



# GUIDE TO CREATING EFFECTIVE TRAINING

FOR YOUR DESIGN & CONSTRUCTION STAFF

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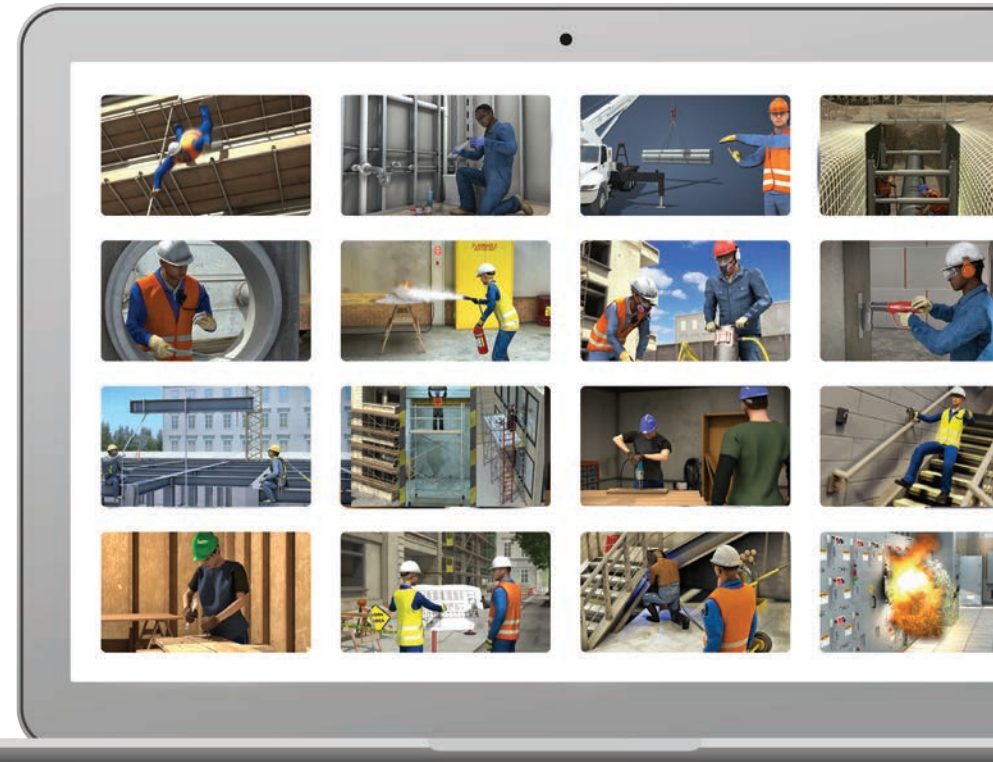
A STEP-BY-STEP GUIDE

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PART I

# INTRODUCTION

# INTRODUCTION

In this guide, we'll introduce you to a variety of issues regarding training and online training in your industry and give you some helpful insights and actionable tips as well.

This guide will cover:

- What is online training?
- Beginning your selection process
- Selection criteria
- Benefits of training programs
- Benefits of online training
- How to design and develop training
- Online training as part of your overall training program
- Blended learning

Although the overall intention of the guide is to help explain online training in your industry, we've provided a wealth of additional materials to help you consider all of your workplace training and learning needs and systems. We believe that additional information will help you in a general way but also help you determine the role that online training can play within those larger training and learning programs at work.

We hope you find this helpful. Good luck on your learning adventure.



PART II

# WHAT IS ONLINE TRAINING?

# WHAT IS ONLINE TRAINING?

You're reading this guide no doubt because you're interested in online training, but it may not be entirely obvious what online training is and what the different components are.

Plus, with new technologies, things are changing quickly.

So in this section, we'll give you a brief overview of online training, make sure you know what to focus on, and also give you some tips about things coming in the future.

## ONLINE COURSES

Online courses are the training content part of online training. They include things like video, still images, audio narration, practice exercises, tests, and more.

Traditionally, online courses came in the form of eLearning courses that you viewed by watching them through a software application called a learning management system, or LMS (we'll explain learning management systems more in the section below). And you can still get online courses

in the form of eLearning courses, and get all the additional functionality and power that comes from their pairing with an LMS.

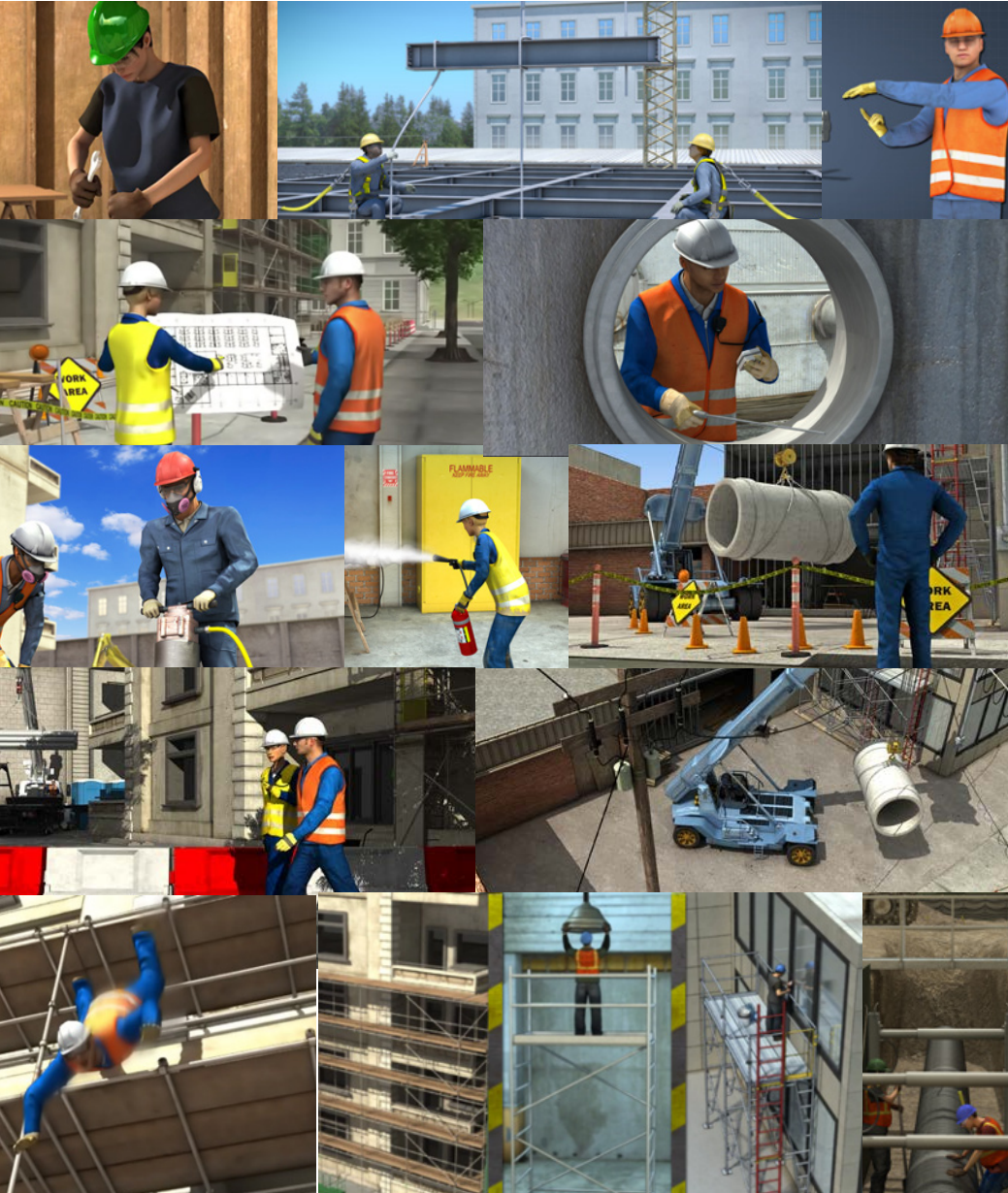
If you DO go the eLearning course option, it's good to know that eLearning courses are primarily produced to match one of three "standards" or formats:

- AICC
- SCORM
- xAPI or Experience API

There are two important things to know about this eLearning course format/standard issue. The first is that if you get an eLearning course in a given format, you need to make sure your LMS is compatible with that format as well (basically, you're looking for an easy, plug-and-play "handshake" between the eLearning course and the LMS).

