

Safety Training

Making the connection to high performance

By Earl Blair and Dong-Chul Seo

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HAVE YOU EVER KNOWN ANYONE who was fatally injured because of a training issue? Bird and Germain (1996) tell the story of a 19-year-old who died on the first day of his job because he was not adequately trained to operate heavy equipment. Inadequacy issues with safety training include safety training that 1) is not conducted; 2) is conducted but ineffective; or 3) is delivered well but not integrated into the workplace and thereby has no real impact on performance. This article poses some pointed questions and cites related research in order to explore leading training strategies and methods. The expectation is that effectively practicing these strategies will result in significantly higher levels of performance.

Expected Results Not Produced

Some believe that training is the answer to all safety performance problems. They jump to implement training as the solution to every safety issue that arises. This perception is counterproductive, however. It not only fails to solve the real problems that exist, but it also contributes to overtraining and irrelevant training, both of which should be avoided. Overtraining

and irrelevant training lead to frustration and loss of credibility for both management and the training program.

Training: It's No Silver Bullet

Training is commonly proposed as the solution to a problem when other solutions would be more appropriate. Some organizations treat safety training as a panacea, believing that "training is the hammer and safety problems are the nails."

Various interventions other than training may apply in spe-

cific situations, yet training may still be the intervention selected. For example, suppose a site experiences an increasing number of injuries. Rather than simply institute additional employee training, site management may need to address environmental hazards, focus on enforcing salient safety rules, or implement proper rules and work procedures.

Or, perhaps the problem is poor employee motivation. Depending on the reasons for the lack of motivation, strategies such as job enrichment and/or worker engagement could be more effective than training. In fact, training for motivation may be counterproductive, whereas individual coaching, employee participation and improving working conditions to facilitate safe behaviors likely would be more successful.

This practice is akin to prescribing without diagnosing. In the medical profession, physicians determine the diagnosis before prescribing the prescription. Along this line, Machles (2007) notes that training often is used as a quick fix to performance problems. In some case, training is prescribed before the diagnosis (i.e., needs assessment) has been established. He suggests that training be the last consideration, not the first, in solving performance problems.

Additional Perspectives on Training

In *On the Practice of Safety*, Manuele (2003) observes, "Training . . . is often erroneously applied as a solution to problems, with unrealistic expectations" (p. 77). He emphasizes that organizations have learned, especially from Deming (2000), that most problems in any operation are systemic and, thus, many workplace problems and risky work methods can be resolved only by management. Keep in mind that problems in the system can only be corrected by redesigning the system.

Manuele notes that workers are "handicapped by the system" and offers this quote from Deming:

The supposition is prevalent the world over that there would be no problems in production or in service if only our production workers

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would do their jobs in the way that they were taught. Pleasant dreams. The workers are handicapped by the system, and the system belongs to management. It was Dr. Joseph M. Juran who pointed out long ago that most of the possibilities for improvement lie in action on the system, and that contributions of production workers are severely limited (Deming, 2000, p. 134 in Manuele, 2003, p. 78).

Performance: More than Just Activity

How is performance defined in the context of safety training? Generally, trainers expect training to affect knowledge, behavior and outcomes, and ultimately, to make a positive difference (outcomes) in the workplace.

In *Training Ain't Performance*, Stolovitch and Keeps (2004) explain that training itself is not performance. They define training as "structured activities focused on getting people to consistently reproduce behaviors without variation and with greater efficiency under various conditions" (p. 5). They define performance as "a function of both the behavior and accomplishment of a person or group of people" (p. 8).

When people perceive training and performance as synonymous, they are unlikely to take all the steps necessary to gain the full benefits of training. This problematic viewpoint occurs when the activity or behavior of conducting training is, itself, considered to be performance. This limiting view of training only meets half of the definition for performance—no consideration is given to actual accomplishment or result other than the activity of training itself.

To be more effective, safety trainers should view training (even one-time training) as an ongoing process rather than as a single event. The training itself is an activity. The performance is a combination of the training activity and the ongoing achievement of the desired behavior.

Improving Mandatory Compliance Training

When training is required, such as annual safety refresher and compliance training, one might consider enhancing the training by including specific organizational performance criteria. Taking a creative approach and integrating specific performance elements certainly seems logical.

