

Introduction to OSH Training



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OSHAcademy Course 703 Study Guide

Introduction to OSH Training

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 703.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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Course Introduction

Where does OSHA look first? Training!

The Occupational Safety and Health Act of 1970 does not address specifically the responsibility of employers to provide health and safety information and instruction to employees. However, Section 5(a)(2) does require employers to “comply with occupational safety and health standards promulgated under this Act.” In addition, more than 100 of the Act's current standards contain training requirements. This course is designed to help students gain a greater understanding of the basic of OSH training.

This course is included in OSHAcademy's Train-The-Trainer Series. This series includes:

700 - Introduction to OSH Management

703 - Introduction to OSH Training

704 - Hazard Identification and Control

706 - Job Hazard Analysis

711 - Introduction to Ergonomics

721 - OSH Training Development

723 - Conducting OSH Training

Information within this course is intended to apply to a broad range of safety training and training programs. Ultimately, the goal of this course and others is to help you prevent accidents. With this goal in mind, have fun and study hard on this informative online training course. Remember, if you have questions please feel free to send an email.

Go to the first module!

Module 1: The Big Picture

Defining "Education"

The term "educate" originates from the Latin, *Ed-u-er-e*(ey-doo-ker-ey), which means "that which leads out of ignorance." Education is anything that brings us out of ignorance and helps to improve our skills, knowledge and attitudes (SKA).

John F. Rekes, PE, CIH, CSP, says it well: "Education is a process through which learners gain new understanding, acquire new skills, and/or change their attitudes."

Education in its broadest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual. In its technical sense education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another. (*Wikipedia*)

Training: Rekes goes on to describe training as "a more specialized form of education that focuses on developing or improving skills. While training incorporates educational theories, principles and practices, its focus is on performance. The goal of training is for learners to be able to do something new or better than before."

[Is Your Training Program Effective? Occupational Hazards, August 1999](#)

The outcome: The educational process can be quite complex and learning usually takes place on many levels. An educational program can be successful even if the learners can't do anything new or different at the end of the program.

Safety Education

Safety education informs, persuades, and motivates students to be involved and work safely. The most important goal of safety education is to show **why** working safely is important.

Why do you think most employees don't do what they are supposed to do in the workplace? It's because they don't know why it's important to do it! Consequently, the most important thing we can do as safety trainers is to make sure our students know why working safely is important.

The KSA Education Process

So, what is the process we can use to make sure employees can most effectively be educated to improve safety performance? We call it the KSA Education Process, and it involves three basic strategies to educate employees so they can gain knowledge, increase their skills, and improve abilities: instruction, training, and experience.

- J **Instruction** transfers **Knowledge**. This is where the educational process begins. We must know something before we can do something.
- J **Training** provides initial **Skills**. Once we know something, we can focus on learning **how** to do something.
- J **Experience** over time improves **Abilities**. Learners gain experience outside the classroom, where the "real education" occurs. Only with experience will we improve our overall performance.

We'll discuss each of these educational strategies in the upcoming modules, but first let's take a look in the next section at the psychological process of being educated. Understanding the underlying psychology of the process of being educated will help us understand that everything that occurs, both internally and externally, experience educates us.

Education is a Continual Process

Now let's see how we each go through a continual educational process. Refer to the illustration below. Think of this as a continual repeating process. We are educated by everything to which we are aware. What we see and hear in the external environment automatically us as follows:

- J Internally, education shapes our thoughts.
- J The body automatically responds to our thoughts with feelings (emotional response).
- J Thoughts and feelings, over time, influence our beliefs and attitudes.
- J Beliefs and attitudes determine the decisions we make
- J Thoughts, feelings, beliefs, and the decisions we make influence our external behaviors.
- J Our behaviors result in consequences that, in turn, educate us once again and the process repeats.

For instance, Bob witnesses Gloria get hit on the head with a wrench someone dropped while working overhead. Now let's look at the process:

- J **Thoughts**. Bob thinks, "Gloria was just hit and might be hurt."
- J **Feelings**. Immediately, Bob's very concerned about Gloria's accident, but is relieved when he learns she was wearing a hard hat.
- J **Beliefs**. He is sure that, because Gloria was wearing a hard hat, she didn't get hurt.

- J **Attitudes.** Gloria's near miss changes Bob's attitude about the importance of wearing hard hats.
- J **Decisions.** He decides to start wearing a hard hat at work.
- J **Actions.** So, he walks over to the supply room, gets a hard hat and wears it every day at work.
- J **Results.** Bob doesn't get hurt, and the other workers he warns do not get hurt either.
- J **Education.** The results (consequences): Bob's experience educates him about the importance of wearing hard hats. His changed behaviors and actions (leadership) help to improve the corporate safety culture.

It's important to know the steps in this process are not necessarily linear in nature. It's probably more appropriate to think of the educational KSA process as all steps occurring all the time.

Safety education explains the consequences

So, why did Bob change his behavior in the previous scenario?

What he saw affected what he immediately thought and felt, and ultimately made him a believer. His actions and experience confirmed his beliefs.

While safety education, according to OSHA, describes the "who, what, where, how and when," safety education should also explain "**why**" safety is important to employee and corporate success. In fact, the "why" may be the most important point to emphasize.

It's important to know that the most frequently expressed reason employees do not work safely is because they don't know "why" it's important. Employees will listen to what management thinks is important. If management does not stress the importance of working safe, eventually employees will not believe it is that important. To most effectively emphasize the importance of safety, the employer must educate employees about the consequences of their performance.

What are Consequences

Consequences are the "events" that immediately follow a behavior. The event is contingent on the behavior, meaning that they occur only if the behavior occurs.

For safety education to be truly effective in the long term, it must emphasize two major kinds of consequences:

-)] **Reinforcers** are those consequences that cause an increase the behaviors they follow. For instance, recognizing employees for safety performance will increase safe behaviors.
-)] **Punishers** are those consequences that cause a decrease the behaviors they follow. For instance, ignoring safe performance will eventually decrease the number of safe behaviors.

It's also important to emphasize the natural and system consequences of behaviors.

-)] **Natural consequences** are those that inevitably occur because of a behavior.
-)] **System consequences** are those imposed by external entity (person or the organization) in response to a behavior.

Let's take a closer look at natural and system consequences.

Natural consequences

Effective safety education will help employees and organizations understand they are naturally rewarded or punished for their behaviors: They basically "do it to themselves."

Natural consequences occur naturally. They are unplanned, inevitable, and occur automatically.

Examples of natural consequences include:

-)] Bob hits his thumb with a hammer.
-)] Judy gets a lot of sleep so she is always alert and a top performer on the job.
-)] Suffering a strain as a result of using improper lifting techniques
-)] Robert gets laughed at when he slips and falls.

Natural consequences may also affect an organization.

More examples of natural consequences as a result of organizational behaviors include:

-)] Management ignores safety programs and accident costs naturally go up.
-)] Effective leadership will improve employee morale and productivity.
-)] A lack of adequate supervision results in poor production and more accidents.
-)] An unreasonable workload creates a lot of stress and high turnover.