The second has to do with which standard is most common: AICC is the oldest, it's still around, but it's increasingly uncommon and its makers no longer support it; SCORM is the most common and the current industry standard; and xAPI is the newest standard that's got some additional capabilities but isn't used as widely as SCORM, though maybe it will be in the future.





In addition to eLearning courses (delivered through an LMS), it's now becoming increasingly common and easy to simply watch an online course streaming from an internet website in the same way you watch a movie from something like Netflix. You won't get all the features and powers with streaming online training that you'd get from the combination of eLearning courses and an LMS, but there's something to be said for the ease and simplicity.

Click to see examples of [online workforce training courses](#) (available in eLearning or streaming video options).



# LEARNING MANAGEMENT SYSTEMS (LMS)

A learning management system, commonly called an LMS, is a software application that's used to manage your training program. It CAN be and is used for online training, but it's important to realize you can also use an LMS to manage many aspects of "offline training" as well.

What does an LMS do? Well, they're all different, and they all have different feature sets, but to keep things simple here, an LMS should allow you to:

- Import/create training
- Assign
- Deliver some training online
- Track completion
- Generate and deliver reports and notifications
- Store records
- Manage "offline" training, such as instructor-led training
- Create different training paths

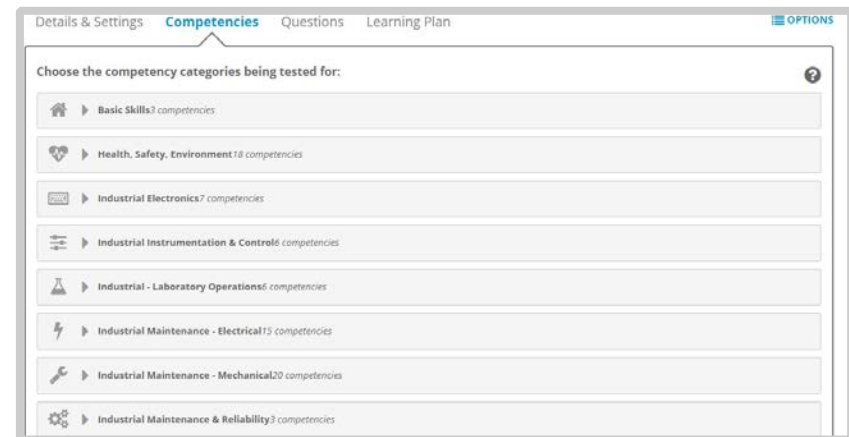
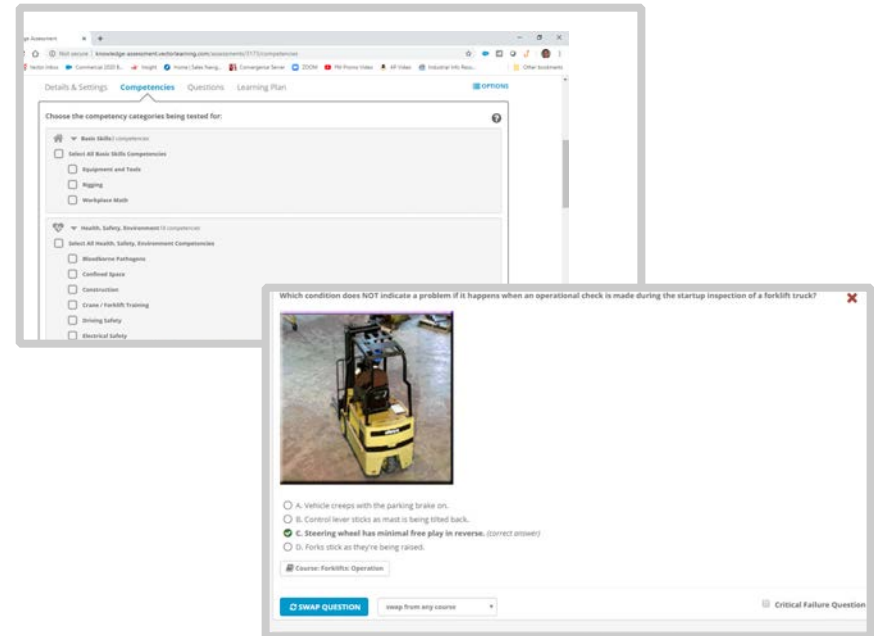
Check out this article to learn more about [learning management systems](#).



# KNOWLEDGE AND SKILL ASSESSMENTS

Learning management systems typically include some way to assess the knowledge of your workers, often through the completion of some form of assessment, as well as administer the assessment of the skills of your workers (although in many cases, those skill assessments will still take place through some form of face-to-face skill demonstration).

These knowledge and skill assessments can be used while evaluating potential new hires, when evaluating the knowledge and skill levels of employees compared to expectations for their current jobs, as well as to help determine if an employee is prepared and ready for the next job on his or her career path with your organization. Knowledge and skill assessment tools can also help you find employees who are qualified to perform job tasks that are not part of their ordinary work (such as at times when you're short staffed).



