIVES

• EXAMPLES:

  – 98% OF THE PARTICIPANTS COULD LIST THE FIVE MAJOR HAZARDS ASSOCIATED WITH OPERATION OF A SCISSORS LIFT.

  – POST-TEST SCORES ON OBJECTIVE 1 INCREASED BY 40%.
  – PRE-TEST SCORES WERE 62%. POST-TEST SCORES WERE 86.8%
MEASUREMENT BY OBJECTIVES

• TRAINING OBJECTIVE:
  – PARTICIPANTS WILL BE ABLE TO OPERATE THE SCISSORS LIFT IN ACCORDANCE WITH THE LISTED OPERATING PRE-CAUTIONS
  (BEHAVIORAL)

MEASUREMENT BY OBJECTIVES

• TRAINING OBJECTIVE:
  – 100% OF PARTICIPANTS DEMONSTRATED SAFE OPERATION OF THE SCISSORS LIFT FOLLOWING TRAINING.
  – IN OPERATIONS, VS. IN CONTROLLED SETTING OBSERVATIONS?
  (BEHAVIORAL)

MEASUREMENT BY OBJECTIVES

• TEMPORAL ASPECTS
Learning Check:
- What are 4 ways to assess training effectiveness?

METHODS TO EVALUATE
1. Supervisory Responses
2. Accident Rates
3. Feedback from Participants
4. Evaluation of Objectives

LOOKING INTO THE FUTURE
- Electric Based Education Considerations...
  - Pro’s
    - Flexible
    - Verification of Knowledge via Testing
    - Allows Pacing for the Participant
    - Self-Initiated Learning
    - Consistency of Content
    - Recordkeeping Ease
LOOKING INTO THE FUTURE

- Electronic Based Education Considerations...
  - Con's
    - Reduces or Eliminates Group Interactions
    - Technology Barriers
    - Difficult for Skill-Based Training
      - Simulators, Combination Programs
    - Questions / Instructor Interaction