Gary, a recent student wrote, "I stress to my co-workers that a life jacket is mandatory on deck. We hired a young guy who was a swimmer in college. He thought his swimming skills were such that he did not need the jacket. We educated him on hypothermia and that he could not save himself if he fell over in 35-degree water. Once he understood the facts, he wore the jacket at all times, because he wanted to, not because he had to."

System consequences

System, or logical consequences are chosen by another person or the organization in response to a behavior or action. Employees and organizations are punished or rewarded by someone else. There are two primary categories of system consequences:

Employee System consequences. It's important to educate employees on the system consequences for performance when they are hired. Examples of system consequences to employees include:

-) Bob suffers disciplinary action for a safety rule violation.
-) Gloria receive informal verbal recognition for a job well done
-) Flavio receives formal tangible rewards for active participation in a safety committee.
-) Emmy is laughed at by his co-workers for being clumsy with a hammer.
-) Judy receives an award for her top performance at work.

Employer System Consequences. Equally important is educating management on the system consequences of organizational behavior. Managers need to know how effective safety management systems impact the way in which regulatory agencies and the community react. System consequences to the employer might include:

-) XYZ Construction is plagued with many OSHA inspections due to the poor workers' compensation rate.
-) ABC Construction is recognized in the industry for their great safety record.
-) OSHA citations and penalties are assessed as a result of an inspection.
-) Civil/criminal law suits after a fatality.
-) The company has a hard time getting new clients due to a poor safety record.

Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **The goal of _____ is for learners to be able to do something new or better than before.**
 - a. education
 - b. training
 - c. instruction
 - d. experience

2. **When does the real education occur?**
 - a. outside the classroom
 - b. personal experience
 - c. in the classroom
 - d. both a and b above

3. **Safety education focuses on why safety is important. Safety training focuses primarily on _____.**
 - a. how to do something
 - b. when to do something
 - c. where to do something
 - d. who should do something

4. **Damage to equipment, high workers compensation costs, and low morale are all examples of:**
 - a. system consequences
 - b. natural consequences
 - c. internal consequences
 - d. external consequences

- 5. Discipline, OSHA penalties, recognition and monetary rewards are all examples of:**
- a. system consequences
 - b. natural consequences
 - c. internal consequences
 - d. external consequences

Module 2: Safety Instruction and Training

First Things First

The initial step in the KSA education process is to transfer knowledge about safety to learners. Next, we want to help them, through hands-on training, to use that knowledge to gain the needed skills to do their jobs safely.

The knowledge and skills that need to be gained by employees is summarized in [OSHA Publication 2254, Training Requirements in OSHA Standards and Training Guidelines](#) which discusses more than 100 OSHA safety and health standards that require some form of instruction and training.

Some safety instruction and all safety training require some form of evaluation to make sure employees have adequate knowledge, skills, and abilities (KSAs) to perform safely at work.

How to Impress OSHA

OK, let's look at this from another point of view. When OSHA inspectors show up for a safety inspection or, in a worst-case scenario, an accident investigation, you can bet they are going to ask employees questions about their job and watch them perform as they walk through the workplace. They may appear to be only looking at "things" in the workplace, but don't be fooled: they are watching everything that is happening. Remember, everything they see and hear educates them about the company.

One of the first areas the OSHA inspectors will evaluate, even before they walk the floor, will be the safety training program. They'll want to see your training documentation. They look at training before other programs because experience has taught them that if the safety training program does not meet minimum standards, overall compliance with OSHA requirements is not likely. OSHA compliance officers make some basic assumptions based on the education they receive:

-) If they ask employees questions, and all they get are shrugs or "I don't know," you can bet that the inspectors are also going to take a closer look at conditions in the workplace.
-) If they ask employees about safety, and they get knowledgeable responses and see skilled employees, they are very impressed and that bodes well for the overall inspection.

Safety Instruction

General safety instruction is usually conducted as a course or meeting in the classroom, workfloor, or around the tailgate. Instruction may also be given through written notices, newsletters, or videos. Instruction may be quite effective when presenting required and "nice to know" information. For example, general safety instruction may include:

-) Employee safety orientation;
-) The steps in a root cause analysis;
-) Introduction to the elements of our safety management system;
-) Process safety management principles;
-) Employee Assistance Program management; or
-) Engineering control basics.

Documenting Safety Instruction

To document instruction, you usually only need an attendance roster. That's because students may not actually have to prove they've learned anything. If students do have to demonstrate they've learned something, an effective way to do that is with a written test because it formally documents results. Remember, as far as OSHA is concerned, "If it isn't in writing, it didn't get done." Also, the only training evaluation required is the student reaction survey or interview.

Safety Training

Safety training differs from safety instruction because it focuses improving "how-to" skills through practice. It takes what the student has learned during instruction and provides an opportunity, through practice, for the student to apply that knowledge.

An important consideration when developing safety instruction and training is to determine if OSHA requires a "demonstration" of adequate employee knowledge and skills as part of the training.

Technical "how-to" safety training that teaches employees how to do hazardous tasks and procedures is actually the most common type of safety education. The training may be quite specific and usually requires some form of student hands-on participation or practice.

Remember, even though an OSHA Standard does not specifically state or require that employees "demonstrate" proficiency, best practices in safety education may require that you include testing, practice and demonstration in a training session. Make sure you include hands-

on practice and demonstration whenever employees might be injured on a job or if they have a deficiency in KSAs.

Examples: Technical training topics

Most OSHA training is technical in nature because it teaches employees how to do things. For instance, when reading about the training employers are required to provide regarding personal protective equipment (PPE) in 29 CFR 1910.132, we see that employers must cover the following topics:

-) when PPE is necessary;
-) what PPE is necessary;
-) **how to put on, remove, adjust, and wear PPE;**
-) the limitations of PPE; and
-) care, maintenance, and disposal of PPE.

Because there is a "how-to" requirement above, the training should include a demonstration and test to make sure each student actually has the ability to use the PPE properly.

More examples of hands-on technical safety training include:

-) how to use respirators;
-) how to remove a machine guard;
-) permit-required confined space entry procedures;
-) emergency evacuation procedures; or
-) lockout-tagout procedures.

Bottom line: If in doubt, test them out!

Some OSHA standards require that employees be trained by employers so that they gain the KSA's necessary to safely perform procedures and practices before they are exposed to related hazards in the workplace. Again, when you see the word, "demonstrate" in an OSHA standard, it means the employee must "prove" to the employer that he or she is proficient.

To earn a safety training certificate of completion employees should pass a test (preferably written) and/or skills demonstration in the learning environment. They can't earn a certificate by just showing up.

Certification

When employees successfully complete the safety training, the employer may certify them as "initially qualified" to perform procedures and practices. New employees should be closely supervised to make sure they can apply what they've learned to their job.

After successfully completing an initial period of evaluation by competent persons, employees should then (and only then) be certified by the employer as "fully qualified."

To document the training, the trainer and students should jointly certify (with a signature) completion of training. Also, remember, OSHA does not "certify" anyone as qualified to do "anything" in the workplace. The employer is ultimately responsible certifying their own employees.

Computer-based Training (CBT)

What does OSHA say about computer-based training (CBT) like this course? It's important to note that OSHA considers CBT training inadequate if it does not provide an opportunity for regular student-trainer interaction. OSHAcademy training does achieve the intent by providing an opportunity for you to ask the instructor questions, and you must also pass a final exam.