The way an organization structures its compliance training can greatly influence its impact. For example, compliance training may be integrated into an organization's safety measurement system. To increase the percentage of employees who enthusiastically participate in mandatory annual refresher training, some organizations add compliance training to their safety scorecards and key performance indicators.

In certain ways, OSHA has established some of the necessary training objectives. However, as Miller (1998) observes, "Do not think for a minute OSHA will ever be able to provide your organization with the sole performance criteria on which to build a safety management system" (p. 25). Friend and Kohn (2007) make a similar point: "It is important to

recognize that conformance to legislation is not enough to create a safe and healthful working environment. It merely creates a baseline" (p. 40).

The point is only each organization can drive continuous improvement. Smart trainers may consider adding related improvement objectives to the compliance and skills objectives already established as part of mandatory training.

For clarity, the safety training process is divided into three sections that are presented in chronological order: 1) pretraining planning strategies; 2) training delivery strategies; and 3) training transfer strategies.

Pretraining Planning Strategies

When conducting needs assessment, a primary question is how to determine when safety training really is needed. The answer is contained in this question: "Do employees possess the needed knowledge and skills to do their jobs safely?" Beyond the various required training, such as annual refresher training for compliance, this is the sole criterion for determining when training is needed.

A useful strategy when planning for training, including classroom, on-the-job or coaching, is to consider more than simply the needs and the delivery of actual training. Additional objectives include transferring the training to the workplace and sustaining the performance. Unfortunately, training often is viewed as a one-time event that occurs at a particular time and in a particular place. It is more effective to plan for training as much more than an isolated classroom event. Effective training is part of an ongoing process that involves needs assessment, appropriate delivery expertise, transfer of learning to the work culture and sustained performance. Ideally, to improve performance, safety training must be integrated into organizational culture and management systems.

Four Strategies to Align & Integrate Training

These strategies span pretraining to posttraining, but the plans for how to implement them should be determined during the preplanning stage.

1) **Align training objectives with the mission and business goals of the organization.** Although this may seem self-evident, this does not always occur. For example, if an organization states as part of its mission that it takes a caring approach toward customers and toward workplace safety, then it should provide training and education to establish specific expectations and enable employees to know how to specifically take a caring approach to safety. The objectives that help an organization accomplish its mission should be explicit, and effective training is one vehicle to ensure clarity and understanding.

Alignment can be illustrated through the balanced scorecard approach. Through a process known as cascading, scorecards at all levels of the organization are aligned with the top-level scorecard that measures an organization's overall strategy and goals. Cascading can extend to safety training so the objectives and goals of training support the organization's overall goals and mission.

Abstract: *Safety training is commonly viewed as a solution for workplace safety problems. As a result, organizations spend much time and money on training. Unfortunately, this training often does not result in the high levels of performance expected. This article presents strategies to ensure that training has a long-term, positive impact on organizational performance. The focus is on ways to effectively integrate safety training into the work process and establish ongoing systems to sustain performance.*

Safety and health training is most effective when there is a high level of engagement. Essentially, training that is highly engaging is conducted as a conversation or dialogue.

2) **Determine the most effective training methods for the particular situation.** The most effective methods of training often are dictated by the type of training to be conducted. For example, if forklift training is needed, it should include a combination of classroom methods, hands-on training and evaluation of competence. The OSHA requirement for forklift training is a performance standard and the agency provides specific guidelines for methods to conduct training.

3) **Make plans for learning transfer and integration into the work processes and culture.** Some concepts that support training transfer include behavior observation, one-to-one coaching, individual accountability and ongoing measurement of safety skills learned in the training.

4) **Establish structured management systems to sustain learning.** For the training to improve performance over the long term and to become fully ingrained in the work culture, the new behaviors must be supported by ongoing management systems.

Training Delivery Strategies

The lecture method, although commonly used, is usually not the best method to facilitate adult learning. The strength of a lecture from the trainer's standpoint is that much material can be covered in a relatively short period of time. This may be an appropriate way to educate a large number of people in an auditorium. However, lecturing is a passive approach to learning and studies indicate that active approaches are best.

