

Training Effectiveness Evaluation

The What, When, Why, Where & How

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What should be our safety training objective?

- To provide **QUALITY AND EFFECTIVE** training and education for workers and employers on the recognition, avoidance, and prevention of safety and health hazards...

Training Effectiveness Evaluation: What is it?

- How do we know if workers learned anything?
- How do we know if workers apply training?
- How do we know what works and what does not?
- How do we know what needs to be improved?
- Why didn't training stick?

Training Effectiveness Evaluation

a systematic mechanism to evaluate the effectiveness of training programs

Training Effectiveness Evaluation: Why do it?

- Many safety training programs fail to deliver expected benefits.
- Expected benefits are often not clearly defined
- Having a well-structured measuring system can determine where the problem lies.
- Ability to demonstrate a real and significant benefit to the organization

A systematic review of the effectiveness of occupational health and safety training

by Lynda S Robson, PhD,¹ Carol M Stephenson, PhD,² Paul A Schulte, PhD,² Benjamin C Amick III, PhD,^{1,3} Emma L Irvin, BA,¹ Donald E Eggerth, PhD,² Stella Chan, MSc,⁴ Amber R Bielecky, MSc,¹ Anna M Wang, BScN,¹ Terri L Heidotting, EdD,⁵ Robert H Peters, MSc,⁶ Judith A Clarke, MA,¹ Kimberley Cullen, MSc,¹ Cathy J Rotunda, EdD,⁷ Paula L Grubb, PhD⁸

Results Twenty-two studies met the relevance criteria of the review. They involved a variety of study populations, occupational hazards, and types of training. Strong evidence was found for the effectiveness of training on worker OHS behaviors, but insufficient evidence was found of its effectiveness on health (ie, symptoms, injuries, illnesses).

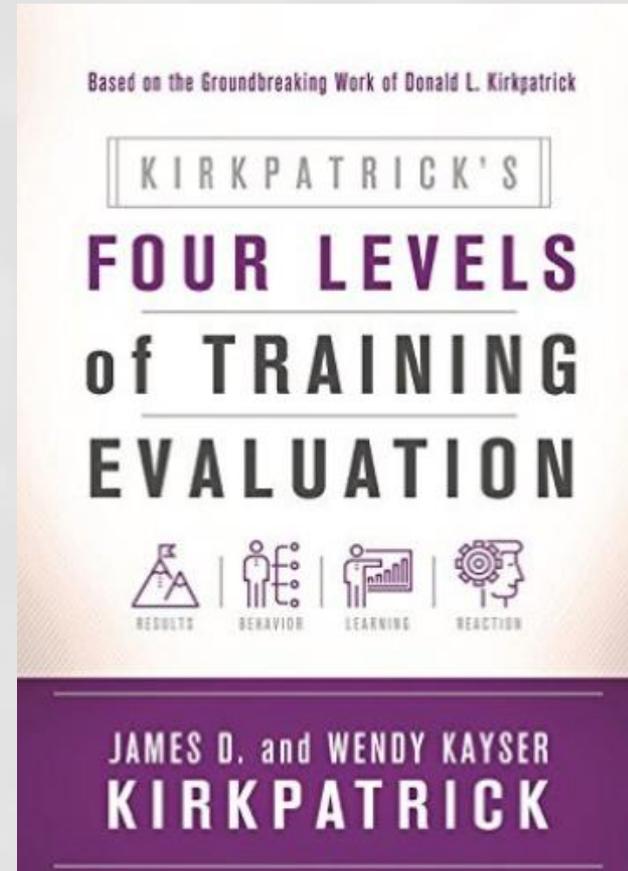
Conclusions The review team recommends that workplaces continue to deliver OHS training to employees because training positively affects worker practices. However, large impacts of training on health cannot be expected based on research evidence.

Training Effectiveness Evaluation: Why do it?

- Determination of effectiveness
- Address a specific deficiency
- Quality improvement mechanism
- Data pooling
- Moving beyond the “checkbox”
- Demonstrate owner commitment
- Component of safety management program
- Obvious reason: OSHA says we have to

Training Effectiveness Evaluation: How to do it?

- Recommended text:
 - Kirkpatrick's Four Levels of Training Evaluation



\$25 on Amazon

Training Effectiveness Evaluation: How to do it?

- **Level 1-Reaction**
- **Level 2-Retention**
- **Level 3-Behavior Change**
- **Level 4-Results (Injury reduction)**
- **Level 5-Cost Benefit**

Level 1-Reaction

- Learner immediate reaction to the training
 - Speaker
 - Environment
 - Materials
 - Degree of understanding of training content

Questions	Very good	Good	Bad
(1) Was the iPad device easy to use?	90.5%	7.5%	2.0%
(2) Did you like watching the training videos on the iPad device?	95.0%	4.2%	0.8%
(3) Were the test questions easy to understand?	84.1%	15.4%	0.5%
(4) How did you like the atmosphere of the training?	94.6%	5.0%	0.4%
(5) Did you learn new ideas and techniques (something new)?	89.1%	9.2%	1.7%

- In your view, what were the three most important strengths of the program?
- In your view, what were the three most important weakness of the program?
- Please evaluate the technical level of this training
 - A. It was too technical for such a short time
 - B. It should have been more technical
 - C. It was at the right technical level
- The course material has been
 - A. Totally new to me
 - B. Mostly new to me
 - C. Somewhat new to me
 - D. I knew most of it before
- The instructor's contribution to the training process was valuable.
 - A. Strongly agree
 - B. Agree
 - C. Neutral
 - D. Disagree
 - E. Strongly disagree
- Were the materials, hand-outs and/or activities useful?
 - Yes
 - No
 - Don't know
- Were the teaching methods effective?
 - Yes
 - No
 - Don't know

Level 1-Reaction

Feedback from workers:

“This training was a great experience. I loved the videos! They caught my attention because they are in my native language. I can follow and understand what is happening.”