I personally do not believe online training is adequate to meet all OSHA requirements for some "how-to" technical topics such as hazardous chemicals handling, lockout/tagout, confined space entry, etc. Online training fails to provide an OSHA-required opportunity to use equipment and practice hazardous procedures. Practice requires a real "hands-on" opportunity using more traditional in-house methods.

For instance, if you were to complete our Course 710, Lockout/Tagout, you would still need to complete a hands-on skill demonstration to prove you have gained adequate knowledge and skills to complete the LOTO procedure. Likewise, if you took Course 709, Personal Protective Equipment, you might have a good idea what PPE is, but you would still need to conduct hands-on practice to prove you have the skills to do things like use, care for, and how to detect defects in PPE.

Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. General safety instruction is usually conducted using ____.**
 - a. hands-on demonstration and testing
 - b. group exercises with written exams
 - c. the lecture or discussion method
 - d. hazardous procedures

- 2. Which of the following topics could be taught using only safety instruction strategies?**
 - a. general safety concepts
 - b. hazardous procedures
 - c. how to use personal protective equipment
 - d. how to use fire extinguishers

- 3. Which of the following would most likely require a technical safety training strategy?**
 - a. elements of safety management
 - b. safety supervision principles
 - c. how to ground/earth a high voltage generator
 - d. hazard control strategies

- 4. According to the text, which educational strategy below is the most common form presented in the workplace:**
 - a. general safety instruction
 - b. technical safety training
 - c. operational safety instruction
 - d. management safety training

- 5. According to the text, when training hazardous procedures or practices, you should evaluate student performance in the learning environment: _____.**
- a. after exposure to hazards
 - b. before exposure to hazards
 - c. during exposure to hazards
 - d. only if OSHA standards mandate

Module 3: Developing the Training Program

What is the purpose of a training program?

First, let's define what a "program" composes: a program contains a written plan, policies, processes, procedures, rules, forms, reports, and possibly other documents. A safety training program is just one of many interactive programs within an integrated safety management system.

In order to meet the continuing need for highly trained safety and health staff, it's important to develop a safety training program. The program should include a written plan for training new-hire and current employees to help ensure they will know what to do when/if ever they are exposed to hazards during work.

The purpose of a training plan is to provide training professionals with clearly written policy and guidelines for implementing an effective safety education and training program for employees.

-) The plan should contain elements that are informative and directive.
-) It should inform everyone about the safety training mission, policies, procedures
-) It should also clearly state who is responsible for carrying out the mission, policies and procedures

ANSI Z490.1-2016, Criteria for Accepted Practices in Safety, Health, and Environmental Training

This consensus standard establishes criteria for safety, health, and environmental training programs. Criteria include program development, delivery, evaluation and program management. According to ANSI 490.1-2001, at a minimum a training program should include the criteria below.

-) A development piece, including needs assessment, learning objectives, course content and format, resource materials, and criteria for course completion
-) Delivery by competent trainers in a suitable training environment
-) Evaluation in a continuous improvement system
-) Documentation and recordkeeping
-) A plan describing how the various training elements will be accomplished

OSHA's Suggested Training Plan Core Elements

The following information was adapted from 29 CFR 1910.120 Appendix E, Training Curriculum Guidelines - (Non-mandatory). Although written specifically for training hazardous waste operations, the core criteria may serve as an excellent template for the design of your safety training program. Below are the 10 core criteria.

1. Training facility: The training facility should have available sufficient resources, equipment, and site locations to perform didactic and hands-on training when appropriate. Training facilities should have sufficient organization, support staff, and services to conduct training in each of the courses offered.

2. Training Director: Each training program should be under the direction of a training director who is responsible for the program. The Training Director should have a minimum of two years of employee education experience.

3. Instructors: Instructors should be deemed competent on the basis of previous documented experience in their area of instruction, successful completion of a "train-the-trainer" program specific to the topics they will teach and an evaluation of instructional competence by the Training Director.

Instructors should be required to maintain professional competency by participating in continuing education; or professional development programs; or by successfully completing an annual refresher course and having an annual review by the Training Director. The annual review by the Training Director should include observation of an instructor's delivery, a review of those observations with the trainer, and an analysis of any instructor or class evaluations completed by the students during the previous year.

4. Course materials: The Training Director should approve all course materials to be used by the training provider. Course materials should be reviewed and updated at least annually. Materials and equipment should be in good working order and maintained properly. All written and audio-visual materials in training curricula should be peer reviewed by technically competent outside reviewers or by a standing advisory committee.

Reviewers should possess expertise in the following disciplines where applicable: occupational health, industrial hygiene and safety, chemical/environmental engineering, employee education, or emergency response. One or more of the peer reviewers should be an employee experienced in the work activities to which the training is directed.

5. Students: The program for accepting students should include:

-) receive assurance that the student is or will be involved in work where exposures are likely and that the student possesses the skills necessary to perform the work; and
-) provide a policy on the necessary medical clearance.

6. Ratios: Student-instructor ratios should not exceed 30 students per instructor. Hands-on activity requiring the use of personal protective equipment, testing equipment, or hazardous procedures should have instructor ratios of 5-10 students per instructor.

7. Proficiency assessment: Proficiency should be evaluated and documented by the use of a written assessment and a skill demonstration selected and developed by the Training Director and training staff. The assessment and demonstration should evaluate the knowledge and individual skills developed in the course of training. It's important to understand that individual, not group, testing be accomplished. Asking the group questions, and receiving answers by one or more members of the group, is not acceptable. The level of minimum achievement necessary for proficiency shall be specified in writing by the Training Director.

-) If a written test is used, there should be a minimum of 25 questions. Each student should answer all questions and a minimum test score of 70% should be required.
-) If a skills demonstration is used, the tasks chosen and the means to rate successful completion should be fully documented by the Training Director.

The content of the written test or skill demonstration must be relevant to the objectives of the course. The written test and skill demonstration should be updated to reflect changes in the curriculum and any update should be approved by the Training Director.

The proficiency assessment methods, regardless of the approach or combination of approaches used, should be justified, documented and approved by the Training Director. The proficiency of those taking the additional courses for supervisors should be evaluated and documented by using proficiency assessment methods acceptable to the Training Director. These proficiency assessment methods must reflect the additional responsibilities borne by supervisory personnel in hazardous waste operations or emergency response.

8. Course certificate: Written documentation should be provided to each student who satisfactorily completes the training course. The documentation should include:

-) student name;

-) course title;
-) course completion date;
-) statement that the student has successfully completed the course; and
-) name and address of the training provider.
-) An individual identification number for the certificate
-) List of personal protective equipment authorized for use (if required)

This documentation may include a certificate and an appropriate wallet-sized card of the above information. When such course certificate cards are used, the individual identification number for the training certificate should be shown on the card.

9. Recordkeeping: Training providers should maintain records listing the dates courses were presented, the names of the individual course attendees, the names of those students successfully completing each course, and the number of training certificates issued to each successful student. These records should be maintained for a minimum of five years after the date an individual participated in a training program offered by the training provider. These records should be available and provided upon the student's request or as mandated by law.