Engaging Training Improves Performance

Research conducted by Burke, Sarpy, Smith-Crowe et al. (2006) involving more than 30 years of safety training in 15 countries and 95 studies suggests that safety and health training is most effective when there is a high level of engagement. Essentially, training that is highly engaging is conducted as a conversation or dialogue. Dialogue and reflective thinking, versus simple feedback, is a form of engagement that appears to yield greater knowledge acquisition and improved safety performance. Burke et al.'s research suggests that "the most engaging methods of safety training are, on average, approximately three times more effective than the least engaging methods in promoting knowledge and skill acquisition" (p. 320).

It is important to involve line management and employees in determining training content. Given that line management is responsible for safety, it also helps if line managers and employees are highly involved in the delivery of safety training. Potential benefits of such employee engagement include addressing their relevant ideas, gaining their buy-in and strongly influencing their peers via their partic-

ipation. This engagement is another key to connecting training to performance.

Inherent to this idea for effective engagement in safety training is for the trainer to facilitate learning. The skillful use of conversation and dialogue provides the opportunity for the trainer to both facilitate learning and connect with the audience.

One way to facilitate learning is to make the objectives of the training clear so that trainees know exactly what is expected from them and what they will be able to do once the training is completed. Clear objectives help all involved focus on the outcome or performance aspect of the training.

Another way to facilitate learning is to establish a nonthreatening learning environment. Participants must feel comfortable and not feel that they may be embarrassed or ridiculed in front of peers. Fear in the workplace can result in unintended side effects, including reduced participation and low morale.

Finally, trainers accomplish their objectives as facilitators by connecting with their audience (Reimold & Reimold, 2003). Three tactics can help a trainer connect with the audience and improve delivery effectiveness:

1) **Demonstrate respect for the audience.** The instructor's demeanor and behavior are critical for establishing a relationship and a bond with trainees.

2) **Don't become a prisoner to the content.** Focus on listening and responding to participants.

3) **Clearly explain and illustrate the training benefits to trainees.** Help trainees understand the potential benefits from the outset and throughout the training.

The Most Powerful Training Delivery Tool

Trainers can connect with trainees and make a lasting impression in several ways. However, the authors believe the single most effective training tool is telling relevant stories and having trainees reflect on them. Cullen and Fein (2005) conducted research for NIOSH on developing and evaluating effective safety training for miners, which is reviewed in *Tell Me a Story: Why Stories Are Essential to Effective Training*.

One of the best things a trainer can do to improve his/her effectiveness is to select appropriate stories and include them in training. Stories grab attention and make trainees more alert. People tend to remember stories as well. Since people can usually relate to them, stories connect the storyteller to the audience. Stories also can help to vividly make a point. In addition, stories help to emphasize why the training is important (Cullen & Fein, 2005).

Garguilo (2002) agrees that stories are a powerful tool, largely because they:

- empower the speaker;
- create an environment of trust;
- create a bond among those who hear them;
- engage the mind;
- provide a way to learn from personal or vicarious experiences.

Storytelling can impart complex information in an understandable manner. As such, it increases the likelihood that training participants will change

their behavior, which is the main objective trainers are trying to accomplish (Cullen & Fein, 2005).

The most powerful stories tend to be personal stories. Trainers also can use stories from other sources to good effect. Cole (1997) develops and uses simulated stories for training in the mining and agriculture industries. Trainees are put into a simulated situation, such as a fire in an underground mine or a tractor rollover that is about to occur. Then, they determine and describe the actions they must take to prevent injury or reduce the impact. In this manner, participants put themselves into the story and may learn, on an emotional level as well, how to prevent injuries without actually going through the hazardous experiences themselves.

Personal Stories Are Powerful

Early in his safety career, one of the authors worked in a manufacturing plant where a fatality occurred. When the following story is told in training settings, the audience offers rapt attention. Telling the story establishes a bond between trainer and audience, and there are lessons learned, especially about the need to be proactive when dealing with high-risk situations.

My first safety position was at a large manufacturing plant in the south. After a couple of years on the job and a strong focus on safety and training, the facility experienced a significant reduction in injuries and workers' compensation costs were cut in half. Due largely to the improvements in safety performance the plant won a Plant of the Year Award within the international company.

