

# Lawrence Berkeley National Laboratory



## **On-the-job Training** **Guidance for OJT Instructors**

## Welcome

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On-the-job training (OJT) is an important part of the worker qualification process at Berkeley Lab. A trained and qualified workforce is essential to achieving our mission of conducting groundbreaking research in science and technology, supported through highly efficient operations. Workers are *qualified* if they possess the knowledge, skills, and abilities they need to successfully fulfill their job responsibilities safely and effectively. In work environments such as research OJT is a key part of ensuring that workers are qualified before they begin independent work. OJT is especially critical in work situations where performing work incorrectly can lead to injury, damage expensive equipment, spoil experiments, or worse.

## Introduction

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On-the-Job training is based on the generally accepted principle that people learn best by doing. Skills requiring the use of tools, machines, and equipment are suited to OJT, as OJT is a proven method for teaching mental and physical skills that require learner performance and practice for mastery. It is also well suited for work skills that require a combination of mental knowledge and physical dexterity such as taking measurements, calibrating and/or using equipment, and performing multi-step processes, for example. OJT may be used as part of an individual's primary training program, and to supplement or to maintain skills already learned. It can also be used for cross-training purposes.

## Line Management Responsibility

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Line management has the responsibility to assure that staff are qualified to perform their work activities safely and effectively. The safety requirement is that workers must be knowledgeable and familiar with the hazards and controls associated with each of their assigned tasks and have demonstrated competence performing their assigned tasks safely. While formal EHS Training courses can provide a foundation for understanding the primary hazards and controls associated with using hazardous materials and energies, they aren't necessarily designed to provide detailed information specific to an individual's work and work environment. This is the responsibility of line management and is most effective when integrated into the scientific, technical, quality, efficiency, and/or other operational aspects of worker qualification.

## Determining the need for OJT

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The degree of formality and the comprehensiveness of OJT should be based on the risk of the activity and the experience of the worker performing the tasks. Quite simply:

- The higher the risk the more effort and care should be expended in providing OJT.
- The less experience a person has, the more OJT, mentoring and oversight they will need.

What this means is that OJT is based on the level of risk and the experience level of the worker. Your role as line manager or activity lead is to:

1. Identify the risks related to the work
2. Identify the skills needed to perform the work safely
3. Identify the level of experience each worker has
4. Develop their skills until they demonstrate competence

Depending on the complexity of the level of risk, the complexity of the operation, and the persons starting-point experience OJT may be fairly straightforward, or it may take a long time. In cases where developing competency will take time with repeated OJT sessions and guidance, it is useful to assign an experienced person to work with the newer person during their development to ensure adequate supervision and oversight.

## OJT Method

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A common OJT instructional method is demonstration-performance, or the “show and do” method which can be broken down as follows:

1. **Show:** The trainer explains and demonstrates how to perform the task safely and effectively. Here you provide information, define terms if necessary, and demonstrate the correct way to do the task.
  - a. You highlight the critical steps
  - b. You explain and show the hazards and risks
  - c. You explain and show how to mitigate and control risks
  - d. You demonstrate the task exactly the way they want the worker to perform it.
  - e. You repeat the task until the trainee has a clear understanding for how to perform the task and why it is performed that way.
  - f. You encourage open questioning during the OJT session and you control the pace of instruction according to the trainee’s experience level and the complexity of task.
2. **Do:** The worker then practices the activities and tasks under your guidance.
  - a. Here you ask your trainee to do the same task you just demonstrated.
  - b. While the trainee is working through the task, you provide coaching in the form of feedback, expert tips, praise for correct actions, and you point out and correct mistakes (guide their performance).

- c. Depending on how well (or badly) your trainee performs, you may need to repeat this (or both) steps a few times until the trainee achieves an acceptable level of performance.
- d. As your trainee repeatedly attempts the task, you are hopefully able to reduce the amount of coaching and correcting you are providing, until eventually, your trainee can perform the task completely on his or her own with no additional input from you.
- e. OJT is completed when the worker demonstrates, to the trainer's satisfaction, that he or she has the ability to safely perform the activities and tasks, and the trainee is confident and comfortable performing the task

## Designing OJT

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Broadly speaking, there are three things that most good OJT includes:

1. A clear performance objective
  - a. What the person should be able to do *after* completing OJT
2. How to do it safely and effectively
  - a. *Outline the actions or steps the worker needs to perform safely and effectively*
3. What to do if something unexpected occurs
  - a. What the worker needs to be able to do in the event something unexpected occurs (emergency actions).