10. Program quality control: The Training Director should conduct or direct an annual written audit of the training program. Program modifications to address deficiencies, if any, should be documented, approved, and implemented by the training provider. The audit and the program modification documents should be maintained at the training facility.

Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. It's important to develop a safety training program that includes _____.**
 - a. a written plan
 - b. a discipline policy
 - c. phone numbers to the nearest OSHA office
 - d. a detailed history of training

- 2. Which of the following is NOT a minimum OSH training program component according to ANSI 490.1-2016?**
 - a. A delivery piece
 - b. Delivery by competent trainers
 - c. A five-year review
 - d. Documentation and recordkeeping

- 3. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, how much employee education experience should a training director have?**
 - a. A master's degree
 - b. At least 10 years
 - c. A bachelor's degree
 - d. At least 2 years

- 4. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, instructors are NOT deemed competent based on _____.**
 - a. previous performance appraisals
 - b. documented experience
 - c. completion of a "train-the-trainer" program
 - d. evaluation of instructional competence

- 5. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, the "hands-on" instructor-student ratio should be _____.**
- a. 30 students per instructor
 - b. 5-10 students per instructor
 - c. no more than 5 students per instructor
 - d. 2-3 students per instructor
- 6. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, which of the following testing methods would be acceptable?**
- a. Each member of a group may answer at least one question
 - b. All group members must agree to question answers
 - c. May confer with each other to answer questions
 - d. Each student must individually answer questions
- 7. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, training documentation need NOT include:**
- a. course completion date.
 - b. individual identification number.
 - c. test scores and percentages.
 - d. name and address of training provider.
- 8. According to 29 CFR 1910.120, Appendix E, Training Curriculum Guidelines, the safety training director should conduct _____ written audit of the training program.**
- a. a continuous
 - b. a weekly
 - c. a quarterly
 - d. an annual

Module 4: Trainer Roles and Responsibilities

Learn by Doing!

Role = Vision: Responsibilities = Mission

Let's define the term. The "role" you play is a term that describes who you are. In the workplace, your role is usually described as a position. You may be the employer, a manager, supervisor, trainer, and/or a safety committee member. And, it's likely you will play more than one role at the same time.

Each role that you play confers upon you certain responsibilities and expectations by others (what they believe to be your mission). The role you play at work sets certain boundaries of acceptable behavior within the workplace. A popular superstar may behave in a manner that you or I would not consider appropriate because, well, that's what they are.

Safety trainers perform many roles

Now, let's focus on the various roles a trainer might play. The [American Society for Training and Development](#) (ASTD) study, [Models for Excellence](#), listed the following roles that trainers typically perform:

1. Evaluator. Identifying the extent of the impact of a safety training program.
2. Facilitator. Managing group discussion and group process.
3. Counselor. Helping an employee assess personal safety competencies, values, and goals.
4. Writer. Preparing written learning and instructional materials.
5. Instructor. Presenting safety information and directing structured learning experiences.
6. Manager. Planning, organizing, staffing, controlling safety training and development operations/projects.
7. Marketer. Selling safety training and development viewpoints, programs, and services.
8. Media Specialist. Producing audio-visual materials for safety training.
9. Analyst. Defining gaps between ideal and actual safety performance and specifying the cause of the gaps.

The [American Society for Training and Development](#) (ASTD) study, [Models for Excellence](#), also listed the following roles that trainers typically perform:

10. Program Administrator. Ensuring that the facilities, equipment, materials, participants are present and that program logistics run smoothly.
11. Designer. Preparing objectives, defining content, and selecting and sequencing activities for specific safety training.
12. Strategist. Developing long-range plans for safety training and development.
13. Task Analyst. Identifying safety-related activities to attain specific results.
14. Theoretician. Developing and testing theories of learning, training, and development.
15. Transfer Agent. Helping individuals apply new safety-related learning to their work.

Unfortunately, the only role that is not listed in the ASTD study is that of a "Leader." Trainers perform the role of leader by setting the proper example of professionalism not only in the classroom, but in the workplace as well.

ANSI Z490.1-2016 Instructor Qualifications

According to ANSI Z490.1-2016, trainers should be "competent" in developing and implementing the various elements of a safety training program. Trainers can gain competency by achieving an appropriate level of technical knowledge, skills, and abilities in the subjects they teach. They can gain these skills through training, continuing education and, of course, on the job experience.

Trainers should be competent in effective safety training delivery techniques and methods that are appropriate to employee learning preferences. They should be able to apply adult learning principles appropriate to the target audience and the learning objectives.

It's important to document trainer competency by maintaining course completion certificates, experience records, licensing, and other documents. The methods used to document trainer competency are left to the discretion of the employer.

Source: ANSI/ASSE Z490.1-2016, para 5.1 Trainer Criteria

OSHA Guidelines for Instructor Competency

OSHA's safety and health requirements frequently use specific terms to identify the different categories of workers who must meet specific training requirements.

-) A certified person has successfully completed specialized training and the training has been certified in writing by a professional organization.
-) A Designated person has received extensive training in a particular task and is assigned by the employer to perform that task in specific operations.
-) An Authorized person is permitted by an employer to be in a regulated area or assigned by an employer to perform a specific task or to be in a specific location at a jobsite. For example: Only authorized employees are allowed to perform lockout/tagout procedures.
-) A Competent person is someone who has broad knowledge of worksite safety and health issues, is capable of identifying existing and predictable worksite hazards, and has management approval to control the hazards. For instance: Only a competent person can supervise erecting, moving, or dismantling scaffolds at a worksite.
-) A qualified person is someone who, through training and professional experience, has demonstrated the ability to resolve problems relating to a specific task or process. For example, an individual may be qualified to perform electrical circuit tests but not qualified to perform hydraulic pressure tests.

More on trainer qualifications

Instructors should be deemed competent on the basis of the criteria below.

1. Previous documented experience in their area of instruction. Job descriptions, performance appraisals, statements by co-workers or managers would help document previous experience.
2. Successful completion of a "train-the-trainer" program specific to the topics they will teach. A typical train-the-trainer course will discuss best practices in adult training principles, and provide an opportunity to practice presenting instruction and training in the subject area they will be expected to train.

3. An evaluation of instructional competence by the Training Director. If you don't have a training director, the Human Resource Manager or other qualified trainer may conduct an evaluation of the instructor's training skills.

1910.120(e)(5) Qualifications for trainers. Trainers shall be qualified to instruct employees about the subject matter that is being presented in training. Such trainers shall have satisfactorily completed a training program for teaching the subjects they are expected to teach, or they shall have the academic credentials and instructional experience necessary for teaching the subjects. Instructors shall demonstrate competent instructional skills and knowledge of the applicable subject matter.

Trainer evaluation and annual review

Instructors should be required to maintain professional competency by participating in continuing education or professional development programs or by successfully completing an annual refresher course and having an annual review by a training director or other competent manager.

The annual review should include observation of an instructor's delivery, a review of those observations with the trainer, and an analysis of any instructor or class evaluations completed by the students during the previous year.