There were 1,500 employees at the facility, and no fatalities had been experienced in more than 25 years of operation. No one expected there would be a fatality.

I remember this as if it happened last week. The facility maintenance supervisor came running into my office, his face drawn and white. "Hurry, follow me, we have a serious injury in the dialysis department." A 32-year-old maintenance mechanic had been repairing the gearbox to a chain-driven stainless steel hopper (which weighed about 2,000 lb) used for mixing dialysis solutions in a large tank, perhaps 15 to 20 ft tall. The hopper was wedged in the top position and the mechanic was working beneath it. As the mechanic worked, the hopper released from its position and crashed down on him, crushing him to death.

Suddenly safety seemed much more urgent. Unfortunately, our actions were now all reactive, not proactive. The maintenance supervisor had to go to the home of the widow and three children and inform them her husband was crushed to death at 1:30 pm. We attended the funeral. The state OSHA automatically came to the plant to investigate.

Stories such as this can be presented in greater depth and detail, and participants can discuss ways to be more proactive (both as individuals and as

organizations) to prevent such an event from recurring. Issues such as safety design, complacency due to a good safety record and inadequate procedures can be discussed using problem-solving approaches.

When a story is told about a tragic event, people tend to remember because it touches emotions, and management and trainees are more apt to make lasting changes. Also, stories have greater impact when told by respected peers rather than when all stories originate from the trainer.

Additional Strategies for Using Stories

Trainers can use several techniques to make stories more powerful in their effect on employees. Spielholz, Clark & Sjöström (2007) discuss fatality narratives as an effective way to convey hazard information. These narratives can be delivered in a concise yet detailed manner. The authors recommend that trainers make copies of the narrative without the recommendations for use as handouts. "After reading the narrative, ask trainees what they would have done to prevent the incident. Use a flipchart or whiteboard, if available, to record ideas" (Spielholz, et al., 2007, p. 25). The article relates how trainees evaluated the fatality narratives and reports that most were influenced to the extent that they planned to make changes in identifying hazards and planning or setting up the jobs.

The idea is that rather than simply relating a high-impact injury story and including the standard recommendations, trainers do not convey the previously developed recommendations immediately and instead encourage trainees to develop their own ideas. This immerses trainees into the situation and gives them an opportunity to solve a problem. The trainer can facilitate a dialogue and ensure appropriate reflection on relevant points. The hypothesis for this level of engagement is that employees who develop recommendations on how to prevent specific injuries and fatalities are more likely to follow their own advice. This is a high-level example of deep engagement of trainees through dialogue and reflective thinking on a topic.

Cullen (2007) sums up the value of storytelling:

For the trainer, one of the most valuable characteristics of stories is their ability to teach vicariously. We do not need to be part of the story to learn from it. Because stories engage both the thinking and feeling sides of our brain, we can place ourselves in the story, and think about what we might have done in the same circumstances, and at the same time feel the anxiety caused by the problem. Storytellers can elicit the fear, confusion or heightened awareness com-

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mon to the stories without ever placing the learners in danger. This situation greatly increases the likelihood the listeners will remember both the story and the lessons it taught.

Another Powerful Training Technique

According to Grzywacz (2007), "oral questioning techniques are a very powerful and effective teaching method." Potential benefits of using skilled questioning techniques include evaluating the trainees' understanding, connecting with the concerns of trainees and encouraging reflective thinking on the topic. Skilled inquiry, such as asking meaningful, open-ended questions, leads to dialogue and engagement. Asking the right questions helps participants solve problems and connects the training to the organization's performance (Wright, 1998).

What are the right questions in the safety training context? Consider the following points:

- Open-ended questions are more likely to engender dialogue and deep reflective thinking on the topic.
- Right questions are relevant; they address current issues and may lead to potential solutions of some pressing problem for employees or the organization.
- Right questions focus on what's right, rather than the usual, "what's wrong?"
- Right questions are directly related to accomplishing the stated training objectives (see sidebar "Asking the Right Questions").

What Is the Key to Learning?

Miller (1998) believes the key to most learning is application. Whether one learns a new language or a specific job skill, application is the catalyst for learning that enables the individual to become fluent. Part of the delivery strategy is to allow trainees an opportunity to apply their new knowledge and develop their skills.

