A Comprehensive Guide To Modern Manufacturing Training
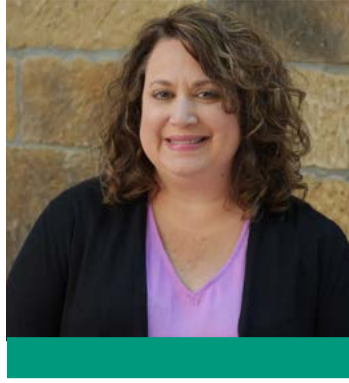
Important Topics And Essential Technologies You Need To Know

Roundtable
L E A R N I N G

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Welcome to Roundtable Learning's comprehensive guide for modern manufacturing training.

The manufacturing industry faces a unique set of challenges when it comes to training. With an unprecedented skilled labor shortage and machinery that continually advances, it's critical that employers in this industry are providing ongoing development.

By doing so, your employees will be kept safe on the job, be more productive, and are more likely to remain with your organization long-term.

As a full-service learning partner that's experienced in creating training programs for supply chain, manufacturing, and distribution organizations, we know what it takes to successfully develop and implement successful manufacturing training.

In this guide, we'll show you the value of training in the manufacturing industry and how technology can enhance your manufacturing training program.

Let's get started!

Why Is Manufacturing Training Important?

While manufacturing training covers a wide variety of topics that prepare employees for the job, this training ultimately fuels an organization's ability to innovate and grow.

When organizations invest in the ongoing development of their workforce, they ensure their employees are up-to-date on the critical functions of their role, efficient and safe while on the job, and satisfied with their organization.

KEEPS EMPLOYEES SAFE ON THE JOB

Training employees on how to safely operate and repair complex equipment keeps both them and their coworkers safe while on the job.

By training employees on safety topics, organizations can lessen the number of workers compensation claims and ensure everyone is protected from potential hazards and safety incidents that may arise.

INCREASES EMPLOYEE AND PRODUCTION EFFICIENCIES

As a direct result of manufacturing training, employees are less likely to make mistakes, which leads to increased efficiencies and production.

With a more efficient workforce, organizations increase their output and better meet customer demands.

BOOSTS JOB SATISFACTION AND EMPLOYEE RETENTION

Without comprehensive training, organizations risk losing 25% of new hires within the first year.[1]

Training combats this by demonstrating an organization's investment in the ongoing development of employees, which creates more satisfied, long-term employees.

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[1]HR Daily Advisor (2019), The Critical Link Between Effective Training and Retention

Common Manufacturing Training Topics

Manufacturing training looks different across organizations, but typically includes these 4 training topics: **onboarding, equipment knowledge training, process training,** and **safety training**. Each of these training topics come with their own unique objectives to prepare employees for the job.

New Hire Onboarding

Organizations with a standard onboarding process experience **54% greater new hire productivity** and **50% higher retention rates**.[2]

Onboarding can be as simple as a checklist for the first week or as robust as a 90-day program on an online portal. Either way, onboarding is critical in starting your new employees off on the right foot.

To onboard your new hires, your organization should consider completing any of the following steps:

- Digitize new hire paperwork
- Send first day information
  (e.g. parking and entrance information, an organizational chart, and a first week schedule)
- Send an organization-wide announcement
- Prepare a welcome gift and personalized note
- Assign an employee mentor

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VIRTUAL REALITY FOR DISTRIBUTION CENTERS

Technical Training Demo

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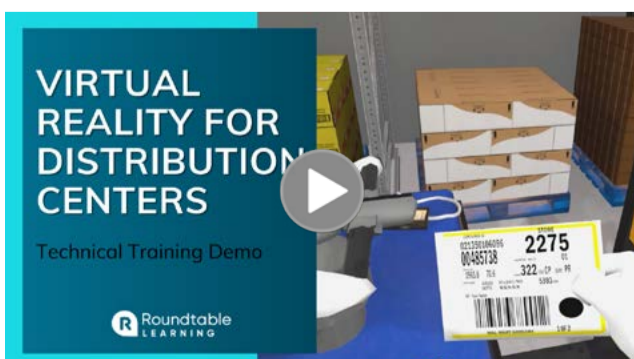
Equipment Knowledge

Equipment knowledge training ensures safe and proper handling of manufacturing equipment.
(e.g. machining tools, drilling equipment, computerized machines, and grinders)

Through equipment knowledge training, your organization can ensure your employees have the hard skills needed for accurately operating and repairing equipment.