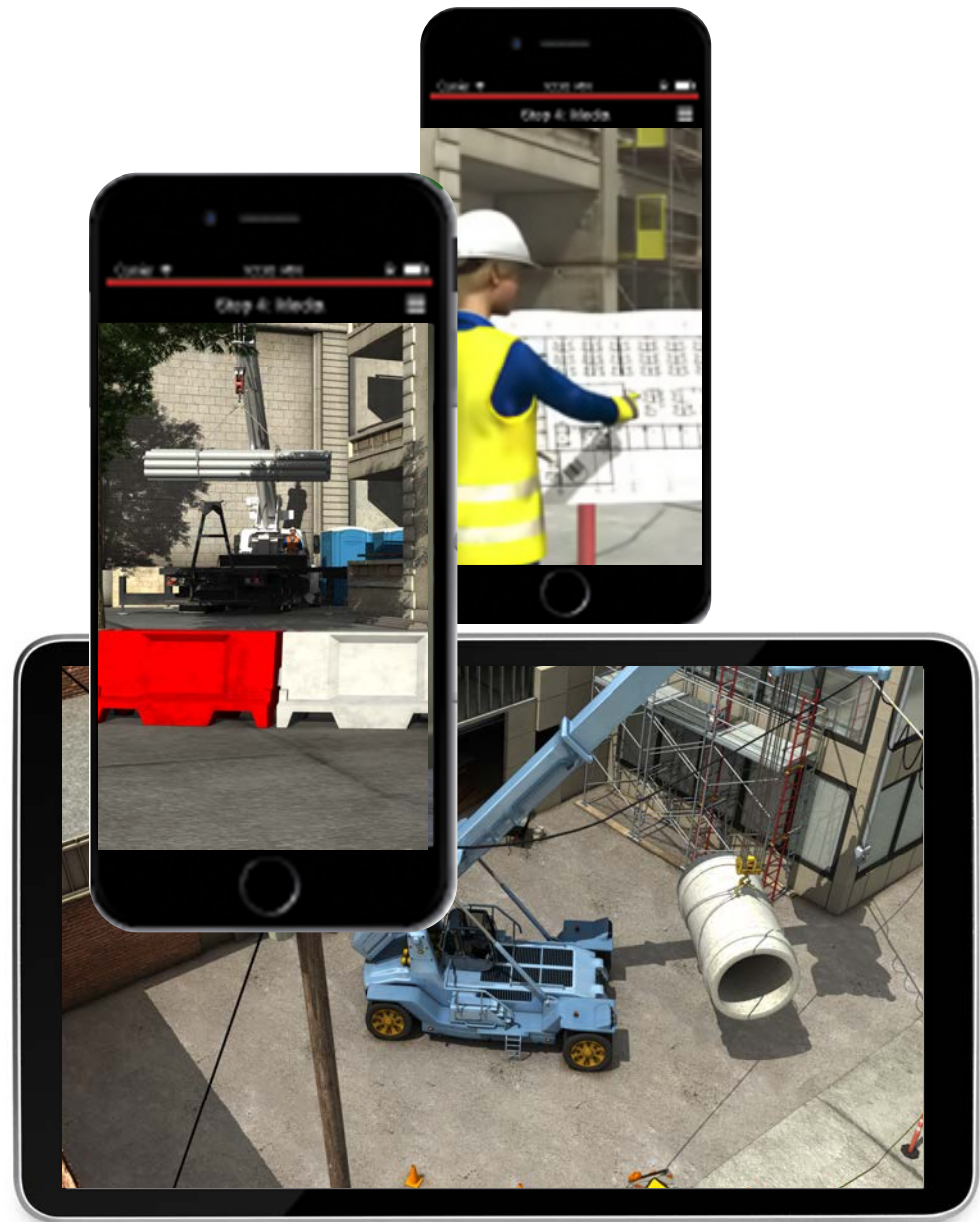
## MOBILE DEVICES & APPS

In today's world, we do a lot on our mobile devices—phones, tablets, and the like—and we often do that through an app.

Mobile apps are now available for training purposes and performance support as well, and often they have additional capabilities for making observations and reporting things.

If you're in the online training market, look into the mobile options the producer offers. Consider how the mobile apps and devices can be used for training, for performance support, and even things like incident reporting or making quality observations.

And when it comes to courses, make sure not only that you CAN view them on a mobile device, but that they've been designed to be viewed on a mobile device, meaning they're mobile responsive but also have things like bigger buttons that are easier to click.





## THE FUTURE IS NOW

Although we're focusing on online training courses, learning management systems, and mobile apps in this guide, it's worth knowing about some new technologies that are already beginning to change the online training world and will only continue to do so.

To that point, please be aware of these technologies and keep your eye on the Vector Solutions blog and website for additional information about these in the future:

- Augmented reality (AR)
- Virtual reality (VR)
- Chatbots
- Artificial intelligence (AI), including machine learning

For an introduction to all this, please read our [Disruptive Technologies in Learning & Development](#) article.



A grayscale background image of a construction site. In the foreground, a construction worker is seen from the back, wearing a white hard hat and a high-visibility safety vest. In the background, there is a multi-story building under construction with scaffolding and a worker on a lift platform. A "CAUTION" sign is partially visible in the bottom right corner.

PART III

# BEGINNING YOUR SELECTION PROCESS

# BEGINNING YOUR SELECTION PROCESS

At some point, you may decide your organization definitely wants to go ahead and get online training, and you'll wonder how to begin your search.

Once you've reached that point, when you know you want to add some online training tools and courses to your current training mix, we've got tips in this section that will help you.

The basics are these: get help, don't rush, know what you're looking for, and create a plan. But read on for more details.

## DON'T GO IT ALONE

You might be tempted to begin the search and even get online training materials on your own, but that would likely be a mistake.

First, because it can be a lot of work. Why not spread the load?

Second, because there are people in your organization who know things that you don't know and who can make a positive contribution to the search effort.

Third, because you're more likely to get buy-in from key stakeholders later, once the online training is up and running, if you seek and implement some of their advice and suggestions early in the process.

And fourth, because those same people who can help you make a good decision can also help you make your implementation a success. Or, if they're not invested, they can contribute to its failure either through passive non-involvement and disregard or even by actively sabotaging the program.

So, get some help and include people.



## BUILD A SELECTION TEAM

So instead of doing this all on your own, identify stakeholders at your organization, seek their cooperation, and create an online training selection team.

Stakeholders should include but not necessarily be limited to:

- Employees
- Corporate/top management
- HR
- L&D/training
- Operations
- Safety
- Quality
- IT

While it's probably obvious enough why each of these stakeholders should be included, we want to call out the importance of involving employees early in the selection process.

Employee participation is important for a few reasons. First, you want to find an online training solution that they like and that they find easy to use. After all, the training is for them to complete. If they help you identify training they like and can use, they're more likely to use it later.

And second, this will help raise awareness of the online training program throughout the employee population. This may seem surprising to you, but it's not super-unusual for a company to implement online training and have it either fail or be under-utilized simply because employees don't even know it's available. Getting employees involved in the selection process will increase awareness and that, in turn, will increase utilization once you have the online training in place.



## DON'T RUSH

Even if you've got a team in place, don't rush out and make a purchase too quickly. Take your time, seek advice internally and externally, determine what you need and what you want the online training program to do, and create a plan.

## PLAN IN ADVANCE

So our best advice to you is to plan in advance.

As mentioned, begin by creating a selection team. Get their initial opinions and advice. Then do some research and meet up again as a team to consider what you've learned.

From there, determine what it is that you want online training to do and how it fits into your overall training program (we'll cover this issue more later in the guide). Create a series of use cases—things you want the online training to be able to do.

Then evaluate different online training options to see how well they fit your use cases and your organization's overall online training needs.

### Use Cases

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PART IV

# SELECTION CRITERIA



# SELECTION CRITERIA

In this section, we'll walk you through some criteria for selecting online training courses, a learning management system, and training providers to help you find the best fit for your organization and your training needs.

## CRITERIA FOR SELECTING COURSES

Consider the following criteria when you're evaluating online training courses.

### Streaming or eLearning

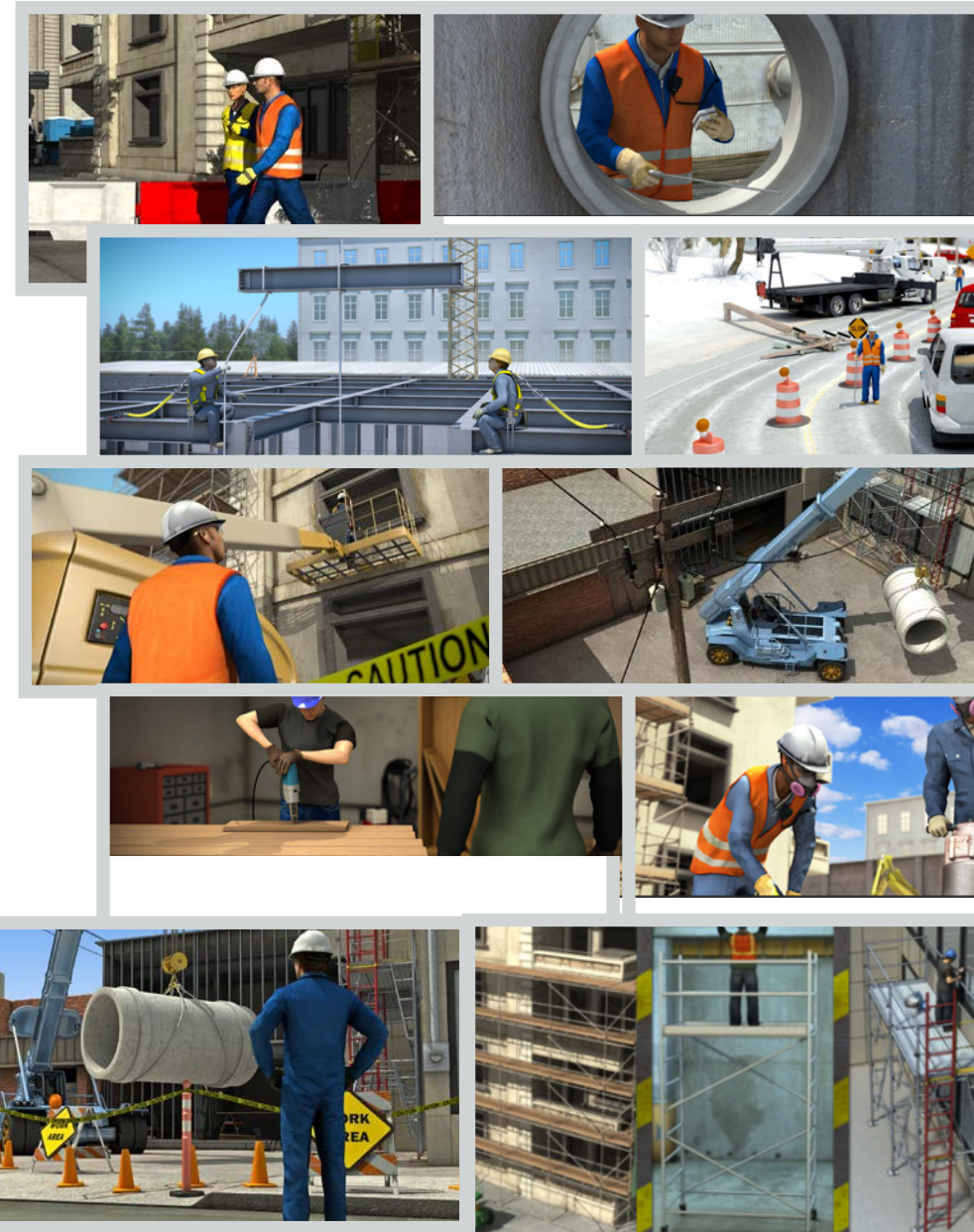
Do you want to go the Netflix-style streaming video route or use eLearning courses delivered through an LMS (and get the additional capabilities that come with an LMS)?