Trainers enhance the learning of skills with illustrations, case studies and/or demonstrations. Trainers then offer opportunities for trainees to learn new skills while the trainer observes and provides feedback. This aspect of training is really safety coaching, a powerful but often underutilized strategy (Krisco, 1997). Safety coaching may be conducted in the classroom, on the production floor or out in the field.

Properly applied, coaching is a powerful training technique (Miller, 1998). A good trainer usually is a good coach. As such, the trainer/coach not only is knowledgeable, but also is able to articulate his/her knowledge. The coach is skilled at making observations and knows what to look for as trainees develop their skills. Trainers/coaches use dialogue and ques-

Asking the Right Questions about Safety Training

- 1) Is training the answer (proper intervention) for this particular safety issue?
- 2) Do employees possess all the knowledge and skills needed to perform their jobs safely and effectively?
- 3) What are the best methods of training for this particular safety topic? Is classroom or computer training needed, or can the training be conducted on the job or by coaching?
- 4) Who should be involved in preparing and conducting the training?
- 5) How do we ensure adequate learning transfer to trainees?
- 6) Specifically, how will new behaviors learned in training be encouraged and supported in the workplace? By management? By supervisors? By coworkers?
- 7) What management systems are established (or need to be established) to ensure an ongoing focus and compliance with our training objectives?
- 8) How well are we implementing and executing our systems for training and safety?

tioning skills to provide direction and help trainees shape their behaviors. With coaching, trainees learn and develop their skills through application.

Training Transfer Strategies

Following training delivery it is important to continue to make training affect long-term performance. Simply delivering training does not ensure its automatic transfer to the work culture. Even the most impressive training delivery is ineffective if the learning does not transfer to the workplace. If a training session is especially impressive, the effect could be confined largely to the value of the immediate entertainment. However, the true long-term value is derived through the consistent transfer of the learning into the daily behavior of the workforce.

Transferring learning into the workplace generally has more to do with motivation levels (and perhaps appropriate enforcement activities) than with skill. However, if employees do not immediately apply and practice the skills learned in training, the skills may become diminished or lost altogether.

The key to transferring learning to the work culture is targeted, systematic follow-up. Stewart (2002) notes that "training is not a . . . magic bullet; you must integrate what is learned directly and immediately into the workplace" (p. 96). Organizations must ensure that the new skills and behaviors are integrated into work. This can be achieved in various ways, and consists of tactics such as modeling, observing, enforcing, reinforcing, making/holding accountable and measuring. The following strategies are based on the authors' experience and general literature review:

- 1) Supervisors are held accountable to model the new skills and behaviors any time they demonstrate or perform the appropriate tasks themselves.
- 2) Supervisors observe employees to determine

whether the new skills and behaviors are being practiced properly in the workplace.

3) Supervisors regularly enforce and support the new behaviors.

4) Supervisors intermittently reinforce the new behaviors.

5) Peers observe each other daily and provide immediate feedback regarding the new behaviors.

6) Peers coach each other in support of the specific safety training and each other's safety.

7) Supervisors and employees are measured and held accountable for the new behaviors.

8) Management is measured and held accountable for supporting the new behaviors.

9) Safety committees handle issues or problems with the new behaviors, including suggestions on how to better enable and facilitate those behaviors.

10) Each safety training topic is handled in a comprehensive and integrated manner.

Regarding the last point, ensure that each training topic supports a key performance indicator. Integration includes reinforcing the topic in regular safety meetings, newsletters and bulletin boards, safety committees and any other ways that align with the way the organization promotes safety performance.

The key is to focus on one topic at a time in safety training. Simply throwing each safety training topic into a mix of numerous ongoing safety topics increases the likelihood that the focus will be lost. When everything is emphasized simultaneously, ultimately nothing is emphasized.

Sustain Learning: Maintain a Management Systems Approach

Sustaining learning is the most challenging aspect of safety training. An analogy to improving workplace performance through training is improving personal fitness through diet and exercise. Integrating the learning into the workplace could be likened to going on a diet. Sustaining the learning in the workplace could be compared to keeping the weight off once it has been lost—maintaining the behaviors over time.