Source: 1910.120 App E, Training Curriculum Guidelines - (Non-mandatory)

Management involvement in training

First-line supervisors and managers play a crucial role in safety and health protection because of their responsibility for workers and for the work being performed. Effective training of supervisors and managers will address their safety and health management responsibilities as well as information on hazards, hazard prevention, and response to emergencies. Although they may have other safety and health responsibilities, supervisors and managers should be fully involved in training safety to send a strong message of personal leadership.

Bottom line: If managers and supervisors can't train safety, how in the world can they manage it?

Module 4 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. In the workplace, your role is usually described as a _____.**
 - a. position
 - b. relationship
 - c. duty
 - d. responsibility

- 2. Which of the following roles is involved with helping an employee assess personal safety competencies, values, and goals.**
 - a. instructor
 - b. manager
 - c. counselor
 - d. analyst

- 3. The only role that is not listed in the ASTD study is that of a _____.**
 - a. strategist
 - b. designer
 - c. manager
 - d. leader

- 4. According to ANSI Z490.1-2016, trainers should be able to apply _____ appropriate to the target audience and the learning objectives.**
 - a. adult learning principles
 - b. principles and practices
 - c. theories and applications
 - d. fundamental goals

- 5. According to OSHA guidelines on Instructor Competencies, this term applies to trainers who have successfully completed specialized training and the training has been certified in writing by a professional organization.**
- a. qualified
 - b. certified
 - c. authorized
 - d. designated
- 6. According to 1910.120 App E, Training Curriculum Guidelines, the annual review of trainer skills should include _____.**
- a. observation of trainer attitudes
 - b. review of previous courses taught
 - c. analysis of instructor or class evaluations
 - d. evaluation of written lesson plans
- 7. Supervisors and managers should be fully involved in training safety to _____.**
- a. verify organizational ability
 - b. display superior management skills
 - c. send a strong message of personal leadership
 - d. get to know which employees need help

Module 5: Evaluating the Training –ANSI

ANSI Z490.1-2016 Training Evaluation Guidelines

As outlined in detail in [ANSI Z490.1](#), Section 3.4, the employer should design evaluation strategies to measure the performance of the safety training program. To do this, one or more evaluation techniques may be used to evaluate training.

The evaluation strategy mentioned in the ANSI standard mirror those developed by Donald Kirkpatrick, author of [Evaluating Training Programs: The Four Levels](#).

As the title of the book implies, he developed a four-level model for evaluating training. The first three levels of evaluation; those that you'll be involved with most of the time, measure the impact of training on the learner. The fourth level measures the impact on the organization. Let's take a look at these four levels of evaluation.



Purpose of Training Evaluation

Evaluation will help determine two things:

1. the amount of learning achieved by training; and
2. whether an employee's performance has improved on the job as result of training.

Below are some methods commonly used to evaluate the effectiveness of training:

1. Employee opinion. Questionnaires or informal discussions with employees can help employers determine the relevance and appropriateness of the training program.
2. Supervisor observations. Supervisors are in good positions to observe an employee's performance both before and after the training and note improvements or changes.
3. Workplace improvements. The ultimate success of a training program may be best evaluated by looking at changes throughout the workplace that result in reduced injury or accident rates.

However you conduct the training evaluation, it can give employers the information necessary to decide whether employees achieved the desired results, and whether the training session should be offered again at some future date.

Evaluate Reaction, Knowledge, Skills, Application, and Impact (RKSAI)

To make sure the training program is conforming to ANSI/ASSE Z490.1-2016, an evaluation strategy to measure results of training on the employee and the organization is required. Training should include methods to evaluate:



-) REACTION - does the learner like the training?
-) LEARNING - did the training improve the learner's knowledge and skills?
-) APPLICATION - can the learner apply what they learned to the job?
-) RESULTS - how does the training impact the organization

Notice that the first three levels focus on the learner.

It's important that a strategy for evaluating the training be developed when the course objectives and content are developed. It should not be delayed until the training has been completed.

ANSI Z490.1 Guidelines for evaluating training programs, process, and results

ANSI Z490.1-2016, Section 3.4.2, recommends evaluating three important elements of a safety training program.

-) How the training program is managed
-) The quality of the training process
-) The results of training

Let's look at each of these three important elements more closely.

Evaluating the training program

Training works best when it's designed and performs as part of an integrated safety management system rather than a series of unrelated training sessions. Below are elements that should be included in the evaluation of a training program.

-) responsibility and accountability
-) quality of facilities and equipment
-) adequacy of program development
-) quality of delivery
-) completeness of documentation and records
-) adequacy of the safety training program evaluation process

Evaluating the training process

In an effective training program the training should be conducted using a systematic process that includes a needs assessment, objectives, course materials, lesson plans, evaluation strategies, and criteria for successful completion. Areas of emphasis include:

-) training goals;
-) learning environment;
-) learning objectives; and
-) training effectiveness.

Evaluating the training results

By evaluating the results of training, it's possible to make improvements to existing plans and gain awareness of the need for new training. Items to evaluate include:

-) quality of the training action-plan;
-) adequacy of long-term planning;

-) use of needs assessment;
-) appropriateness of prioritizing training; and
-) adequacy of support and funding.

Module 5 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. The first three levels of evaluation; those that you'll be involved with most of the time, measure the impact of training _____.**
 - a. on the learner
 - b. on the instructor
 - c. on the program
 - d. on the organization

- 2. According to ANSI Z490.1-2016, training need NOT include methods to evaluate _____.**
 - a. reaction
 - b. learning
 - c. application
 - d. accident rates

- 3. According to the text, which of the following methods may be best at determining the ultimate success of a training program?**
 - a. Questionnaires or informal discussions with employees
 - b. Evaluation of changes that result in reduced injury rates
 - c. Observe employee performance before and after training
 - d. Survey students about the quality of the training class

- 4. Training works best when it's designed and performs as _____.**
 - a. a tightly controlled process
 - b. a series of unrelated training sessions
 - c. a part of an integrated safety management system
 - d. segregated from other safety programs

5. Training should be conducted using a systematic process that includes which of the following?

- a. Needs assessment
- b. Learning objectives
- c. Course materials
- d. All of the above

6. Effective training includes each of the following, EXCEPT:

- a. Evaluation strategies
- b. Learning objectives
- c. A systematic process
- d. Discipline for poor attitudes

Module 6: Training Program Evaluation-OSHA

OSHA Guidelines for Training Program Evaluation

OSHA's Occupational Safety and Health Standards, CFR 29, Subpart: H - Hazardous Materials 1910.120 App E Training Curriculum Guidelines, serves as an effective guideline for evaluating all safety training. To make sure your company conforms to this guideline, you should:

-) conduct or direct an annual written audit of the safety training program;
-) ensure the training provider formally documents, approves and implements program modifications to address deficiencies; and
-) maintain audit and the program modification documents at the training facility.

Suggested Program Quality Control Criteria

There are a number of suggested criteria for determining the quality and appropriateness of employee health and safety training.

1. Training Plan

The adequacy and appropriateness of the training program's curriculum development, instructor training, distribution of course materials, and direct student training should be considered. Below are some additional points that should be considered as well.

-) The duration and frequency of training. Is it too short, just right, or too long? Is training conducted at the right time and often enough?
-) Course content. Is there too little, just enough, or too much?
-) Training requirements of the various target populations. Does the plan cover management training as well as employee training?
-) The process for the development of curriculum. Does it include appropriate technical input, outside review, evaluation, program pretesting?
-) The inclusion of hands-on, demonstration, and instruction methods. Do all students practice dangerous procedures and practices during the training?