### If eLearning, SCORM, AICC, or xAPI?

Remember you'll want to be sure your LMS is compatible with your eLearning courses.

### Topics Covered

What topics do the courses cover and how well do they fit your organizational training needs?



## Teaching Real Job Tasks

While it's true that there's always some degree of pre-requisite knowledge that people may have to learn in order to perform job tasks, your training program can't end with knowledge. You've got to teach real job skills. Do the eLearning courses teach real job skills? Do they help set you up to do so?

## Instructional Design & Adult Learning Principles

Are the courses created following general evidence-based training practices, including the incorporation of adult learning principles?

## Shorter Is Better

A general instructional design principle to keep in mind is that shorter is better. Get eLearning courses that include necessary information but nothing more. In training, less is more.

## Visuals

A large portion of our brains is devoted to processing visual information. And eLearning is an inherently visual medium. To get a lot of bang out of your training investment buck, invest in eLearning courses with well-designed visuals.

## Writing

Written materials within the eLearning course, including the script for the audio narration, should be clear and concise. In addition, it should as much as possible match the normal conversational language of the training population (your employees). Stay away from eLearning courses that are unnecessarily formal or use big words and look for those that are conversational and casual. Bonus points for courses which refer to the employees using the word "you," as studies have shown this increases training effectiveness.

## Multi-Language Capabilities

There's a good chance you have a multi-lingual workforce. If you don't now, you may soon. Look into whether or not the eLearning course is multi-lingual, what exactly that means, and how the language is selected.

## Practice Questions & Assessments (Tests)

An eLearning course should include unscored practice questions and exercises that allow workers to test their knowledge and skills and provide instructive feedback. In addition, there should be a test with a required passing score. Following fundamental rules of instructional design, all of these should be based on the learning objectives.

## New & Updated Courses

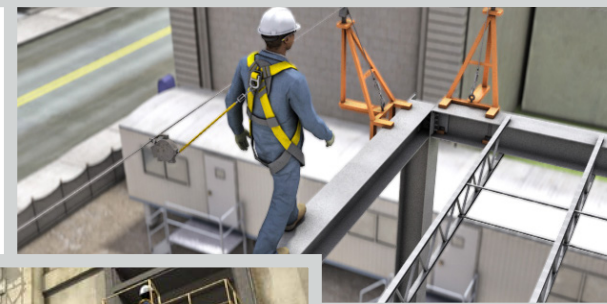
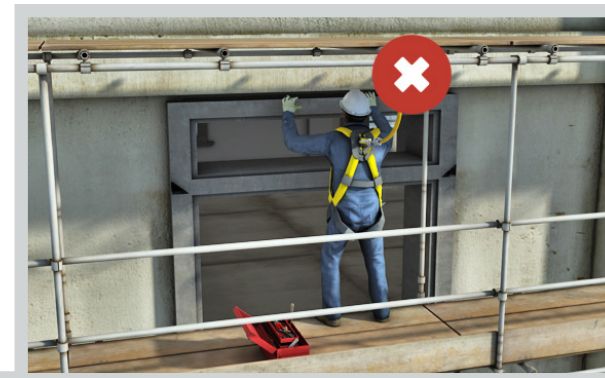
Once you get a course, will you get updates? When and how, and how much do updates cost? And what about new courses—do they come for free or is there an expense? And when and why are they created?

## The Fit With Your Organization's Overall Learning Strategy

Remember to consider how the eLearning courses you're evaluating fit within your entire organizational learning strategy. An eLearning course that's a good fit for one organization may not be the best fit for another organization.

## Mobile Compatibility

Consider if you want your courses to be mobile compatible and, if so, what that really means. Do you want courses that you can view on a mobile device? Do you want to view them through a browser and an LMS or through an app? Do you want courses that were specifically designed for the mobile learning experience with things like bigger buttons?



## CRITERIA FOR SELECTING AN LMS

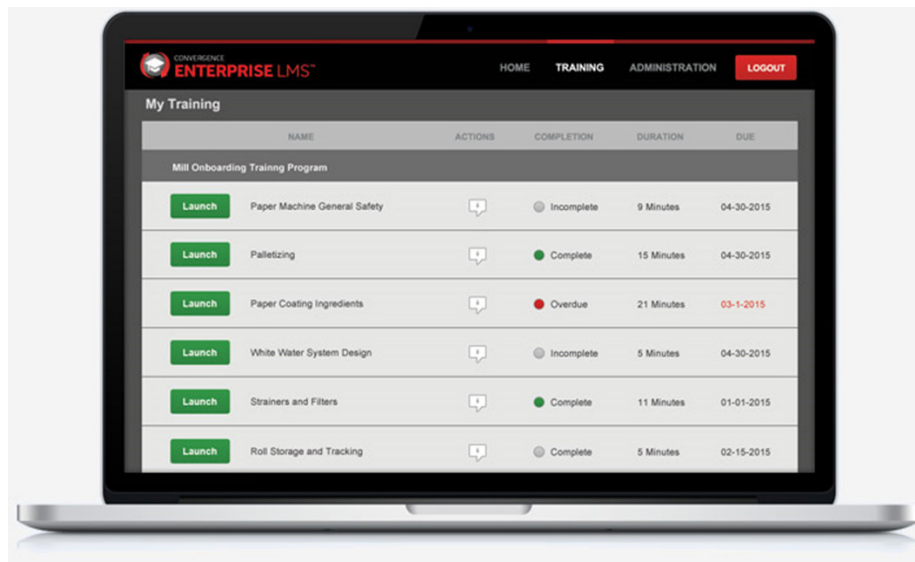
Consider the following criteria when you're evaluating a learning management system (LMS) for online training and other training administration:

### Your Network or the Cloud?

Do you want an LMS that's installed on your network or on the cloud? Both have their advantages, although the cloud is quickly becoming the most common option. Cloud-based LMSs are easier to update, require less IT support, and have other benefits.

### Easy User Interface

Without a doubt, one of the single most important factors in your LMS selection, and one of the reasons why your LMS implementation will either succeed or fail at work, is how easy and intuitive it is to use. This is true for the administrator experience and for the learner/employee experience, and it's especially true if your workforce isn't computer savvy. Get an LMS that's easy to use.





