Need training?

Conducting an Effective Needs Assessment

By Tracey L. Cekada

IN BRIEF

- **The first step in developing a training program is to determine whether training is needed.**
- **A training needs assessment provides some certainty that the time, money and resources used to develop and conduct training will deliver desired performance-based results.**
- **How is a training needs assessment conducted? What model can be followed? Does this model work across different disciplines or industries? Answers to these questions can guide the development of an effective training needs assessment.**

An employee trips over an open file cabinet drawer. Another has a near hit while standing beneath an overhead hoist. The typical solution: Training, training and more training. But is this really necessary? While workers without occupational safety and health training likely are at greater risk for workplace injury and illness, the critical question is whether the training is adequate (Cohen & Colligan, 1998). Sometimes, too much training can dampen its effectiveness and decrease its credibility. The difference between effective and ineffective training may be death, injury, pain, suffering and lost profits (Whiles, 1999).

A large amount of time and money is spent on training. In 1992, Broad and Newstrom reported that an estimated $50 billion was spent each year on formal training, with another $90 to $120 billion spent on less-structured, informal training. ASTD (2010) estimates that in 2009, U.S. organizations spent $125.88 billion on employee learning and development. The group reports that nearly two-thirds of the total ($78.61 billion) was spent on the internal learning function, and the remainder ($47.27 billion) was allocated to external services.

How much training content do employees retain 1 month, 6 months or 1 year after training has been conducted? Estimates suggest that only 10% to 15% of the content is retained after 1 year (Broad & Newstrom, 1992). This problem is compounded when an organization believes that its regulatory-mandated requirements are met once training has been completed and documented. They focus little on whether the training was effective.

In some settings, training is seen as the answer to all workplace-safety-related problems. In these cases, training is implemented at every turn. Often,

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this may leave real problems unresolved. Overtraining also can frustrate employees and cause them to question the credibility of management and the training program (Blair & Seo, 2007). Furthermore, the transformation from implementing required training to newer, performance-based models only heightens the need to ensure that training is the correct solution and, if so, that it is effective (Holten, Bates & Naquin, 2000).

What Is a Training Needs Assessment?

Is training the right solution to workplace problems? To answer this, one can conduct a training needs assessment. This assessment is an "ongoing process of gathering data to determine what training needs exist so that training can be developed to help the organization accomplish its objectives" (Brown, 2002, p. 569). More simply put, it is the "process of collecting information about an expressed or implied organizational need that could be met by conducting training" (Barbazette, 2006, p. 5).

Essentially, a training needs assessment is a process through which a trainer collects and analyzes information, then creates a training plan. This process determines the need for the training; identifies training needs; and examines the type and scope of resources needed to support training (Sorenson, 2002). Rossett (1987) explains that one conducts a training needs assessment to seek information about: 1) optimal performance or knowledge; 2) actual or current performance or knowledge; 3) feelings of trainees and other stakeholders; 4) causes of identified problems; and 5) solutions (p. 15).

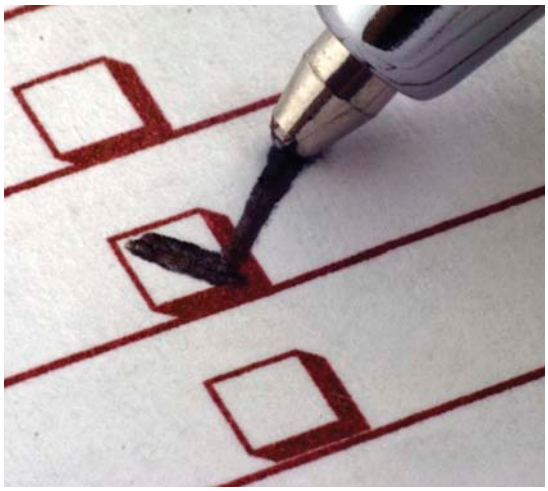
Why Conduct a Training Needs Assessment?

A training needs assessment often reveals the need for well-targeted training (McArdle, 1998). Conducting an effective assessment ensures that training is the appropriate solution to a performance deficiency.

For example, training is not the solution to problems caused by poor system design, inadequate resources or understaffing (Sorenson, 2002). In some cases, increasing an employee's knowledge and skills may not resolve the problem or deficiency. In such cases, implementing training as the solution may waste valuable resources and time.

A training needs assessment can help determine current performance or knowledge levels related to a specific activity, as well as indicate the optimal performance or knowledge level needed. For instance, a 25% increase in slips, trips and falls in the production line area may indicate an emerging problem. A needs assessment collects information about worker competence or about the task itself in order to help identify problem causes (Rossett, 1987).