Equipment in the manufacturing space is constantly advancing due to new technology. By supplying employees with comprehensive equipment training, your organization will ensure your workforce has opportunities to grow their existing equipment skills and develop new ones.

Reskilling and upskilling your workforce on new and existing equipment ensures they can safely, efficiently, and confidently handle complex manufacturing equipment.

[2]UrbanBound (2018), [Infographic] The Onboarding New Hire Statistics You Need to Know.

Process Training

Manufacturing heavily relies on complex processes to transform raw materials into a final product. Processes in the manufacturing industry may include any of the following steps:

- Product Design and Prototyping
- Machining
- Shearing
- Joining *(e.g. welding, epoxy)*
- Casting and Molding

Regardless of the exact processes an employee may complete, this training is critical for teaching them how to correctly and efficiently complete the correct processes specific to their role.

Process training gives organizations a chance to teach complex processes and allow for hands-on training that helps employees work at full capacity. With smooth processes comes smooth business operations and improved output.

Safety Training

Safety training teaches your employees best practices to keep themselves and others safe while on the job. Safety training in the manufacturing industry may cover any of the following topics:

- **Basic Hazard Recognition** - Employees must evaluate whether a particular situation, item, or process has the potential to cause harm.
- **Slips, Trips, and Falls** - Employees learn how to stay safe in their work environment by preventing slips if they lose their footing, trips if they accidentally hit something, or falls onto objects or off equipment.
- **See Something, Say Something** - Employees gain awareness about violations of workplace safety and learn how to prevent worse behaviors or activities from occurring.

Safety training is critical to creating a workforce that's knowledgeable of protocols and prepared when safety incidents arise.

Key Benefits Of Using Technology For Manufacturing Training

Have you ever considered elevating your traditional manufacturing training through technology? By doing so, you can experience the following benefits: **protect property and assets, avoid the need for real-life equipment and subject-matter experts, reduce the number of learner mistakes on-the-job, provide realistic hard skills practice, and ensure long-term knowledge retention.**

Protect Property, Assets, And Employees

Protect your property, assets, and employees by allowing learners to practice their job functions without real-world risk. Through interactive technologies, including augmented reality (AR) and virtual reality (VR), your organization can recreate any of the following:

- Complex equipment
- Real-life work environments
- Hazardous situations
- Intricate processes and technical tasks

These simulated training activities are guaranteed to keep both your employees and equipment safe. With future learning technologies, learners can feel comfortable taking risks and learning from mistakes without damaging real world equipment and risking the safety of others.

Avoids The Need For Equipment & SMEs

Using technology for manufacturing training avoids the need to occupy real-life equipment. Technology, such as VR and AR, can simulate real-life work environments and digital objects. By doing so, training becomes more accessible and scalable across an organization without jeopardizing real-life equipment.

For example, organizations can create a video learning activity where learners hear from equipment experts themselves and watch as they explore various processes and equipment.

In addition, training programs with integrated technologies avoid the need to repeatedly reach out to subject-matter experts for information. Once training programs are developed around subject-matter experts' knowledge in a particular area, they won't need to be utilized again unless updates to content must be made.
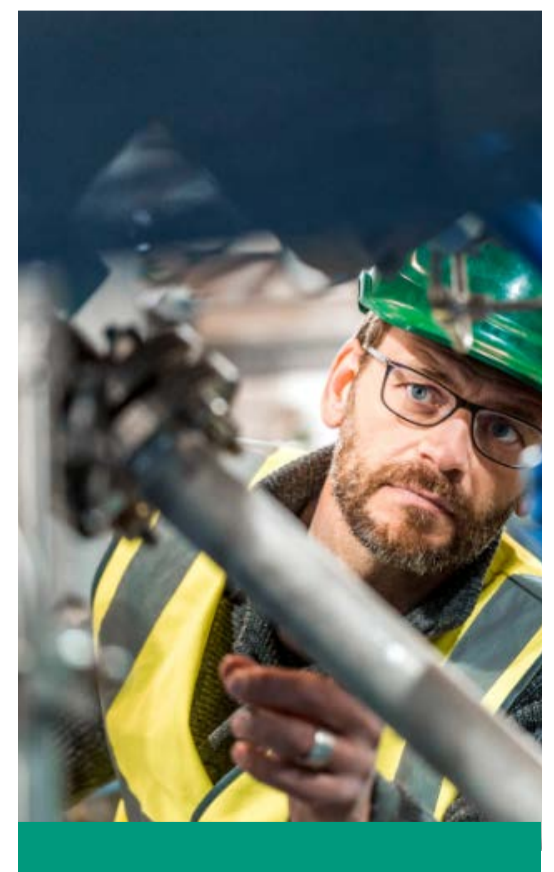
Reduce The Number Of Mistakes On-The-Job