-) Adequate monitoring. Is the trainer-student ratio adequate and is the learning environment safe for students

2. Program management, Training Director, staff, and consultants

The adequacy and appropriateness of training staff performance in delivering an effective training program should be considered. Below are some questions you should ask when evaluating program management and staff.



1. How well does the training director demonstrate leadership in assuring quality of health and safety training?
2. To what degree do training staff show competency to meet the demands of delivering high quality safety training?
3. How clearly are staff duties defined?
4. What evidence shows that the training organizational structure suits the needs of the training program?
5. How appropriate and adequate are training methods used by the instructors?
6. Does the training director and staff devote adequate time to the training program?
7. Are human and physical resources adequate?

3. Training facilities and resources

Of course, training facilities and the resources required to conduct training need to be adequate and appropriate for safety training. The adequacy and appropriateness of the facilities and resources for supporting the training program should consider the points below.

-) The adequacy of space and equipment to conduct the training
-) The quality of facilities for conducting hands-on training
-) In the case of multiple-site programs, equipment and facilities at the satellite centers

4. Quality control and evaluation

It's important to set up programs to continuously evaluate the quality control function of the training plan. Adequacy and appropriateness of quality control and evaluation plans for training programs should be focus on ensuring appropriate course evaluation, feedback, updating, and corrective action. The points below should be considered as well.

-) The quality of an advisory committee or outside reviewers
-) The quality control and evaluation program to account for instructor performance
-) The expertise being used within the quality control and evaluation program
-) The role of student evaluations to provide feedback for training program improvement

5. Students

You can't have an effective training program without students! So, it's important to consider the adequacy and appropriateness of the program for accepting students. This part of the evaluation should consider the points below.

1. Assurance that the student already possess the necessary skills for their job, including necessary documentation
2. Appropriateness of methods the program uses to ensure that recruits are capable of satisfactorily completing training
3. Review and compliance with any medical clearance policy

6. Institutional Environment and Administrative Support

Any effective safety training program will depend on the adequacy and appropriateness of the institutional environment and administrative support system. To evaluate this part of the training program, be sure to consider the points below.

-) Adequacy of the institutional commitment to the employee training program
-) Adequacy and appropriateness of the administrative structure and administrative support

7. Summary of Evaluation Questions

Below are key questions to consider for evaluating the quality and appropriateness of an overall training program.

1. Are the program objectives clearly stated?
2. Is the program accomplishing its objectives?
3. Are appropriate facilities and staff available?
4. Is there an appropriate mix of classroom, demonstration, and hands-on training?
5. Is the program providing quality employee health and safety training that fully meets the intent of regulatory requirements?
6. What are the program's main strengths?

Module 6 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Which OSHA regulation serves as an effective guideline for evaluating all safety training?**
 - a. 1910.120, Hazardous Materials, App E Training Curriculum Guidelines
 - b. 1910.1200, Hazard Communication Program, App A. Training
 - c. 1926.120(a)(1)(B), Construction Safety Training Criteria
 - d. 1926.147(b)(3), Confined Space Entry Curriculum Guidelines

- 2. When evaluating the safety training plan, all of the following should be considered, EXCEPT:**
 - a. The duration of training.
 - b. The process for the development of curriculum.
 - c. Training requirements of the various target populations.
 - d. Planned reductions in injury and accident rates

- 3. According to the text, we should evaluate how effectively the training director demonstrates _____ and how well training staff members display _____.**
 - a. knowledge, skills
 - b. leadership, competence
 - c. management, objectivity
 - d. organizational skills, presentation skills

- 4. According to the text, it's important to set up programs to _____ evaluate the quality control function of the training plan.**
 - a. continuously
 - b. monthly
 - c. quarterly
 - d. annually

**5. When evaluating the training program, you should ask if there is _____
classroom, demonstration, and hands-on training.**

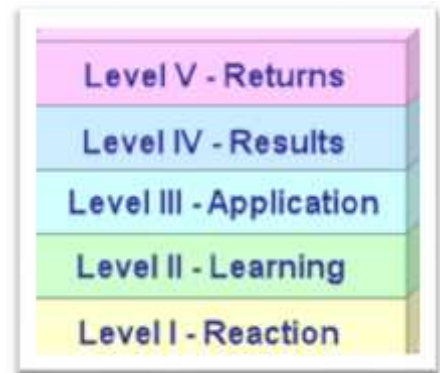
- a. a dependence on
- b. a reliance on
- c. a focus on
- d. an appropriate mix of

Module 7: The Five Levels of Evaluation

Kirkpatrick's Four Levels +1

OSHA and ANSI have both adopted Kirkpatrick's "Four Levels of Evaluation" as the model for evaluating the quality of safety education and training. It's a good model and is used widely.

The model we'll be discussing in this course is slightly modified in that it includes a fifth level that I believe may be quite helpful in the training program evaluation process.



1. Reaction. What are the student reactions to the training program, and what do they plan to do with the material?
2. Learning. What skills, knowledge, or attitudes have changed and by how much?
3. Application. Did the participants apply what they learned on the job?
4. Results. Did the application of what was learned produce measurable non-monetary results in the workplace?
5. Return. Did training result in a monetary gain such as return on investment (ROI)?

According to this five-level model, methods to evaluate should always include the measurement of student reaction and measure sequentially through learning, application, results and finally return. Now let's take a look at each of these levels of evaluation.

Level 1 Evaluation: Measures Reaction

Level One evaluation is extremely important and measures the performance training by gathering data from students about the quality of the content and presentation of the training. Below are some of the questions we want to answer.

-) Did the student enjoy the training?
-) Did they think training was applicable and useful?
-) Was the training a good use of their time?
-) Did they like the facilities, room setup, etc...?

This level of measurement is usually quick and very easy to perform. It doesn't take long for students to provide feedback on the training. It's not expensive to gather and analyze the data. Below are some methods to conduct Level One evaluation.

-)] Complete 'Happy Sheets'
-)] Complete feedback forms based on their personal reaction to the training experience
-)] Provide verbal reaction to the instructor
-)] Complete post-training surveys or questionnaires
-)] Complete online evaluation or grading by students
-)] Provide verbal or written reports to managers back at work

I'm sure you have all completed a training evaluation form (sometimes called a "Happy Sheet" at the end of a training class. Sometimes the trainer may ask you to evaluate the training at some time after training has been completed. OSHAcademy courses always ask for a Level One evaluation after each final exam.

Level 2 Evaluation: Learning

A Level Two evaluation measures what the student knows and can do right after training. The vast majority of your safety training will require Level Two evaluation. It may also measure the increase in knowledge - before and after.

What the learner knows or can do may be measured before, during and at the end of training as long as it's in the learning environment. The "learning environment" should not expose the student to actual workplace hazards. Below are the questions the program needs to ask.

-)] Did the student learn what intended to be taught?
-)] Did the student experience what was intended for them to experience?
-)] What is the extent of improvement in the trainee' knowledge or skill after the training?