## Reporting

Reporting is one of the most important LMS capabilities. Closely investigate the types of reports an LMS can generate, including how you can modify them. Also check to see if the reports can be emailed to other workers and set up for recurrent generation and email delivery on a schedule. Reporting is important in all uses of an LMS, but even more so for compliance training.

## Integration with other Workplace Software Systems

It can be very helpful to have your LMS integrated with and “communicate” with other workplace software systems so they can share data. This includes your HRIS, your CRM, your ERP, your CMMS, webinar tools, and more.

## Security Roles

Learning management systems have security roles that allow specific powers and privileges to users (primarily administrators) within the system. It’s ideal to have an LMS with a set of preconfigured administrator security roles that allow different sets of powers (such as assigning training, crediting training completion, etc.) over different parts of your organization (over your entire organization, over just one site, over a single department, etc.).

## Availability of User Training (Admins & Employees)

An LMS provider should include user training for both admins and general employees (learners) in a variety of formats, including face-to-face, webinar, eLearning/web-based training, written materials, and more. See what the options are and how much it costs.

## Self-Guided Help

In addition to training, you’ll want an LMS that comes with self-guided help, reference materials, and/or other tools you can use to learn how to use the LMS on your own. This can include an online knowledge base, in-LMS help text and tips, manuals, and more.

## Customer Service

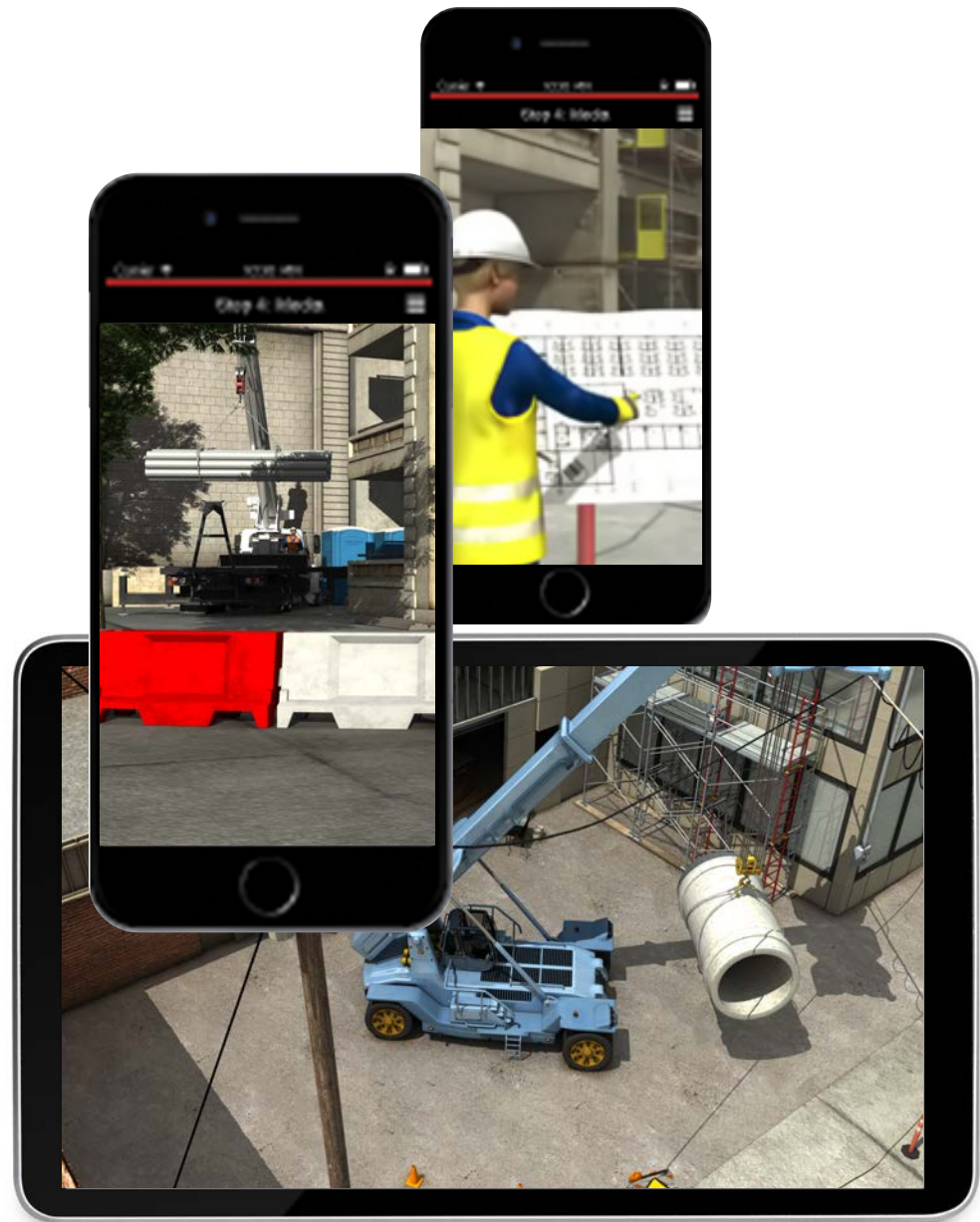
No matter how easy an LMS is to use, how good the initial training is, or how supportive the additional self-guided learning materials are, you’re probably going to want (and will benefit from) customer service at times. This includes during the initial installation and implementation but also after that.

## Availability of Updates

Yet another thing to think about has to do with updates to any LMS you get. Will it be updated? If so, when, how, how often, and does it cost? What types of things get included in updates? Can you request new features? If so, is there a cost for that? You'll most likely want an LMS that changes as technology and other considerations change.

## Mobile Apps

You may want to see if the LMS can be accessed on mobile devices and, more importantly, through dedicated mobile apps. And check out those mobile apps to see how well they work and how well they were designed.



## CRITERIA FOR SELECTING PROVIDERS

Finally, here's a set of criteria to consider when you're evaluating online training providers.

### Friendliness

You're going to be partnering with this company for a while. Are they friendly? Do you like working with them? This will matter.

### Responsiveness

From the moment you first try to communicate with them until the final moment of the sale, were they responsive? Was it easy to get a hold of them? Did they seem to value and welcome your communications and questions? When they told you they'd do something, did they do it and did they do it quickly?

### Helpfulness

Being friendly and responsive are great, but it's also essential to be helpful. Have you found the online training provider to be helpful in all aspects of the sales process? Do you anticipate they'll be helpful in implementation and customer support as well?

### Knowledge Level

This goes along with helpfulness—how knowledgeable is this company? In issues related to training, online training, and training for your industry, for sure, but in other related issues that may help your company as well?

### Range of In-House Expertise

Ideally, your online training provider has employees with a wide range of expertise in-house: instructional design, subject matter expertise, writing, graphic design, instructional design, programming, customer service, and more.

### Proven Track Record in Training for Your Industry

Do they have a track record of successfully helping organizations in your industry develop successful training programs?

### **Referrals from Trusted Third-Party Organizations**

Are there trade publications, trade organizations, or third-party organizations like Capterra or Talented Learning that recommend the company and their products/services?

### **Referrals from Current Customers**

Will the training provider let you talk with current customers, including current customers in your industry, to learn about the customers' experiences with the provider and their products?







PART V

# **BENEFITS OF TRAINING PROGRAMS**

# BENEFITS OF TRAINING PROGRAMS

It should go without saying that training programs have benefits that make them a worthwhile investment (and that repay that investment many times over).

That said, it definitely goes without saying that you'll want to make a solid financial argument in favor of any investment into training, including online training, for your organization..

We'll give you plenty of arguments to support the ROI in this section.

## RECRUITING AND HIRING ADVANTAGE

It's not always easy to hire a fully staffed organization. The fact is that people have options when they're in the labor market and you're competing with other employers.