For a training needs assessment to be effective, its conductor must clearly understand the problem and consider all solutions, not just training, before determining the best solution and presenting findings to management. "When properly done, a needs analysis is a wise investment for the organization. It saves time, money and effort by working on the right problems" (McArdle, 1998, p. 4).



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Costly mistakes can arise when an organization fails to conduct a training needs assessment or conducts one ineffectively. For example, a company may rely on training to fix a problem when another solution would have been more effective or may employ training without examining the required performance skills needed for the task in question.

Background: Training Needs Assessment

The scholarly literature available on training needs assessments is limited. However, several case studies report how specific organizations or industries have conducted these assessments. Moseley and Heaney (1994) examine reports of needs assessments conducted across several disciplines and identify many models and techniques in use. They report that different disciplines have found different techniques that work.

Furthermore, research on this topic indicates that an organization's individual characteristics, such as size, goals and resources, public versus private sector, global marketplace and corporate climate, may influence the training assessment methodology. Some characteristics may present unusual challenges and require special tools for conducting a training needs assessment (Hannum & Hansen, 1989).

Traditionally, a training needs assessment asks employees to list or rank desired training courses. Such an approach can include many employees. However, while the results may temporarily boost employee morale, the success in actually improving employee performance on the job is limited. This may be because such an approach is not performance-based and employees often identify their training wants versus their training needs.

McGehee and Thayer's (1961) three-tiered approach to conducting a needs assessment continues to serve as a fundamental framework. It encompasses three levels of analysis: organization, operations and individual. Today, operations analysis is more commonly called *task analysis* or *work analysis* (Holton, et al., 2000).

Organizational Analysis

Organizational analysis "examines where train-

Figure 1

Example of a Training Needs Assessment

	Questions to consider	Outcomes
Why	1) Is there a performance deficiency in the workplace? 2) How do we know this? What data is this deficiency tied to? (e.g., absenteeism, productivity loss, lost work days, injuries, grievances, damage to equipment/personnel/environment) 3) Even if no performance deficiency exists, are there expected changes in the workplace that may impact performance (e.g., recent changes in regulations; layoffs to staff that may require other workers to pick up additional tasks; new processes or equipment being installed)?	•Employees are provided with annual refresher training on confined spaces. This training covers the minimum required by the OSHA standard. No injuries or damage to equipment have occurred in the past 5 years related to entry into any of these spaces. •Although initially everything may look all right, employees are anticipating significant layoffs to the maintenance staff and supervisory level employees. As a result, additional staff may need to be pulled from other departments to assist employees during entry into PRCS. These employees do not have the requisite knowledge and hands-on experience to carry out the duties of the attendant, entrant and entry supervisor.
Who	4) Who is involved in the performance deficiency? 5) If there are expected changes in the workplace, who else could benefit from the training?	•Maintenance department; supervisory personnel from the maintenance, engineering and carpentry shops; employees from the engineering and carpentry shops. •Supervisors from all divisions of facilities management could benefit from this training so that they can properly educate staff.
How	6) How can performance deficiency be corrected? 7) Can training improve this performance deficiency (e.g., was there a skill or knowledge deficiency that led to the problem)?	•While a current performance deficiency does not exist, it is anticipated that once the layoffs take place, there is an increased risk of employee injury if proper PRCS procedures are not followed because current staffing needs will not be met. Because there may be a change in assigned duties under these new conditions and because some employees are new to the PRCS program, training will be necessary. This training should be provided to the new staff and reeducation on the current staff can improve performance. Current staff who are familiar with PRCS entry procedures may need to play a greater role in educating new employees to the program.
What	8) What is the best way to perform this specific job task? This information can be gathered from reviewing SOPs, regulations or job hazard analysis, or by conducting interviews, conducting on-site observations, reviewing best practices and reviewing performance reviews. 9) Does the employee have these skills and this knowledge? (This information can be gathered in much the same way as #8 above.) 10) What are the critical tasks that have the potential to produce personal, property or environmental damage?	•SOPs for entry into PRCS are available in the maintenance department. The PRCS program also should be referenced. These should both be used as the primary documents to reviewing PRCS entry procedures. •It is expected that there will be two or three people on each shift who can serve in one of the following capacities: 1) entrant; 2) attendant; or 3) entry supervisor. However, employees should be cross-trained to serve as either entrant or attendant. Supervisors from all divisions of facilities management should be trained to serve as entry supervisor. However, it is expected that supervisors in the maintenance department should still have ultimate control over the permits. •Because of anticipated involvement between different divisions of the facilities management department to carry out the PRCS procedures, SOPs will need to be revised. Employees and supervisors will need to be trained on new procedures. It is recommended that all divisions of facilities management (engineering, maintenance, carpentry, etc.) meet to discuss the best approach to carrying out entry procedures. •Training should cover at a minimum those requirements outlined in 29 CFR 1910.146(h)-(j).
When	11) When should training take place so that it provides the most benefit to the employee and has the least impact on business operations? 12) What format is most effective (e.g., classroom, hands-on, self-directed)? 13) What else is needed to make the training successful?	•Training should take place as soon as possible after layoffs take place. Training must occur before the scheduled quarterly entry into the space. It is recommended that training take place for approximately 1 hour at the start of the daylight shift. Evening and night-shift employees should attend this training session as well. •It is suggested that during the training session employees will actually go through the permitting procedures and be taken to one of these PRCS for hands-on experience. •Refresher training should be conducted annually. Additional training may be necessary if there is a change in assigned duties, if there is a change in permit space operations that presents a new hazard, or when there are deviations or inadequacies in employee knowledge.