Evaluation at this level is suitable for certifying employees as "initially qualified." However, Level Three evaluation will be required to certify the student as "fully qualified." (More on that coming up)

Methods to evaluate knowledge and skills at this level include:

-) written or verbal pre/post training exams to measure knowledge; and
-) interview or observation of performance may also be used to measure skills.

On-the-job training (OJT) is a very effective training strategy to test both knowledge and skills. No matter the training strategy used, be sure evaluation measures are reliable and valid. They are reliable if the results are consistent. They are valid if the results reflect the knowledge and skills specified in the learning objectives.

Test Out option: Evaluation takes place while the learner is in the training environment. Additionally, it may be appropriate, in some instances, to allow learners to "test out" by demonstrating the ability to achieve course objectives without actually being required to complete training. If you allow this option, make sure learners understand test-out criteria, and be careful to ensure training complies with government regulations.

Level 3 Evaluation: Application

Level Three evaluation is interested in measuring the success that learners demonstrate in applying their newly acquired knowledge and skills to their job. Below are some questions the program will want to answer at this level of evaluation.

-) Did the student put their learning into use back on the job?
-) Was there noticeable and measurable improvement in the performance of the student back in their job?
-) Was the change in the student's behavior and their new level of knowledge sustained?
-) Would the student be able to transfer what they learned to a co-worker?

Observation of performance over time is the primary technique used for this level of evaluation. Evaluation takes place at some time (days, weeks, months) after the learner leaves the training environment. Typically, a trainer or supervisor will observe the employee at work and rate his or her performance against learning objectives. Certification at this level may be used to verify an employee is "fully qualified." Below are important reasons to include Level 3 evaluation.

-) Measures long-term retention of knowledge. When you ask the employee to explain procedures at some point in time after training, you can determine how well the employee has retained necessary knowledge.
-) Measures skills after training. You can determine the degree to which the employee has retained the skills necessary to perform the procedure.
-) Validates the safety training. Successful performance in the work environment is a solid indicator that the safety training was adequate.
-) Validates the safety culture. Successful performance at work generally indicates the safety management system and culture are supporting the safety training program.
-) It's efficient. Supervisors can perform this level of evaluation during the normal course of their daily supervision. No special procedure is required.

Information from each prior level serves as a base for the next level's evaluation. It's also important to understand that measurement of employee behavior change typically requires cooperation and skill of line-managers.

Level 4 Evaluation: Results

Level Four evaluation represents a change of focus. Now we're interested in the degree to which training has had an impact or effectively contributed to the overall success of the company. The performance of employees who have received training is usually contrasted with the performance of a control group that has not had the training. Both leading and trailing indicators are measured in Level Four evaluation.

Leading indicators

-) attitudes. What did surveys and interviews reveal about employee thoughts, opinions, and attitudes?
-) conditions. What was the total and average number of hazardous conditions (findings) found during safety inspections?
-) behaviors. What was the rate of unsafe behaviors experienced? What was the rate at which near miss reports occurred?

-) activities. How much safety training was performed? How often are safety meetings held?

Trailing indicators

-) injury rates. Did injury rates go up or down after training?
-) accident costs. What was the impact of training on the average and total amount spent on medical expenses?
-) workers' compensation costs. Did workers' compensation rates go up after training?
-) OSHA violations. What was the change in the frequency and results of OSHA inspections?

It's important to remember that we need to measure these variables both before and after the training has occurred.

Although Level Four evaluation is not required by OSHA standards, it is required by ANSI/ASSE Z490.1-2016. Again, it's important to understand the difference between Level Two/Three evaluation and Level Four evaluation: in Level Four evaluation we're no longer measuring the learner or the training process, but rather the impact of safety training on the organization.

Tip: You'll probably be asked about this difference on the final exam :-)

Level 5 Evaluation: Returns

Wait a minute! I bet you thought there were only four levels of evaluation. Well, there are only four levels required by ANSI standards.

In the 1990's Jack Phillips, of the ROI Institute, developed what has been referred to as the fifth level of evaluation. To obtain a true training ROI evaluation, the monetary benefits of the training program should be compared to the cost of implementing the training.

Thus, the fifth level of training evaluation is developed by collecting Level Four data, converting the data to monetary values, and comparing them to the cost of the training program to represent the return on training investment.

I'm sure you'll agree that it may be beneficial for you to evaluate how safety training impacts the organization's overall return on investment (ROI).

$$\text{Training ROI (\%)} = \frac{\text{Training Benefits} - \text{Training Costs}}{\text{Training Costs}} \times 100$$

For instance, if the benefits (savings) due to fewer accident costs and workers compensation payments for last year was \$400,000 and the cost of conducting training is \$40,000, the training ROI (%) for last year would be $(\$400,000 - \$40,000) / \$40,000 \times 100$ or 900%. In other words, last year the company saved NINE-TIMES the cost of training $(\$360,000 / \$40,000)$. Now that's ROI!!!

This is the bottom line or "acid test" for safety training.

Module 7 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. Which of the following is NOT one of Kirkpatrick's Four Levels of Evaluation?**
 - a. Returns
 - b. Results
 - c. Application
 - d. Learning

- 2. Which of the following evaluation levels would use post-training surveys or questionnaires to gather data?**
 - a. Level 1 - Reaction
 - b. Level 2 - Learning
 - c. Level 3 - Application
 - d. Level 4 - Results

- 3. Evaluation at this level is suitable for certifying employees as "initially qualified."**
 - a. Level 1 - Reaction
 - b. Level 2 - Learning
 - c. Level 3 - Application
 - d. Level 4 - Results

- 4. Supervisors can perform _____ evaluation during the normal course of their daily supervision.**
 - a. Level 1 - Reaction
 - b. Level 2 - Learning
 - c. Level 3 - Application
 - d. Level 4 - Results

5. In _____ evaluation, the non-monetary impact of safety training on the organization is measured.
- a. Level 1 - Reaction
 - b. Level 2 - Learning
 - c. Level 3 - Application
 - d. Level 4 - Results
6. In Level 5 evaluation, the _____ of the training program should be compared to the cost of implementing the training.
- a. monetary costs
 - b. monetary benefits
 - c. training resource costs
 - d. investment requirements

Module 8: Training Program Improvement

Continuous Improvement is the Goal

There's always room for continuous improvement in any safety training program. However, if your evaluation indicates the training program is effective in content, presentation and testing, yet employees are not following the procedures and practices they learned in training, it's likely the culture that supports the training program may need improvement.

In any case, continuous improvement in training, resources, enforcement, and/or supervision may be required when employees are not complying with safety policies and rules.

Ultimately, improving safety training is all about change management. Effective change management is crucial to long term success. We'll take a look at one proven change model that can be applied to safety training.

When Training Needs Improvement

If, after evaluation, it is clear that the training did not give the employees the level of knowledge and skill that was expected, it may be necessary to revise the training program or provide periodic retraining.

At this point, asking questions of employees and of those who conducted the training may be of some help. Below are some questions that you may want to consider asking.



-)] Were parts of the content already known and, therefore, unnecessary?
-)] What material was confusing or distracting?
-)] Was anything missing from the program?
-)] What did the employees learn, and what did they fail to learn?
-)] If a job analysis was conducted, was it accurate?
-)] Was any critical feature of the job overlooked?
-)] Were the important gaps in knowledge and skill included?
-)] Was material already known by the employees intentionally omitted?

