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Evidence of Effective Training

EBOOK

Introduction

A man was hiking in a dense forest, enjoying the flora and fauna. A light rain dusted the canopy but only found its way to the ground where the trail led through an occasional opening or meadow. As the afternoon crept toward sunset, he realized he had wandered deeper than planned and was now far afield from the sparsely trodden path. He was lost. A few quick turns to reestablish orientation only produced absolute disorientation.

Backroads Magazine addresses this issue on their website in an article entitled, “How to get Back on the Right Path When Lost.” Whether led by wanderlust or wonder lust, as you adventure forward, do not forget to look back. Back is what you need to know to undo lost. The “breadcrumbs” are on the trail back. They are evidence of how we got where we are.

This is not a discussion about hiking, marking a trail, survival skills, or prevention and recovery from an urgent situation in the woods. Rather, it’s about finding evidence of effective training. There is a well-established pathway to be followed in the analysis, design, development, implementation, and evaluation of training solutions (ADDIE).

The ADDIE model was developed by the Center for Educational Technology at Florida State University and the U.S. Army Combat Arms Training Board, Ft. Benning, Georgia. It was published in August of 1975 under the title, “Interservice Procedures for Instructional Systems Development: Executive Summary and Model.”

Note: In the original document, the final phase was referred to as “Control,” not “Evaluation.” But control was subdivided as internal evaluation, external evaluation, and revision of the training as needed. The model has been a mainstay of instructional design with minor modifications ever since.

The ADDIE model, therefore, provides a pathway back—as in the lost hiker metaphor— to find evidence of effective training, development, and delivery. The following sections explore the types of documentation a contractor should reasonably be expected to provide with minimal guidance to demonstrate competent development of their training and education programs.

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Contents

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01 Motivation

EVIDENCE

“If it isn’t documented, it didn’t happen” – anon. If it is documented, there is evidence.

There are ethical, moral, and legal reasons a company should feel motivated to provide its employees with safety and competency training. The ethics and morality considerations can quickly plunge us into deep and frequently unproductive philosophical debates. The only relevant question is whether the company is in compliance with the law.

Note: This is not legal advice. The intent is to point out where the law (i.e., regulations, letters of interpretation, etc.) requires the development and delivery of training before employees are exposed to potential or observed hazards.

All OSHA regulations stem, in one way or another, from Sec. 5 of the OSH Act of 1970, commonly referred to as the General Duty Clause:

(a) Each employer --

(1) shall furnish to each of his employees’ employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

Understanding the General Duty Clause is critical because it applies to both the company and the worker. Section (a)(1) addresses what are often referred to as Serious Injuries and Fatalities (SIFs), while section (a)(2) covers compliance with specific standards mandated under the Act. Policies and procedures, PPE selection, and training programs are all intended to guide employee actions and conduct. In both cases, compliance is mandatory.

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02 Needs Analysis

Contractors should have a range of documentation available to support due diligence. Some of this documentation confirms compliance with federal, state, and local regulations, industry best practices, company safety policies, master service agreement mandates, and site-specific hazard assessments. Other documentation should demonstrate that the company maintains standards for instructor qualifications and that there is evidence those standards are being met.

Define the framework for the training audit by identifying what activities, services, or tasks the contractor will perform on the company's behalf.

Determine whether OSHA has specific training requirements tied to those tasks. Begin by looking in the OSHA guide 2254-09R 2015, "Training Requirements in OSHA Standards." Be aware that many OSHA training regulations are generalized.

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03 Active Exposure

For example, the training requirement for resistance welding personnel found in 29 CFR 1910.255 (a) (3) simply says, “workers designated to operate welding equipment shall have been properly instructed and judged competent to operate such equipment.” That is a heavily loaded statement, devoid of specific criteria or definitions.

An internet search concerning resistance welding safety identified a joint American Welding Society (AWS) and American National Standards Institute (ANSI) booklet entitled, “Recommended Practices for Resistance Welding.” This document, combined with the equipment manufacturer’s instructions, may provide a sufficient foundation for developing proper instruction and competency testing. However, the standard does not address safety directly. See section 1.3:

1.3 Safety
Safety and health issues and concerns are beyond the scope of this standard and therefore are not fully addressed herein. Safety and health information is available from the following sources:

American Welding Society
- ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes
- AWS Safety and Health Fact Sheets
- Other safety and health information on the AWS website

Material or Equipment Manufacturers
Safety Data Sheets supplied by materials manufacturers
Operating Manuals supplied by equipment manufacturers

Applicable Regulatory Agencies
Work performed in accordance with this standard may involve the use of materials having been deemed hazardous and may involve operations or equipment which may cause injury or death. This standard does not claim to address all safety and health risks that may be encountered. The user of this standard should establish an appropriate safety program to address such risks as well as to meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.