Obviously, things like salary and benefits matter, and that's beyond the scope of this guide. But your potential new employees will also consider their career development if they take the job you're offering. How much will you support them as they gear up for the first job? What are the career growth options after that? How will you help them develop their skill set and further their careers?

Having a training program in place will help you attract better workforce talent to your workplace. Isn't that what you want? And considering the cost of making a new hire, this is significant.



## IMPROVED, FASTER, MORE EFFICIENT ONBOARDING

Once you've made that new hire, you'll want to quickly and effectively onboard the new worker to get him or her up to speed.

That's going to include HR paperwork and explaining your company's values, missions, goals, and culture. And you can use an LMS and online training for some of that. But it's also going to include training for your entry-level job position(s).

That need for training is even more serious now than it was in the past for two reasons. First, because a lot of new hires don't have the technical know-how and skills that new hires in previous eras used to have. And second, because modern workplaces involve lots of new technologies that weren't a consideration in the past.

By providing effective training to help onboard your new hire more efficiently, you'll speed the new employee's development from novice new hire to entry-level competence, which will obviously help your entire organization. Additionally, you'll decrease the risk of having a new hire quit the job because he or she doesn't feel supported, adequately prepared, or valued by your organization. And remember, losing new hires and having to go out and hire a replacement is a very expensive proposition.



## INCREASED KNOWLEDGE RETENTION

In general, people need some pre-requisite knowledge to perform job tasks and they need to develop the skills to perform those tasks.

A well-designed training program can help workers acquire that knowledge and, even more importantly, retain it more effectively so they can later use that knowledge on the job.

Even better, a really well designed training program will include not just job training but also job aids and/or performance support so an employee won't have to remember things but can instead access that information at the time and place needed in the form of something like a checklist or video.

## DEVELOP SKILLS AND FILL SKILL GAPS

Of course, you don't just want to help workers to KNOW things, you want them to learn to DO things. The tasks required to perform their jobs, in particular.

We've already noted that many new hires come to work without all of the necessary skills even an entry-level employee needs, and you probably knew that already on your own.

Your goal in training employees is to teach them necessary job skills quickly, efficiently, completely, painlessly, and with a minimum of work and expense.

If you don't provide training, you're simply hoping workers will develop those skills over time. Maybe they will and maybe they won't, but it's highly unlikely they'll develop them as quickly and comprehensively as they would with a proper training program.





## CAPTURING AND DISTRIBUTING KNOWLEDGE OF RETIRING EMPLOYEES

Another benefit of having a robust training program, and one that's more important in today's world, is that it gives you the opportunity to more efficiently capture the knowledge of current, experienced workers who are preparing for retirement and then distribute that knowledge through the rest of your workforce before it's lost forever.

This capturing and distributing of knowledge and skills before they're lost can be eased in many ways with new digital technology and online tools, such as video, digital images, and PDFs, as well as the ability to distribute those online.





PART VI

# **BENEFITS OF ONLINE TRAINING**

# BENEFITS OF ONLINE TRAINING

We covered the benefits of a training program in general in the previous section, so in this section we'll focus on the benefits of online training.

Online training (whether for maintenance, or safety, or operations, or HR, or...you get the idea) has a number of unique positive benefits. In this section, we'll list just a few benefits for your consideration. We'll divide those benefits into:

- Benefits to the organization
- Benefits to department & training managers
- Benefits to employees

Of course, in some cases the division is a bit arbitrary, and a benefit to one group also benefits another, so keep that in mind as you read.



## BENEFITS TO THE ORGANIZATION

The organization as a whole will see many benefits from the addition of online training for employees.

Obviously, a key benefit is that because workers will be better trained, operations at your organization will improve. This will increase productivity, efficiency, quality, safety, profitability, and innovation and will decrease waste, inefficiency, and costs. That training improvement will come about in a few ways.

First, because online training is more scalable, meaning it will be easier to training all employees, including employees on different shifts, at different locations, and employees who work remotely.

Second, online training provides a consistent, standard training message, something that's hard to do with one instructor leading instructor-led training and essentially impossible to do with multiple instructors.

Third, by allowing your organization to make use of a blended learning solution, which leads to more effective learning outcomes (please see the discussion of blended learning later in this guide for more on that).

Additionally, by using the reporting functionality of a learning management system (LMS), it will be easier to identify employees who are untrained and/or have skill gaps, and it will be easier to identify employees with all the training, knowledge, and skills necessary for specific job roles.

Next, online training will also help you reduce the overall cost of your training program, especially by cutting down the costs associated with travel, overtime, food & drink, and room rentals, not to mention the costs of administering your program (clerical, logistics, scheduling, etc.).

On top of that, if your organization values sustainability and a commitment to the reduction of greenhouse gases, adopting online training tools will help you reduce the carbon footprint of your training program by reducing travel associated with training.

And finally, in a global era that's vulnerable to pandemics, implementing online training is an important risk management technique to be better prepared for times when a spreading pandemic necessitates that people practice "social distancing." Is your company fully able to continue training programs safely during a pandemic? It's something to think about.

## BENEFITS TO DEPARTMENT & TRAINING MANAGERS

Department managers, training managers, and others involved in training personnel stand to benefit from adopting online training in the many ways.

Partnering with an online training provider will give you access to more topic expertise. None of us are experts in everything, so why not focus on creating training materials on topics you DO know well and getting training materials from others on topics you're not as well-versed on?

Additionally, getting online training materials will typically give you materials with better instructional design than the materials you're likely to create on your own (assuming you don't have a background or degree in instructional design). Training providers have professional instructional designers on staff who understand how adults learn and how to best develop training materials to match those learning needs—why not get access to that expertise?





You'll also benefit from easier and faster course updates when you've partnered with a training provider that has an entire staff devoted to keeping track of changes (to things like regulations, new technology, and best practices, for example) and updating course materials. Just think of how time consuming it is for you to update your own training materials and/or how old, out-of-date, or inaccurate many of your own training materials may currently be. Why not get help staying current?

Implementing online training will also save you a lot of precious and valuable time. You'll spend less time creating and updating some of your own training materials, as noted above. You'll spend less time leading training sessions when you're presence doesn't bring additional value. You'll spend less time traveling back and forth from training sessions you lead, either at the other end of the facility, at a different facility, or across the nation or globe. And you'll spend much less time on the clerical, logistical, and recordkeeping aspects of training, so much of which can be facilitated or even automated with the training management capabilities of a learning management system. Why not save all that time to create training materials you are an expert in, to deliver training when your presence is really valuable and meaningful, and of course to conduct other important job tasks beyond training as well?

One last benefit to consider is that online training can be accessed by employees for performance support at the moment of need on the job, when and where they need the information. This means employees won't have to rely on what they remember from training, which may have happened weeks or months ago. And it means they won't be faced with a situation where they're on the job, realize they need some additional information to complete the job, and either don't know where to find that information or don't want to talk a long distance to get it, and so they take their best guess instead of confirming they're doing the right thing. You want employees doing the right things on the job, and giving them access to information when they need it will help them do this.



## BENEFITS TO WORKERS

Of course, it's not just the organization and managers who benefit from training and online training. Employees benefit, too. In fact, isn't it employees who are the primary beneficiaries of training materials developed by employees, since they benefit from learning?

We've listed a few of the primary ways employees will benefit if you implement online training at your organization below.

The first benefit is that online training puts workers in charge of at least some of their training. Remember that two of the principles of adult learning are that adults enjoy being in charge of their own learning and that they learn when they're motivated to learn. Providing online training to workers means they can complete at least some of their training on their own schedule, when it's not convenient for them and not just when it's most convenient for the trainer or for the whole classroom. It also means that workers can complete training at their own preferred pace, allowing some people to proceed more quickly while others take more time, perhaps reviewing key screens a time or two before moving on to make sure they've understood a key point.