ing is needed and under what conditions the training will be conducted. It identifies the knowledge, skills and abilities that employees will need for the future as the organization and their jobs evolve or change" (Brown, 2002, p. 572).

Through organizational analysis, data are collected by considering such items as absenteeism, safety incidents, lost workdays, turnover rates, grievances, customer complaints or other performance problems. These data can then be evaluated to indicate where training could improve performance. The organizational analysis phase also should plan for workplace changes, such as skills needed in the future, workforce demographics, and evolving laws and regulations (Brown).

Future Skills

Understanding how an organization may be changing helps to identify skill needs. For example, will new equipment be installed or new processes implemented? Will standards or regulations change? Will technology change? Will employees need communication and interpersonal skills to better work with other employees or in teams? Will cultural changes occur within the organization?

Labor Pool

An organization's labor pool may change as more older people enter the workplace or as women or other minorities become more prominent. As the economy changes and operating costs adjust, the workplace may need to change. For example, becoming a global organization will require changes. Understanding the effects of such changes will help an organization better accommodate employees' needs while still meeting organizational needs.

Laws & Regulations

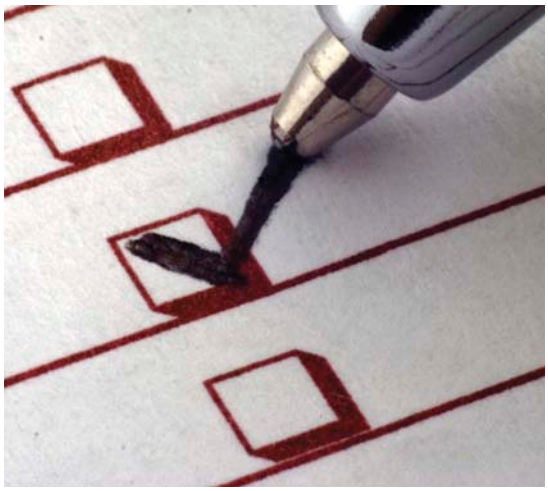
Changes in safety and environmental regulations as well as adoption of other laws may dictate that an organization provide training in specific areas. For instance, employees who work with hazardous materials may need annual refresher training. Under the Family Medical Leave Act or Americans with Disabilities Act certain information may need to be shared with employees. Changes in policies related to workplace violence or sexual harassment also must be communicated.

Operations/Task Analysis

Operations/task analysis examines each job's knowledge and skills requirements and compares these requirements to employees' actual knowledge and skills. Any gaps indicate a training need. Sources for collecting operations/task analysis data include job descriptions, standard operating procedures, job safety analyses/job hazard analyses, performance standards, review of literature and best practices, and on-site observation and questioning (Miller & Osinski, 1996).

According to Brown (2002):

> [A]n effective task analysis identifies:
> •tasks that have to be performed;
> •conditions under which those tasks are to be performed;
> •how often and when tasks are performed;
> •quantity and quality of performance required;
> •skills and knowledge required to perform tasks;
> •where and how these skills are best acquired. (p. 573)



The three levels of the needs analysis are interrelated and data need to be collected at all levels for the analysis to be effective. Based on the information, management can identify training needs, establish learning objectives and develop a training program.

Individual Analysis

Individual analysis examines a worker and how s/he is performing the assigned job. An employee can be interviewed, questioned or tested to determine individual level of skill or knowledge. Data also can be collected from performance reviews.