Experience indicates the difficult part is maintaining the weight loss over time or permanently through proper nutrition and exercise. Likewise, sustainability is usually the

greatest challenge in the quest to change long-term performance through training.

Extending this analogy of nutrition and exercise, three areas help individuals change their behaviors. First, one is more likely to be successful in the attempt to get in shape with social support including the help and support of friends and family. For example, it helps many to have a workout partner and family can support a healthy, balanced diet. Second, regular exercise can be encouraged by eliminating environmental barriers, such as installing street lights or developing walking trails. Finally, norm change occurs when one accepts reduced portion sizes of food and accepts that regular activity is part of a healthy lifestyle.

In the workplace, those involved need 1) the social support of coworkers, supervisors and management for the new behaviors; 2) to identify and eliminate or modify environmental barriers that hinder adoption of the new safety behaviors; and 3) to impact the safety culture in such a manner that enhances employee perceptions (norm change) of safety standards.

Table 1	
Key Factors Linking Safety Training to Performance	
Factors	Keys to effectiveness
1) Pretraining planning	
Determine training methods	<ul style="list-style-type: none"> •Is training really the answer? •Conduct pretests •Appropriate methods for topic •Solicit employee input •Classroom, on-the-job, coaching?
Plan impact on performance	<ul style="list-style-type: none"> •Ensure that content is highly relevant •Align with the organization's mission •Include employees' relevant input
2) Training delivery techniques	
Tell stories	<ul style="list-style-type: none"> •Participants develop recommendations from stories •Reflect on prevention methods
Ask questions	<ul style="list-style-type: none"> •Maintain dialogue •Encourage reflective thinking •Ask the right questions
Engender deep engagement	<ul style="list-style-type: none"> •Meaningful problem solving •Employee dialogue and reflection •Employee and line supervisor participation
3) Post-training execution—sustaining performance	
Conduct evaluations	<ul style="list-style-type: none"> •Conduct posttests •Conduct surveys •Conduct employee interviews
Support new behaviors	<ul style="list-style-type: none"> •Observe new skills for competency •Enforce and reinforce new behaviors
Execute a systems approach	<ul style="list-style-type: none"> •Integrate training into the management system •Maintain a systems approach to training

A Training Success Story

Compliance Magazine (now titled *Workplace HR & Safety*) awarded Excellence in Safety Training to various organizations in its October 2006 issue. The Kroger Co. was cited for partnering with Creative Options to develop "Stores Targeting Accident Reduction" (STAR) program. The tools of the STAR program include a safety team binder with an introduction to the program, tips on teaching, coaching, celebrating successes and observation techniques to drive safe behaviors. The training includes a discussion of workplace hazards and associated behaviors for preventing the hazards.

The impressive part about this case is how Kroger integrated the training into the workplace and established a system to sustain performance. After presenting a session on safe working behaviors, the STAR Safety Team observes other employees at work reinforcing safe behavior and providing coaching to reduce unsafe practices. The team enters statistics on both safe and unsafe behaviors into a web-based tracking system, which measures progress against predetermined goals and monitors accident-free days.

A distinction in this analogy for the workplace is that an organization must establish structured, ongoing management systems that expect, support and maintain the behavior. These systems hold people accountable to encourage, enforce, reinforce and reward the desired skills and behaviors. If well executed, the training objectives become part of the fabric and safety culture of the company and, thus, become ingrained and self-sustaining. (A systems approach is the key to effectiveness and sustainability. To learn more about this approach, especially a specific technique, see Miller's *Objective-Based Safety Training* which includes the chapter "Systems Approach to Training.")

Customize Safety Training to Desired Performance

It can be helpful to look at other organizations, especially those with leading safety performance, to see what they do to make safety training effective. Ultimately, each organization must tailor its training to meet specific objectives and to connect with higher performance. Table 1 reviews key factors for linking safety training to performance.