Online training also allows people a "safe environment" to learn in. While some people are very comfortable making mistakes or saying the wrong things in front of a manager or in a classroom setting, others are not. Online training allows employees an opportunity to get up to speed without having to worry about how others might react should they make a mistake. Of course, online training can also allow a worker to practice a skill in a safe, simulated environment that doesn't present the real-world risks that would be present in the real work world, too.

A final consideration is that having online training available to employees makes it easier for employees to take and complete not only assigned training but to complete training on a self-guided, elective, voluntary basis. This may include training that's just of general interest to the employee, but it might also include training that allows the employee to prepare for and develop qualifications for the next job in his or her career path.





PART VII

# **ONLINE TRAINING AS PART OF YOUR OVERALL TRAINING PROGRAM**

# ONLINE TRAINING AS PART OF YOUR OVERALL TRAINING PROGRAM

You're wise to consider an investment in online training for your employees, but it's equally important to remember that your training program should include more than just online training.

In this section, we'll introduce you to some ideas to help you create a more well-rounded, effective training program.

## LEARNING ORGANIZATIONS

High-performing organizations make a dedicated commitment to increasing learning in all parts of their organization, to sharing that learning throughout the organization, and to finding every way the organization can benefit from all that learning. Organizations that do this are known as learning organizations.

SUPPORTIVE LEARNING  
ENVIRONMENT

CONCRETE LEARNING  
PRACTICES AND  
PROCESSES

LEADERSHIP THAT  
ENCOURAGES AND  
REINFORCES LEARNING



One influential paper on learning organizations suggests they have three major traits or characteristics<sup>1</sup>:

- Supportive learning environment, including psychological safety; an appreciation of differences; an openness to new ideas; and time for reflection
- Concrete learning practices and processes, including experimentation to develop and test new products; keeping track of trends with competitors, customers, and technology; analysis and interpretation to identify and solve problems; and education and training for new and established employees
- Leadership that encourages and reinforces learning, including asking questions of and listening to workers; stressing the importance of and spending time on problem identification, knowledge transfer, and reflection; and considering alternative points of view

Note that providing training is definitely included within these characteristics although it's not enough on its own to get your organization there. As you read on, we'll point out how online tools can assist not only with training but also with things like problem identification, knowledge transfer, and reflection.

For more on this, check out [What Is a Learning Organization?](#) and How to [Become a Learning Organization](#).

<sup>1</sup>See Garvin, D.; Edmonson, A.; Gino, F. Is Yours a Learning Organization?

## LEARNING ECOSYSTEMS

There are many different ways that people learn at work. Formal, assigned training is one of those, but it's not the only one.

If you want to facilitate learning at your organization, you'll want to do all you can to improve training but also facilitate learning and knowledge share in the following manners:

- **Formal, assigned training:** This includes onboarding training, regular training of employees, joint educational programs with community colleges, conferences, and more. Obviously, online training can be part of this.
- **Informal learning:** This includes learning that happens while employees are doing their jobs, social learning as employees interact with one another and share ideas, and mentoring programs. Online tools, such as discussion boards, chat tools, and user-generated training content can be part of this.
- **Performance support:** Performance support includes reference materials and other tools employees can use while on the job (instead of during training) to perform their jobs more effectively. Online training systems often include tools to assist with performance support to help workers where and when they need it on the job.

- **Management guidance and feedback:** Managers can also have a great influence on the learning of individual employees and learning within an organization as a whole. Managers can help facilitate learning by helping employees set learning goals, providing support and feedback, and more.

### FORMAL:

Onboarding, Instructor-led,  
Online, Conferences, School/  
Community College, Certifications

### INFORMAL:

On the Job, Social, Mentoring



### MANAGEMENT, GUIDANCE & PERFORMANCE:

Discussions, Q&A,  
Performance Reviews

### PERFORMANCE SUPPORT:

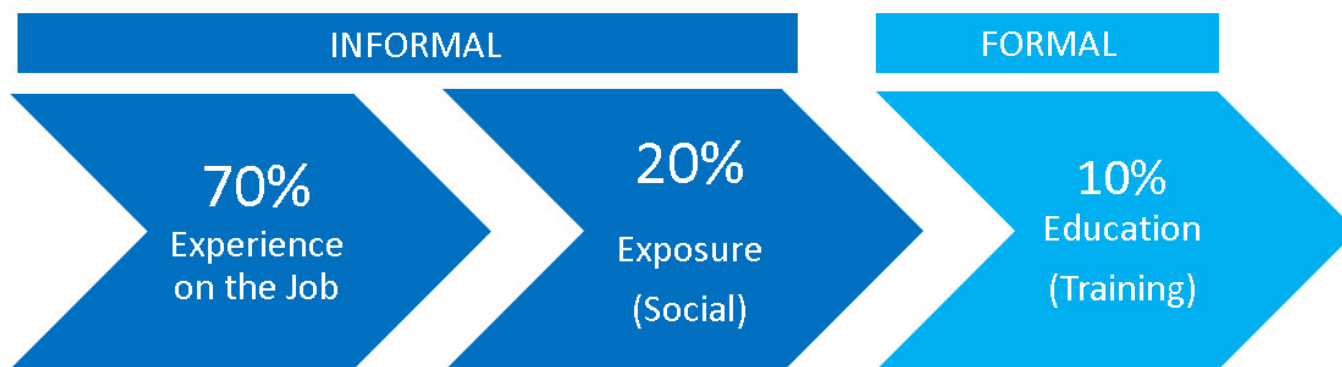
Checklists, Mobile Learning,  
other Job Aids

## 70/20/10 AND/OR THE THREE E'S

According to the 70/20/10 model of workplace learning, employees learn a lot of what they know about their jobs through workplace experience (the 70%), less through social learning, which means interacting with their coworkers (the 20%), and even less but still a significant amount from formal, assigned training (the 10%).

The actual numbers named in the 70/20/10 model are disputed, and there's no real data behind them. That's why some learning professionals are now referring to this idea as the Three E's—Experience, Exposure, and Education. So ignore the percentages, and instead think about the general idea. Isn't it true that, in addition to formal, assigned training, employees at work learn a lot through experience (direct learning that occur on the job) and exposure (learning from their coworkers)? We imagine you'll agree with this general idea.

## 70/20/10 MODEL



As a result, while training managers do need to think about, design, develop, and deliver formal assigned training, it's also wise to think about how we can facilitate and support the learning that employees do while on the job or with their coworkers.

Online learning can be used for formal, assigned learning, of course. And maybe that is the primary reason you're considering online learning and are reading this guide. Fair enough.

But online learning and training tools can also be used to facilitate the learning that workers do directly on the job as well as the learning that occurs as workers share knowledge and help each other develop new skills. For example, workers can use mobile devices while on the job to retrieve information from an online learning portal at exactly the

time and place they need that information. Or, your online learning platform can include a wiki or discussion board to allow workers to exchange ideas and share information, or allow workers to upload their own user-generated training content (such as a how-to video explaining a job process), or the platform can make it easier for a worker to identify someone at work who's been designated an expert on a specific workplace topic or issue.





PART VIII

# BLENDING LEARNING

# BLENDED LEARNING

If you're planning on using online training at work, it's important to know (1) using online training can be very helpful and (2) you shouldn't use ONLY online training at your workplace.

Instead, learning researchers and professionals recommend what's called a blended-learning solution for job training. In short, that means using both traditional forms of face-to-face training (instructor-led classroom training, field-based training, etc.) along with online training.

Many studies and meta-studies have shown blended learning provides better instructional outcomes than training solutions that use solely face-to-face training or solely online training. Here are a few sources for you to consider:

"The difference between student outcomes for online and face-to-face classes—measured as the difference between treatment and control means, divided by the pooled standard deviation—was larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face."

US Department of Education

"Evidence from hundreds of media comparison studies... suggest[s] that blended learning environments are more effective than pure classroom or pure digital learning..."

— Dr. Ruth Colvin Clark

"Overall, these meta-analyses found that eLearning tends to outperform classroom instruction, and blended learning (using both online learning and classroom instruction) creates the largest benefits."