Performance problems can be identified by looking at factors such as productivity, absenteeism, tardiness, accidents, grievances, customer complaints, product quality and equipment repairs needed (Miller & Osinski, 1996). When deficiencies are identified, training can be established to meet the individual employee's needs.

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Training Needs Asssessment: Models & Key Steps

McClelland (1993) discusses an open-systems model for conducting training needs assessments. This model involves an 11-step approach to conducting a training needs assessment:

Training Department's Annual Review Questionnaire

1) List courses the training department is currently conducting for your department, then indicate how satisfied you are with the results of each course.
2) List any of your department's individual employees who have specific training needs to improve current job performance.
3) List any additional training that you or your employees require in order of need.
4) List any training requirements that you believe will develop within the next year.
5) List any other areas in which the training department can be of assistance to you and your employees.

Note. *Questionnaire from* How to Identify Your Organization's Training Needs *(pp. 84-85), by J.H. McConnell, 2003, New York: American Management Association.*

1) Define assessment goals.
2) Determine assessment group.
3) Determine availability of qualified resources to conduct and oversee the project.
4) Gain senior management support and commitment.
5) Review/select assessment methods/instruments.
6) Determine critical time frames.
7) Schedule and implement.
8) Gather feedback.
9) Analyze feedback.
10) Draw conclusions.
11) Present findings and recommendations.

Barbazette (2006) indicates that a training needs assessment answers typical questions such as why, who, how, what and when.

• **Why:** Asking why helps to tie the performance deficiency to a business need and examines whether the benefit of the training is greater than the cost of the current deficiency.

• **Who:** Asking who is involved in the performance deficiency will reveal the target audience and help the trainer customize the program accordingly. It also is important to identify anyone else who may benefit from the training.

• **How:** Asking how the performance deficiency can be corrected helps determine whether training is the correct solution. It examines whether a skill or knowledge deficiency led to the problem.

• **What:** Asking what is the best way to perform a specific job task will help achieve desired results. Perhaps standard operating procedures outline how to perform a task or maybe government regulations must be considered when completing a task.

The trainer also must determine what occupations are involved in the deficiency. This helps identify critical tasks that have the potential to produce personal or property damage. This process may involve reviewing accident data and records, and interviewing various employees to gain insight.

• **When:** Asking when training can best take place helps minimize impact on the business. Also, it is important to ask what else is needed to ensure that the training is delivered successfully.

The models available can guide the process of developing an assessment methodology. One conclusion based on the literature research is that no single model works in every situation. Instead, the literature available can more purposely serve as a set of guidelines, principles or tools (Holton, et al., 2000).

As noted, assessing training needs is the first step in developing a training program (Rogers, 1991). To determine what type of model or guidelines to follow when selecting a training needs analysis technique, Brown (2002) suggests asking the following questions:

1) What is the nature of the problem being addressed by instruction?
2) How have training needs been identified in the past and with what results?
3) What is the budget for the analysis?
4) How is training needs analysis perceived in the organization?
5) Who is available to help conduct the training needs analysis?
6) What are the time frames for completing the exercise?
7) What will be the measure of a successful training needs analysis report?

The amount of time spent conducting a training needs assessment varies based on organizational needs, resources, amount of time available and management commitment. However, the basic steps in conducting a training needs assessment include:

1) Determine the purpose for the needs assessment and what questions need to be answered. Typically, needs assessments are used to provide data for budgeting or scheduling purposes (DiLauro, 1979). However, one should consider other needs, such as identifying individual skill or knowledge needs, organizational development needs, financial planning, staffing concerns and performance improvement needs.

2) Gather data. A wealth of knowledge can be collected by using tools such as observations, questionnaires, interviews, performance appraisals, focus groups, advisory groups, tests and document reviews. The best approach may involve a combination of methods such as focus groups followed by observation that may reinforce or support the focus group findings.

A significant amount of information is available regarding the proper design of questionnaires, as well as how to properly word interview questions so that they are not leading or too limited to gather valuable information. This topic is beyond the scope of this article.

3) Analyze data. This step involves identifying any discrepancies or gaps between employees' current skills and knowledge and those required or desired for the job.

4) Determine what needs can be met by training. Identify performance problems that can be corrected by increasing employees' skills or knowledge base. Problems related to issues such as motivation, morale, resources, system design or learning disabilities should not be addressed by training.

5) Propose solutions. If the solution is related to a training deficiency, then a formal or informal training program may be needed.

Training Needs Assessment: An Example

Figure 1 (p. 30) presents a simplified example of a training needs assessment for a small organization (fewer than 100 employees) using Barbazette's (2006) five-question approach that identifies the why, who, how, what and when.