Here is a simple example for diluting acid:

Objective: Be able to dilute acid in order to.....	Explain	Perform
<p><b>How to do it safely and effectively:</b></p> <ul style="list-style-type: none"> <li>• Prepares work space inside fume hood</li> <li>• Selects, inspects and wears appropriate PPE</li> <li>• Inspects equipment and can explain what to look for</li> <li>• Uses secondary container when transporting chemical</li> <li>• Uses appropriate and compatible containers for dilution</li> <li>• Carefully pours acid into water to avoid splash (not water into acid)</li> <li>• Uses appropriate stirring method and technique</li> <li>• Labels container that holds solution</li> <li>• Returns chemical to storage using carrying tray</li> </ul>		
<p><b>What to do if something goes wrong</b></p> <ul style="list-style-type: none"> <li>• Responds correctly if splashed (skin, eyes, face)</li> <li>• Knows what to do if equipment or PPE is damaged</li> <li>• Knows where eyewash /shower is located and when and how to use</li> <li>• Can locate the appropriate spill kit</li> <li>• Can use spill kit, and can explain limits of use</li> <li>• Can determine when and how to notify emergency services (911 or 6-999)</li> </ul>		

The list of actions or performances are outlined to help you think through the specific steps needed to demonstrate competency. The columns “Explain”, “Perform” indicate the type of performance the trainee needs to achieve. IN most every case, you want the trainee to perform the actions, but also you want to understand their thinking during the process so having them explain their actions while they perform them allows you to assess whether their mental model of the operation is accurate (that they understand why they are performing the action(s)).

It is critical that the trainee understand what to do if something goes wrong, or something unexpected occurs. For example, workers should know how to inspect the equipment they will be using, and the PPE that is needed. They should also be able to explain “off normal” conditions. For example, they should be able explain what to do if equipment or the procedure or process is not performing as expected (for example, by taking equipment out of service and informing you).

There is a saying that the highest level of competence is when a person can effectively teach how to perform an operation or teach a skill or subject. In this way you want to end when the student becomes the teacher. This indicates that they have internalized the operation and have mastered the skills needed. Until that occurs you will continue mentoring and providing oversight, and perhaps assign a skilled and qualified person someone to be their mentor as they develop their skills.

## Being a good OJT trainer

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Every one of us has our own teaching style, and we should use this to good advantage. The following provides an overview of some qualities that help create an effective teaching and learning partnership.

### Enthusiasm for Producing Learning

- Enthusiasm is having a real enjoyment in what you do. This is a natural part of showing interest in the learning process and how well you relate to your trainees.

### Subject Matter Expertise

- The trainees should be able to look to the trainer as the expert. This calls for a level of skill and knowledge that meets or exceeds the standards set for the performance on the job. In this way, choosing an OJT instructor is a careful consideration tailored to the activity.

### Effective Communication Skills

- Communication skills are often referred to as interpersonal or people skills.  
These skills determine how others perceive you. Your success is largely rooted in your ability to get ideas across to others and to understand what others are saying to you. To be effective as a trainer, you must be responsible for making certain that the messages get through clearly in both directions; information from you to the trainee, and information from the trainee to you.
- There are many ways to use your voice to communicate better. The important thing is to know it does have an effect on the trainee. The words you choose, the sequence you put them in, and the way you say them has a lot to do with how effective your communication will be. It's not only the literal meaning of the words you use that communicate to your trainee, but also the tone of your voice, your body language and other non-verbal cues also send messages to the trainee.
- Language and cultural understandings can influence communication. If language limitations impacts understanding, trainer or trainee should get help.

### Positive Attitude

- Your attitude is a reflection of the way you feel about yourself, your job, and your world. Most of what we do is a result of how we feel, rather than of what we know. A good, positive, attitude reflects the philosophy and goals of the organization. Acquiring such an attitude will have a positive effect on the trainees, enhance their performance, give them a desire to learn, and assist in their own development of a positive attitude. A positive frame of mind can make a difference in you and in the your co-workers.

### Patience and Empathy

- The key is to allow learners to learn at their own pace. No two trainees will be alike, yet usually they will all try to be successful in their efforts. Do not condemn poor performance but strive to understand what is causing it and work with the employee to fix it. Allow the trainee the time and practice to improve. Try to understand the changes that the trainee is going through and be supportive whenever possible.

### Counselor and Advisor

- The trainees expect your instruction and support. They need your feedback on their performance. They want to know what progress they have made and areas where they can improve. You can help them by giving them direction and suggestions on performing their job correctly. You need to have high standards, yet be realistic in your expectations of the trainees. Be fair and objective when assessing their performance. Commend them on their strengths and help them to improve their weaknesses. In other words, strive to be a support to the trainees, not a hindrance or critic.

### Prepared

- People generally accept the ideas of an organized person much faster than they accept the ideas of a disorganized one. It is to your advantage to act, speak, and think in a logical, well-planned manner. It is especially important for the trainer to be organized and familiar with the training process. Trainees recognize and appreciate when the trainer is prepared.

## **CONCLUSION**

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When on-the-job training is integrated into the culture of “doing great science” and “doing great business” it becomes an efficient and effective way to develop competent and qualified workers. This document provided an overview of the value of OJT, determining the need for OJT, and a framework for providing effective OJT.

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