– Dr. Will Thalheimer



LEARNING

## WAYS TO BLEND

There are many ways to blend training to create improved learning outcomes. You can buy long books on the topic and we've included a link further down to a free guide on the topic as well.

That said, here are four easy ways to think of the timing of your training delivery methods when creating a blended learning solution.

### 1. Online Then Instructor-Led Training

One way to blend is to assign workers online training to complete in a self-guided manner before they attend instructor-led training in a classroom setting.

This allows you to use the online learning activities as a way to introduce pre-requisite knowledge and then practice job skills that require that knowledge during the instructor-led training.

It also allows you to use the sophisticated visual capabilities of online training to explain things like how machines work and/or your company's basic job procedures and processes (studies show that videos are very effective for learning this type of material).

### 2. Online During Instructor-Led Training

We've all learned that peanut butter and chocolate taste great together, and mash-ups are a big cultural craze. So why not apply the same basic idea to job training?

There's no reason why you can't hold an instructor-led classroom training session and introduce elements of online training during the class session.

During the class, you can play online training materials intermittently and then discuss the online materials with the class. This can be a great way to discuss a process, procedure, concept, or idea presented during the online training, or a great opportunity to demonstrate and then practice a job task illustrated in the online training.

### 3. Online After Instructor-Led Training

You can also choose to begin with instructor-led training and then follow that up with online training (perhaps just one online training activity or, more likely, several activities).

You can use the online training for a few reasons. First, to help workers continue to learn additional "chunks" of information that build upon the initial training over time as they develop toward expertise. And second, as a form of spaced-practice to help combat the training forgetting curve.

The use of online training delivery and materials for post-training spaced practice is one very effective use of what's commonly called microlearning.

For more on spaced practice and the forgetting curve, read this article on [The Forgetting Curve](#), this article on [Spaced Practice](#), and this interview about the [evidence behind the effectiveness of spaced practice](#).

#### 4. Online Performance Support After Training

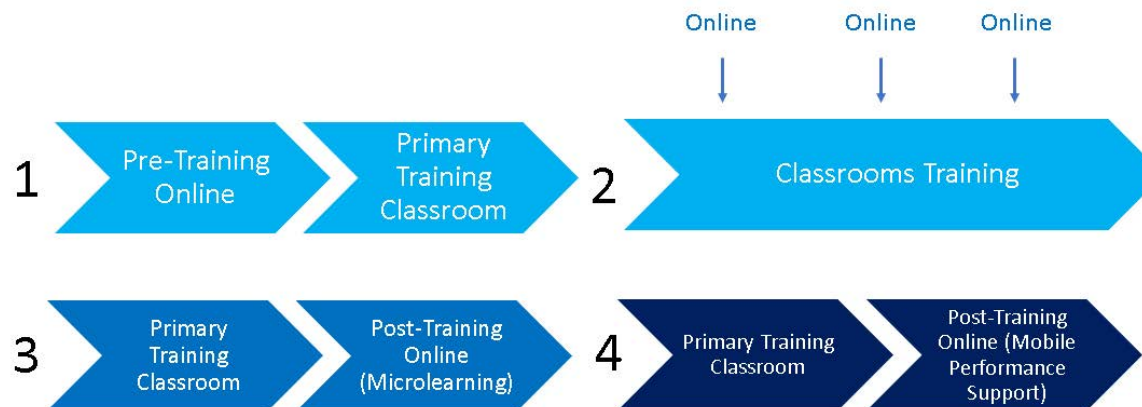
Another thing to consider is using some of the same tools and materials you use for online training not for training per se but to deliver performance support to workers in the

field at the moment of need to help them make the correct decisions and perform tasks properly.

Examples include delivering checklists, visual SOPs, and/or videos to the worker via a mobile device, such as a phone or a tablet.

For more on this idea, read our articles on [Job Aids](#) and [Using Mobile Devices for Training & Performance Support](#).

## 4 WAYS TO BLEND TRAINING





## ADDITIONAL CONSIDERATIONS FOR BLENDING YOUR LEARNING SOLUTIONS

Two other things to think about when designing learning blends for your employees are:

- The type of content you want them to learn
- The reason the employees need to learn something

First, let's consider the type of content your employees need to learn and, in particular, how online training might help.

**1. Facts:** An example of a fact is "this is door 1." And the fact is that human brains aren't very efficient at simply memorizing facts. So if you can, try to reduce the number of facts that employees have to remember from training. One way to do this is by providing job aids for performance support, and mobile devices and online training tools can be helpful here.

**2. Concepts:** A concept is a group of things that have something in common. For example, "All of these are different types of pumps." You could use online training to present different examples and non-examples and ask employees to decide if they are examples of the concept or not.

1

Facts

2

Concepts

3

Processes

4

Procedures

5

Principles

6

Far-Transfer

**3. Processes:** A process is how something works. Research shows that video of the type that you can deliver online is an effective way to help learn processes.

**4. Procedures:** A procedure is how a person does something. Research shows that video of the type that you can deliver online is an effective way to help learn procedures, although additional hands-on practice is also very helpful.

**5. Principles:** Principles are a broader set of guidelines one applies in various circumstances. For example, “lean manufacturing is the attempt to increase value and drive out waste.” One could use online training in a variety of ways to teach something as broad as principles (and, as you can imagine, learning principles will probably include learning some facts, concepts, processes, and procedures).

**6. Far-transfer:** Far transfer means learning something to use in one context and, on your own, discovering a way to apply this in a different context. Far transfer isn’t especially common, to be honest, and there’s not a lot of great research on how to facilitate it. But it does often spring from great experience and expertise, and in some cases, that experience and expertise can more quickly be gained by running through the kind of scenario-based training that online training can deliver.

For more on this, read our [Different Types of Training for Different Types of Learning](#) article.

Next, let’s consider the reason the employees need to learn something and how online training might help (this is drawn from the Five Moments of Need Training model by Bob Mosher and Conrad Gustafson).

- Learning for the first time
- Learning more
- Remembering and applying
- When things go wrong
- When things change

Let’s give some thought to how online training can be used in each of these training moments of need.

**Learning for the first time:** Online learning can always be used when teaching employees something for the first time—preferably as part of a blended learning solution.

**Learning more:** Online training can be especially effective once you’ve completed the primary training on a topic and want to continue teaching employees more to build on that initial knowledge. That’s because online training is so easy to distribute to your workers because it’s not necessary to come together again in a large classroom setting, which of course makes it easier for workers to complete the additional training and learn more while also completing their jobs.

**Remembering and applying:** Online training can be especially important in helping workers remember information and skills from the initial training session and build on the knowledge/skills. One reason for this is because of something known as the “forgetting curve,” which is based on the proven fact that people tend to forget things from an initial training if they don’t get to continue working with the topic. Online training can be used to deliver periodic “bursts” of training on the initial topic in a training practice known as spaced learning.

LEARNING FOR FIRST TIME

LEARNING MORE

REMEMBERING AND APPLYING

WHEN THINGS GO WRONG

WHEN THINGS CHANGE

**When things go wrong:** When something goes wrong, you will often want to correct it quickly. And since it can sometimes take a lot of time and work to schedule, arrange, and conduct face-to-face training, online training can be a great assist in helping you deliver training to workers to fix that problem ASAP.

**When things change:** Online training can be used to deliver new training when things change in the same way it can be used to deliver any training on new topics. And again, remember it's most effective in a blended learning solution.

And for even more on blended, see our [Blended Learning Best Practices](#) article and download our [Blended Learning Beginner's Guide](#).



PART IX

# CONCLUSION

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# CONCLUSION

We hope you found this guide to selecting the best online training solution, including courses, learning management system, mobile apps, and providers, helpful.

Good luck on your search and feel free to contact us if you need some help or have some questions!

# WORKPLACE TRAINING & PERFORMANCE SOLUTIONS FOR THE AEC INDUSTRY

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