With respect to Figure 1, consider this scenario. Maintenance employees in a manufacturing plant must enter outdoor manholes (confined spaces) each quarter to check water levels in these spaces. If water buildup is a concern, then the water must be pumped out. These spaces are considered permit-required confined spaces (PRCS) so staff must follow the company's PRCS entry program.

To simplify this process, McConnell (2003) created an annual review questionnaire that a training department can use to query department managers at the start of the assessment process. This questionnaire is presented in the sidebar on p. 32.

Conclusion

A training needs assessment is a valuable tool to determine what training needs exist in an organization and the type and scope of resources needed to support a training program. When evaluating training, one must differentiate between programs that teach skills and those that convey information (Charney & Conway, 2005).

Delivering information such as a policy change involves conveying information. Enabling someone to perform a job more safely or efficiently, or that enables an employee to produce a higher-quality product that reaps higher customer satisfaction is teaching a skill.

Key Elements of an Effective Training Program

While not the focus of this article, creating an effective training program encompasses several key steps.

•**Conduct a cost/benefit analysis or develop a business case** to determine the financial benefit of conducting training.

•**Establish clear objectives.** Objectives describe what learners will do; state the conditions under which they will do it; and establish criteria by which successful performance will be judged (Molenda, Pershing & Reigeluth, 1996). Training objectives should be aligned with an organization's business goals and mission. ANSI/ASSE Z490.1, Criteria for Accepted Practices in Safety, Health and Environmental Training, provides guidance on writing clear, achievable and measurable objectives.

•**Create content and instructional design.** Determine the most effective training method for a particular situation. Classroom training may be the most effective for one situation, but less so for another. Or, a combination of classroom and on-the-job training may be most effective. Other delivery methods include video, web-based or computer-based training.

•**Determine whether to use in-house trainers or an outside consultant.** In-house training may cost less, provide more flexibility and bring greater hands-on knowledge of the task at hand. An outside consultant may build more interest and bring added credibility related to the topic.

•**Create materials that align with the objectives.** Learning activities should enable learners to apply principles learned in the classroom. To do this, the trainer must understand the audience. Adults learn differently than young students and understanding the challenges and assets related to instructing adults will improve training effectiveness.

•**Transfer knowledge from classroom to workplace.** Effective training enables the learner to apply the knowledge gained in the workplace. Barriers such as a lack of reinforcement on the job, interference from the environment or a nonsupportive organizational culture can inhibit transfer of training (Broad & Newstrom, 1992). Coaching, behavior observation, and accountability for managers, supervisors and employees are just a few ways to improve training transfer.

•**Evaluate training program effectiveness.** This process, critical to success, can range from having trainees complete course rating forms and taking posttraining tests to more complex methods such as using leading and trailing indicators (e.g., accident data records) to measure performance improvement.

•**Implement recommendations from the evaluation.** These improvements may range from changing training materials, time allotment on content and facility location to actual improvement in instructor performance, content and evaluation tools. If the assessment process merely evaluates program effectiveness, yet no recommendations for improvement are implemented, then continuous improvement will not occur.

A training needs assessment is the first step in establishing an effective training program. It is used as the foundation for determining learning objectives, designing training programs and evaluating the training.

Conducting a training needs assessment is an opportunity for managers and trainers to get out into the organization and talk to people. Information is collected, ideas are generated and energy is created within the organization. Such excitement can energize any training that may follow (Warshauer, 1988).

A well-orchestrated training needs assessment can deliver many positive outcomes, according to Warshauer (1988):

1) increasing the commitment of management and potential participants to training and development;
2) increasing the visibility of the training function;
3) clarifying crucial organizational issues;
4) providing for the best use of limited resources;
5) providing program and design ideas; and
6) formulating strategies for how to proceed with training efforts. (p. 16)

Other benefits can include developing employees who have the skills and knowledge to perform their jobs; meeting organizational performance objectives; and improving relationships and employee morale (McConnell, 2003).

Training is often viewed as a nuisance and as a costly endeavor rather than as a tool to boost the organization's bottom line. This perception is reinforced when trainers fail to illustrate the cost/benefit of the training that they conduct.

Trainers must address the major question, "What is the difference between the cost of no training versus the cost of training?" (Michalak & Yager, 1979, p. 20). By illustrating the cost savings, trainers can provide a much clearer indicator (and gain needed support) to proceed with training.

While the amount of scholarly literature on training needs assessments is limited, several case studies show how specific organizations or industries have conducted these assessments. The literature available can serve as a set of guidelines, principles or tools to help SH&E professionals design a methodology for conducting training needs assessments that work for their organizations. **PS**

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