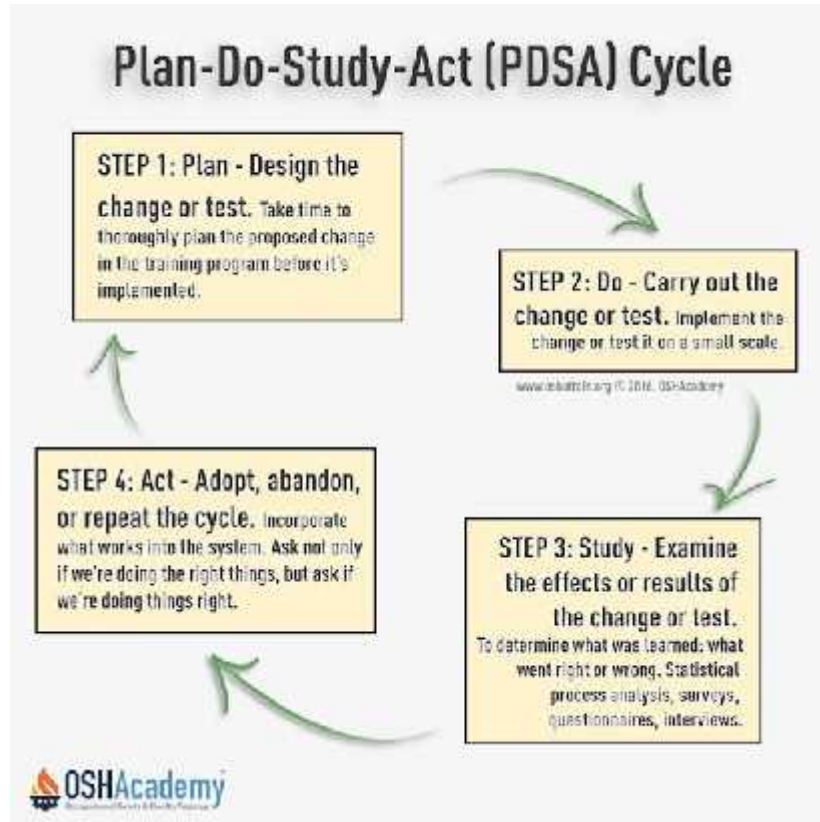
-) Were the instructional objectives presented clearly and concretely?
-) Did the objectives state the level of acceptable performance that was expected of employees?
-) Did the learning activity simulate the actual job?
-) Was the learning activity appropriate for the kinds of knowledge and skills required on the job?
-) When the training was presented, was the organization of the material and its meaning made clear?
-) Were the employees motivated to learn?
-) Were the employees allowed to participate actively in the training process?
-) Was the employer's evaluation of the program thorough?

The Shewhart/Deming Cycle

After asking the questions above, you may discover that one or more improvements to your training program is necessary, it's important to carefully develop and implement the change through effective change management principles.



One simple change management technique is to use the Plan-Do-Study-Act (PDSA) Cycle, first developed by Dr. Walter Shewhart, and later applied by W. Edwards Deming, the father of total quality management, to transform the industry of Japan after World War II. He promoted the PDSA Cycle that was partly responsible for Japan's meteoric rise in manufacturing. He believed that statistics hold the key to improving processes, and that management must take responsibility for quality in the workplace because management controls the processes.



Step One - Plan and Step Two - Do

Step 1: Plan – Design the change or test

Any change in the safety training process or program must be carefully planned to reduce the likelihood that unwanted results occur. We want training plans to work. They're less likely to work if not carefully planned, but rather built on hunches. Bottom line: small steps! The purpose of this important first step is to:

-)] take the necessary time to thoroughly understand the process;
-)] explore the changes that might improve the training process;
-)] identify the factors that influence the process;
-)] plan the change in the training program before it's implemented;
-)] pinpoint specific conditions, behaviors, results you expect to see as a result of the change; and

) plan to ensure successful transition (instructors, supervisors) as well as change.

Step 2: Do - Carry out the change or test

The purpose of this step is to formally implement the change or test. It's important that the test be conducted on a small scale to limit the number of variables involved. If the change is too large, and something doesn't work, you may not be able to pinpoint the variables that caused the unexpected results. If unexpected results occur, limiting the scope will reduce the negative impact of the change.

Step Three - Study and Step Four - Act

Step 3: Study – Examine the effects or results of the change or test

The purpose of this step is to record and study the effects of the change or test. We want to determine what was learned: what went right or wrong. Statistical process analysis, surveys, questionnaires, interviews and other techniques are important in studying the effects the change had on the quality of training.

Step 4: Act – Adopt, abandon, or repeat the cycle

The purpose of this step is to incorporate what works into the system and toss what doesn't. We need to ask not only if we're doing the right things, but ask if we're doing things right. And, are we doing it for the right reason. If we find we're doing the right things, the right way, for the right reasons, we're on the right track. If the result of the change was not as intended, abandon the change or begin the cycle again with the new knowledge gained.

Effective Change Requires Successful Transition

Implementing change in training requires changes in processes, procedures, policies, and ultimately corporate culture.

As a result, it's important to understand the dynamics of change and transition. William Bridges, author of [Managing Transitions: Making the Most of Change](#), emphasizes that, for change to be effective, employees must successfully transition.

Change is external

The origin of change is external, usually viewed as an imposition, and can be quite scary. Change of any kind may actually be threatening to an employee. Change may require new expectations in expertise, knowledge and skills. New expectations make anyone nervous. To one degree or other, we all worry that we may not be able to meet those new expectations. To overcome the fear of the new "unknown" it's important that we successfully transition.

Transition is internal

For change to be successful, employees must transition internally to the new way of doing things. There must be a change in internal thinking as well as external action. It's important during this period of increased anxiety and confusion to communicate often with employees so they understand why the change is necessary. Employees must let go of the past, adapt, and accept what is new.

So what's the bottom line when it comes to change? Make sure you communicate the benefits of a change in the training program. Don't just assume that the change has happened once it has been implemented. Remember, the number one reason we don't do what we should is because we don't know "why" we should do it!

Module 8 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

- 1. According to the text, if employees are not following the procedures and practices they learned in training, this is the likely cause:**
 - a. Lack of motivation
 - b. Poor worker attitudes
 - c. Lack of cultural support
 - d. Supervisor pressure

- 2. Which of the following are appropriate questions to ask if it appears training did not give employees the level of knowledge and skill expected?**
 - a. Was content unnecessary?
 - b. Was material confusing?
 - c. Was something missing?
 - d. All of the above

- 3. It's important that the training change or test be conducted on a small scale to:**
 - a. Reduce control
 - b. Decrease entropy
 - c. Increase randomness
 - d. Limit variables

- 4. According to the text, any change must be carefully _____ to reduce the likelihood that unwanted results occur.**
 - a. planned
 - b. deployed
 - c. studied
 - d. revised

5. According to William Bridges, for change to be successful, there must be a change in _____ thinking as well as _____ action.
- a. right, right
 - b. internal, external
 - c. effective, quick
 - d. appropriate, comprehensive