“It is important to wear protective gear when handling chemicals, such as gloves. And it is also important to wash our hands before and after.”

“To be careful with the manure lagoon because they are dangerous. We shouldn’t get in or get too close.”

“Treat the animals with care and be careful with them for our own safety. We have to move the cows slowly and with patience”

Level 1-Reaction

Feedback from owners and managers:

“This is a great program that is easy to use!”

“Very impressed with the delivery of the training. All workers were highly focused and interested.”

“Can you visit us again in 6 months to train again?”

“I’d highly recommend this program to my colleague.”

Level 2-Retention

- Classic pre-post examination
 - Must have a baseline (pre test) compare to
 - Consider reading level of worker
 - Careful attention to wording
 - Use images
 - Incorrect answers may reflect poor wording, not lack of learning
 - Analysis to determine where training could be improved
 - **Questions should reflect learning objectives**

Level 2-Retention

How can pre- and post-disinfectants be harmful to the body?



- Irritate eyes
- Irritate the skin
- Irritate the nose and mouth
- All of the above are correct

Level 3-Behavior Change (Dev Capacity)

- This is most difficult to perform
- Usually 3 to 6 months post training
- Observation or self-report?
- Return trip or phone call
- Has the worker changed the way they do their job?

Questions	Yes	No
(1) Did you take the Dairy Safety Training using this iPad tablet?	98.9%	1.1%
(2) Have you applied safety techniques that you learned from the safety training?	95.4%	4.6%
(3) Have you taken steps to prevent any injuries or accidents involving yourself or coworkers because of this safety training?	97.7%	2.3%
(4) Have you observed any safety issues at work?	34.5%	65.5%
(5) Have you reported any safety issues to your coworkers or supervisor? (if answered "yes" to Q4)	90.0%	10.0%
(6) As compared to before the safety training, do you think you have performed your job in safer manner?	100.0%	0.0%

Examples of questions to ask in order to assess the impact of your training include:

- Since the training, which of the following have you done that you did not do before your training?
 - A. I pay more attention to the materials I am working with (transporting, loading, or unloading)
 - B. I make sure I have shipping papers, and have read them
 - C. I ask for material safety data sheets
 - D. I look at the placards associated with the materials I am handling
 - E. I speak up if I think there is a safety and health issue
 - F. I work with hazardous materials with more caution and awareness
 - G. I have not done anything differently yet
- What have you been able to do since returning from training to share new safety and health knowledge with other workers?
 - A. Write in my company/union newspaper
 - B. Talk in safety and health/union meetings
 - C. Talk informally on the job
 - D. Work with the company/union to communicate safety and health priorities to management
 - E. Train other workers
 - F. Work on a safety and health committee
 - G. Nothing yet

● **Level 4-Results**

- Lagging indicators:
 - Injury/fatality reduction
 - Near miss reduction
- Leading indicators:
 - Hazards corrected
 - Processes changed
 - Meetings attended

● **Level 5-Cost Benefit Analysis**

- Cost Effectiveness Analysis

Training Documentation

- Workers receive a certificate
- Owner receives a training report

  Dairy Extension
The University of Texas Health Sciences Center at Houston
School of Public Health
Thursdays, February 4, 2016



This letter is to certify that Eastside Dairy participated in the Dairy Worker Safety Training course that the University of Texas School of Public Health and the New Mexico State University Dairy Extension held on Thursday, February 4th of 2016. The program, presented in both English and in Spanish, was 1.50 hours long and detailed the prevention of injuries and work protocol.

The following worker modules were provided:

Part I: General Dairy Farm Safety

- ATV safety
- Cattle flight zone
- Chemical safety
- Eye and ear protection
- Milking barn safety
- Moving cattle safety
- Proper cattle immobilization
- PTO safety
- Safety around bulls
- Electrical safety
- Ergonomics
- Livestock-handling and treatment chutes
- Safety around heavy equipment
- Safety around the silage pile
- Safety in the machine room
- Understanding how cattle see
- Waste lagoon safety
- Working with self-locking stanchions

Part II: Job Specific Training

General & Outside worker safety

- Hygiene & PPE
- Fire prevention
- Lock out/Tag out
- Ladder safety
- Safety in pens
- Outdoor safety & livestock-handling
- Lifting safety
- Treating cows
- Bull safety
- Treating non ambulatory cows

Milker & Calf Caretaker safety

- Cleanliness, hygiene & PPE
- Crowd-gate safety
- Milking routine safety
- Safety with chemicals
- Calf Caretaker safety

Feeder safety

- General feeder safety recommendations
 - Drug & alcohol policy
 - Safety belts & proper speed
 - Loader buckets
 - Awareness of workers and/or children
- Machinery Power Takeoff (PTO) safety
- Safety around the silage pile
 - Silage avalanche protection
 - Rollover protection (ROPS)



Training Requirements in OSHA Standards



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