Each mistake that an employee makes during training is a learning opportunity. With manufacturing training that utilizes technology, employees can make and learn from mistakes that feel realistic before actually stepping foot on the job.

With technology, learners complete activities that test their knowledge of processes and reactions to hazardous situations. By incorporating live feedback and tips based on their decisions, employees can learn how to address mistakes and work more confidently.

Provide Realistic Hard Skills Practice

Hard skills are job-specific technical abilities that indicate an employee's capacity to complete certain tasks in their role.

Examples of hard skills in manufacturing include:

- Welding, Machining, Fabrication, etc.
- Quality Control
- Lean Manufacturing
- Computer Application Programs

Realistic hard skills practice allows learners to complete and repeat activities that develop hard skills specific to their role.

For example, learners can launch an AR activity that places a digital recreation of an engine on the table in front of them. Throughout this activity, learners can manipulate the object and practice interacting with it.
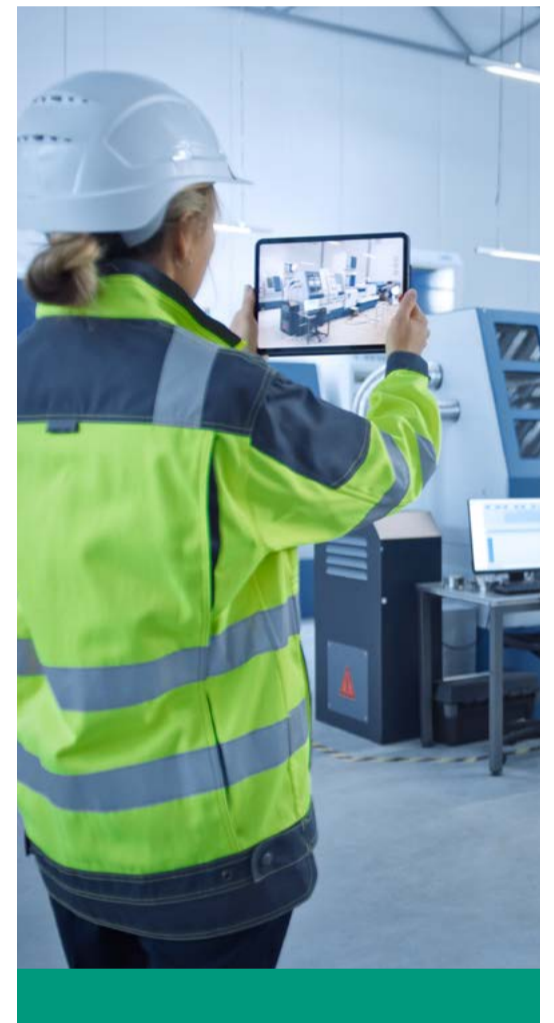
Ensure Long-Term Knowledge Retention

The use of technology in training can significantly increase knowledge retention rates. For example, using VR for training results in a retention rate of up to 80% one year after training, compared to 20% just one week after traditional training.[3]

With technology, learners gain hands-on practice completing day-to-day tasks essential to their role. This practice and repeatability has a profound impact on a learner's ability to retain more information for a longer period of time post-training.

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[3]Training Industry (2018), 3 Ways Virtual Reality Training Is Producing Better Outcomes.

How To Use Technology In Manufacturing Training

Now that you know the benefits technology can bring to your manufacturing training program, let's explore 5 applications of technology in the manufacturing training space. While these activities are discussed separately, it's important to remember that they can be used together as part of a blended learning program that utilizes multiple training modalities.