Reviewing the recommended resources introduces additional considerations and training requirements. For example, Z49.1:2021 suggests the employees may need to be trained in hot work, confined space entry, respiratory protection, lockout/tagout, electrical safety, PPE (including eye and face protection), and other safe operations topics. The scope of required training expands quickly as the work to be performed and the work environment are more thoroughly examined.

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04 Passive Exposure

Another essential consideration is what activities might be performed by other contractors while employees are present on-site (simultaneous operations). In these cases, the training framework may expand to include awareness-level education. This type of training is not necessarily performance- or competency-based. Instead, it focuses on hazard recognition, exposure prevention, and understanding how one task may interact with others happening nearby.

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05 Framework Analysis

In developing the training framework, a wide range of resources have been reviewed to help define, in general terms, what the company needs to train. Both the example and a generic approach include the following sources and considerations:

- OSHA requirements or regulations
- Equipment manufacturer recommendations
- Materials hazards (Safety Data Sheets)
- Company policies and procedures
- Master service agreement requirements
- Hazard assessment outcomes
- Associated hazards (as noted in the example)
    - Fire prevention and protection (1910.252 (a)(2)
    - (xiii)(C)
    - Electrical safety
    - Lockout/tagout
    - Eye and face protection
    - Respiratory protection
    - Other PPE considerations
    - Site specific considerations (e.g., confined
    - space entry)
    - Simultaneous operations

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06 Training Design and Documentation as Evidence

By this stage, it should be clear what kind of documentation to look for. The goal is to find evidence that training or education on the relevant topics, based on specific tasks or operations, exists and is actively used by the company.

Utilization can be verified through access to the company's training records. A good starting point is a training matrix or similar device that shows who needs training, when it should occur, and whether it has been completed. A valid class roster might list the date, time started and ended, instructor name(s), student names and signatures, student identification (e.g. driver's license), and instructor's signature verifying the accuracy of the roster.

The training materials themselves also need to be reviewed and documented. Well-designed lessons or courses contain built-in indicators of validity. For example, a general needs assessment for resistance welding may identify fire prevention training as necessary. Course objectives, if properly implemented, should inform students of the skills or knowledge they will gain. When reviewing these objectives, ask whether mastering them would be sufficient to prevent a fire or explosion during resistance welding. If so, verify that the training format (e.g., PowerPoint, online module, video) actually delivers content that supports those objectives.

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07 S.M.A.R.T. Objectives

To demonstrate that training is effective, it's important to examine the quality of the objectives. Well-constructed objectives serve as the foundation for instructional success. One widely recognized method for writing clear, effective objectives is the S.M.A.R.T. approach, introduced by George T. Doran in the November 1981 issue of Management Review (Doran, G. T. (1981). "There's a S.M.A.R.T. way to write management's goals and objectives").

The S.M.A.R.T. acronym stands for Specific, Measurable, Achievable, Relevant, and Time-bound. In instructional design, it starts with a student-focused structure: "The student will be able to..." rather than "We will teach you how to..."

Specific	**Clearly states what the student will do.** Example: "The student will be able to demonstrate..."
Measurable	**Defines how success will be evaluated.** Example: "The student will be able to demonstrate how to safely screw in a lightbulb..."
Achievable	**Matches the scope of the objective to the time and complexity.** It's reasonable to teach how to screw in a bulb in one objective; less so to cover rewiring a socket too.
Relevant	**Aligns with the overall goal.** If the goal is to light the room, screwing in a bulb is relevant; measuring socket distance isn't.
Time-Bound	**Sets a clear timeframe for achievement.** Example: "By the end of this lesson, the student will be able to demonstrate how to screw in a lightbulb."

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07 S.M.A.R.T. Objectives (cont'd)

An overview of this approach is available on the Substance Abuse and Mental Health Services Administration (SAMHSA) website in their SMART goals fact sheet, which states: "Objectives are the specific steps that lead to the successful completion of the project goals. Completion of objectives result in specific, measurable outcomes that directly contribute to the achievement of the project goals."