Conclusion

Does your organization have an effective, ongoing training system established? Is your training customized and aligned with your mission, vision and key performance indicators? Is the program missing important elements or strategies for connecting safety training to performance? Does the organization effectively implement and execute the safety training system and follow-up? Organizations that establish and execute an effective safety training system reap consistent benefits and ongoing performance improvements. ■

References

- ANSI/ASSE. (2001). Criteria for accepted practices in safety, health and environmental training. ANSI Z490.1. Des Plaines, IL: ASSE.
- Bird, F.E. & Germain, G.L. (1996). *Practical loss control leadership*. Atlanta, GA: International Loss Control Institute.
- Blair, E.H. (2005, Winter). Twelve best practices for teaching and presenting safety topics. *The Educator*, 4(2).
- Burke, M.J., Sarpy, S.A., Smith-Crowe, K., et al. (2006). Relative effectiveness of worker safety and health training methods. *American Journal of Public Health*, 96(2), 315-324.
- Burke, M.J., Scheuer, M.L. & Meredith, R.J. (In press). A dialogical approach to skill development: The case of safety skills. *Human Resource Management Review*.
- Cantonwine, S.C. (1999). *Safety training that delivers*. Des Plaines, IL: ASSE.
- Cole, H.P. (1997). Stories to live by: A narrative approach to health-behavior research and injury prevention. In D.S. Gochman (Ed.), *Handbook of health behavior research methods*. New York: Plenum. Vol. 4, 325-349.
- Compliance Magazine*. (2006, Oct.). *Compliance Magazine's Excellence in Safety Training Awards 2006*.
- Cullen, E.T. (2007). Tell me a story: Using stories to improve occupational safety training. *Proceedings of ASSE Safety 2007, USA*.
- Cullen, E.T. & Fein, A.H. (2005). *Tell me a story: Why stories are essential to effective training* (DHHS Publication No. 2005-152). Cincinnati, OH: NIOSH.
- Deming, W.E. (2000). *Out of the Crisis*. Cambridge, MA: MIT Press.
- Flaherty, J. (1999). *Coaching: Evoking excellence in others*. Boston: Butterworth-Heinemann.
- Fournies, F.F. (2000). *Coaching for improved work performance* (4th ed.). New York: McGraw-Hill.
- Friend, M.S. & Kohn, J.P. (2007). *Fundamentals of occupational safety and health* (4th ed.). Lanham, MD: Government Institutes.
- Garguilo, T.L. (2002). *Making stories: A practical guide to organizational leaders and human response specialists*. Westport, CT: Quorum Books.
- Grzywacz, J. (2007, June). Training techniques and things to consider when conducting training. Training presentation. Arlington Heights, IL: OSHA National Training Institute.
- Hilyer, B.M., Veasey, A., Oldfield, K., et al. (2000). *Effective safety & health training*. Boca Raton, FL: CRC Press.
- Krisco, K. (1997). *Leadership & the art of conversation: Conversation as a management tool*. Rocklin, CA: Prima Publishing.
- Machles, D. (2007, April). Why safety training may not be the answer. *Occupational Health & Safety*. Retrieved April 9, 2007, from www.ohsonline.com/articles/46549.
- Manuele, F.A. (2003). *On the practice of safety* (3rd ed.). Hoboken, NJ: John Wiley & Sons.
- Miller, K.L. (1998). *Objective-based safety training*. Boca Raton, FL: CRC Press.
- Niven, P.R. (2002). *Balanced scorecard step-by-step: Maximizing performance and maintaining results*. New York: John Wiley & Sons.
- Pike, R. (1994). *Creative training techniques*. Minneapolis, MN: Lakewood Books.
- Reimold, P. & Reimold, C. (2003). *The short road to great presentations*. Hoboken, NJ: John Wiley & Sons.
- Spielholz, P., Clark, R. & Sjostrom, T. (2007, April). Fatality narratives: An effective way to convey hazard information. *Professional Safety*, 52(4), 22-25.
- Stewart, J. (2002). *Managing for world-class safety*. New York: John Wiley & Sons.
- Stolovitch, H.D. & Keeps, E.J. (2004). *Training ain't performance*. Alexandria, VA: American Society for Training & Development.
- Torres, K. (2006, Oct.). Expert: Dialogue makes safety training more effective. *Occupational Hazards*.
- Wright, K. (1998). *Breaking the rules: Removing the obstacles to effortless high performance*. Boise, ID: CPM Publishing.