Full Virtual Reality For Process Training

This full VR program familiarizes learners with stacking shipment boxes with the correct orientation and weight balance. The learner is placed in a simulated warehouse environment where they practice the following tasks:

- Picking up cases with two hands
- Stacking cases properly according to weight
- Orienting cases properly on their pallet
- Moving to the next slot and repeating the stacking process
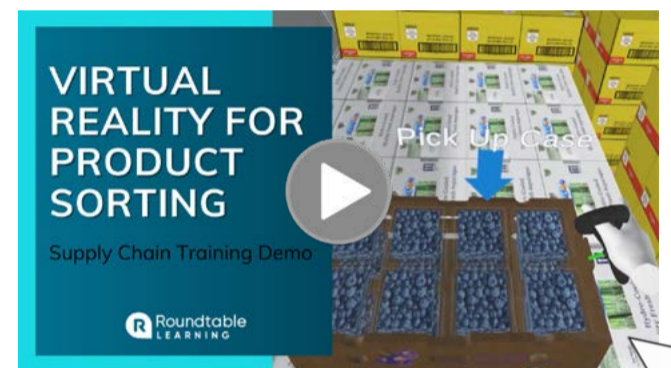
This full VR activity instantly corrects mistakes by indicating where the learner went wrong. For example, if a learner stacks a heavy case on a lighter case, they risk damaging the product. This activity provides direct feedback to help the learner correct their mistakes and prevent them from occurring in real life.

eLearning For Compliance Training

Compliance training is critical for educating your manufacturing employees in the legislation, policy, and regulations relevant to their role. With engaging eLearning, organizations will ensure their employees retain compliance information and reduce potential violations while on-the-job.

For example, an organization may use an eLearning program to teach their employees critical employment laws, including:

- Respect in the workplace
- Harassment and discriminatory behaviors
- Disparate impact and treatment

This course clearly maps out inappropriate workplace behaviors that will not be tolerated under employment law. In doing so, learners understand how to prevent, correct, and report illegal harassment and discrimination at their workplace.

360° Virtual Reality For A Warehouse Tour

As part of an onboarding program, organizations can use a 360° VR activity for a realistic tour of a new employee's warehouse environment. This program is created by filming the real life warehouse environment with a 360° camera, then adding information overtop in the form of text boxes and other digital content.

This program comes with several benefits, including:

- Realistic view of a learner's work environment
- Scalable through multiple access options (e.g. headset, desktop,
- Remote access regardless of a learner's location

With a 360° fixed view of their work environment, learners can experience the real life sights and sounds of their new role without ever stepping foot on the floor.

Augmented Reality For Object Repair

This AR activity places digital versions of complex machinery in front of learners. Through a phone or tablet, learners simply tap their screen to place a simulated piece of equipment on the surface in front of them.

Once the object is placed, learners can complete the following interactions:

AUGMENTED REALITY FOR MACHINERY TRAINING
Machine Breakout Demo
Roundtable LEARNING

- Break the object apart and explore individual pieces
- Enlarge or shrink the digital object
- View the object from different angles by rotating it
- Complete step-by-step processes to learn how to repair the object

This AR activity avoids the need for real-life equipment and provides an accessible, interactive learning experience for learners regardless of their location.

5 Ways To Use Technology For Warehouse Training

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Full Virtual Reality For Hazard Recognition

Hazard recognition is critical in a manufacturing environment to prevent fatal injuries and costly repairs to equipment. With a full VR activity, learners can practice spotting and preventing hazardous situations without facing real-world risk.

With Full VR, you can create an emergency scenario and allow your learners to practice the following:

> Identify potential hazards at work and prevent them from occurring

> Adequately address hazards through proper safety protocols

> Identify warning lights and sounds

Full VR is an effective option for safety training because learners gain a realistic sense of what a hazardous situation is really like without facing any real-world harm.

4 Examples of Extended Reality Training for High-Risk Industries

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This guide has covered all there is to know about manufacturing training, from popular manufacturing training topics to examples of using technology for manufacturing training.

We hope that you can refer to this guide for all of your manufacturing training needs.

If you're looking to start designing your custom manufacturing training program, you've come to the right place. Schedule a meeting with one of our experts today and get started building a program that values and upskills your workforce one employee at a time.

Do you think training is one-size-fits-all? *Neither do we.*

At Roundtable Learning, we partner with our clients to drive measurable business results for every stage of the employee lifecycle. We do so by consulting with clients to bridge the gap between existing training strategies and the future of learning through technology-enhanced, blended learning solutions.

Our team leverages immersive learning to develop strategic training programs that engage, motivate, and educate teams to achieve real performance improvements.

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