Although originally aimed at company managers preparing goals and objectives, the S.M.A.R.T. framework is also used in instructional design. "Learning objectives, sometimes referred to as learning outcomes, are the statements that clearly describe what students are expected to achieve as a result of instruction (Melton, R. (1997). Objectives, Competencies and Learning Outcomes: Developing Instructional Materials in Open and Distance Learning. London, UK: Kogan Page.)."

Understanding S.M.A.R.T. is key when evaluating documentation. It is easy to look at training rosters and assume the topics listed were adequately covered. However, confirming what was actually taught, and whether it was delivered within an appropriate time frame, requires more deliberate tools. For instance, an objective like, "The student will be able to safely enter a permit-required confined space upon successfully watching this seven-minute video," may sound goal-oriented but lacks real instructional validity. Despite this, many companies use similar statements and assume the outcome is sufficient.

Training can be delivered in various formats: synchronously in-person or live online, or asynchronously through computer-based training (CBT) or web-based training (WBT). Asynchronous formats should include protocols for verifying student identity, such as virtual signatures, electronic rosters, and learning management systems that capture start times, time on task, and enforce idle time-outs.

Other training formats, like On-the-Job Training, Just-in-Time Training, safety meetings, or tailgate/toolbox talks, are also widely used. These sessions must be documented with rosters that include, at a minimum: employee names, signatures, dates, a description of the content covered, and instructor identification. A completed and certified roster serves as valid evidence of training.

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08 Instructor Qualifications

By now, you've compiled a list of the training the company should be delivering, along with the documentation, or "paper trail," that shows whether that training has been provided. The next step is to examine how that training is delivered. In other words, how are instructors being selected and qualified?

Instructor qualifications should be clearly defined in company policy and tailored to each topic. Some types of training, like CPR or First Aid, must legally be taught by certified or authorized instructors. This applies to courses from providers like Medic First Aid (HSI), the American Heart Association, the Red Cross, and the National Safety Council (NSC). The same applies to recognized driver safety programs. For example, NSC offers several defensive driving courses that require instructor certification, and the Smith System also includes trainer certification and periodic refresher requirements. Similarly, the Veriforce Safe Driver course follows a train-the-trainer model.
In addition to provider-specific rules, regulatory standards often outline trainer qualifications. Take the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard as an example. According to 29 CFR 1910.120(e)(5), "Trainers shall be qualified to instruct employees about the subject matter that is being presented in training." The regulation offers two pathways to qualification:

1
Completing a training program designed to prepare instructors to teach that subject matter (a train-the-trainer model), or;

2
Holding academic credentials and sufficient instructional experience in the subject.

Regardless of which pathway is used, the instructor must also demonstrate competent instructional skills and subject matter expertise.

The language in these regulations can seem vague, but the key takeaway is that qualification must be intentional and provable. Certifications, diplomas, degrees, and other records that show instructors meet these standards serve as evidence, both for compliance and for the effectiveness of your training program.

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09 Evidence Package

Whether you are the hiring client or the contractor, it's worth taking the time to organize your evidence requests, or your documentation, carefully and systematically.

If you're on the hiring side, focus your requests on evidence that's directly tied to the work the contractor will actually perform. That includes anything related to potential passive exposure from simultaneous operations. Avoid requesting every document under the sun, especially from small contractors who may be fully qualified but lack administrative support to handle excessive paperwork.

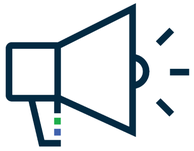
If you're the contractor, clarify exactly what evidence the client expects, and be ready to meet or exceed those expectations.

This isn't just a back-and-forth exercise between the two parties. There are broader responsibilities at play.

For the hiring client, this is about making sure the contractor can do the job safely and in line with your policies, procedures, and legal requirements. A solid training record can go a long way in building confidence.

For the contractor, this is an opportunity to double-check that internal systems are documenting training activities correctly and that safety practices are actually built into day-to-day operations.

There's also one more major factor driving everything we've covered: the law. While this isn't legal advice, it's a reminder to take a hard look at your policies, procedures, training, and documentation (your evidence) and ask whether it would hold up in court.



Be thorough.
Be practical.
Start now.

Don't wait for a big client to spark action.
Get your documentation in order today.

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William has a 50-year career that spans multiple industries from theater and entertainment to safety consulting and employee training. With a Masters in Adult Education Distance Learning and a Graduate Certificate in Occupational Health and Safety, he creates branded and customized blended learning packages for HSE clients and is a Veriforce Master Trainer.

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