



THE BLUE COLLAR
VIRTUAL TRADE SCHOOL

THE POWER OF LEARNING BY DOING

4 Reasons Why Implementing
VR in Your HVAC Training is Critical
to Your Business Success.



> HVAC BUSINESSES CONTINUE TO FACE **GROWING CHALLENGES**

HVAC Business owners and Service Managers are currently facing major challenges that continue to get worse. You simply can't keep up with the growing skills gap and technician shortages on your service teams.

WHY?

Many factors are contributing to the skills gap. One of the biggest, as you know, is that much of the workforce is retiring. This means inexperienced techs are making costly and dangerous errors, while there is an increasing demand to upskill new HVAC techs faster and with greater efficiency on a shrinking budget.



> TRADITIONAL TRAINING ALONE ISN'T EFFECTIVE ENOUGH

It's clear that traditional training programs are just not cutting it anymore. Classroom and 2D computer learning is outdated, time consuming and often leads to longer ramp-up times, while hands on learning has its own inefficiencies and areas of improvement.

Fortunately, Virtual Reality (VR) is transforming the way businesses train their employees across all professions.

Powerful, yet (previously) costly technology, that was once only reserved for heavily capitalized industries, like aviation and military is *now affordable and accessible to the skilled trades industry.*

VIRTUAL REALITY TRAINING MEANS:

- Improved training efficiency
- Faster learning, so you can on-ramp new techs quickly
- Fewer errors means less wasted time in the field
- Scalability, so you can grow your team effectively

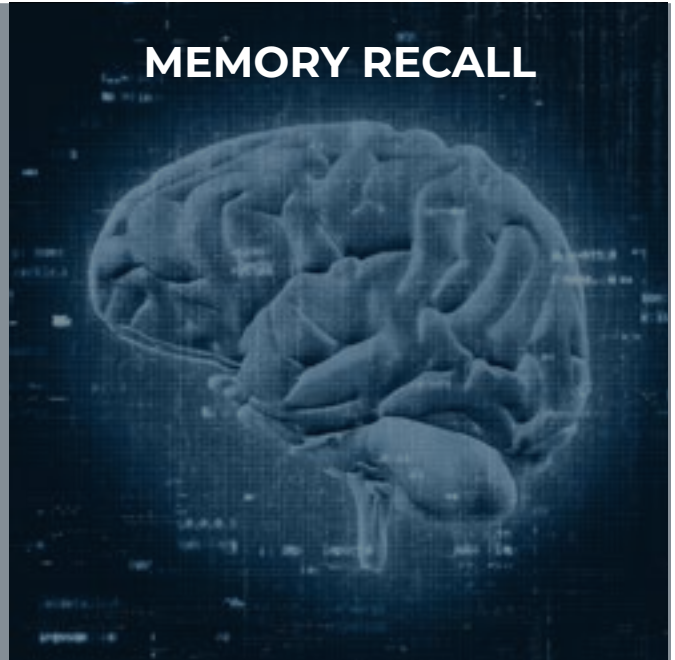
➤ WHY IS VR FOR HVAC TECH TRAINING PROGRAMS SO CRITICAL?

Let's explore some studies that reveal the evidence

IMMERSIVE LEARNING



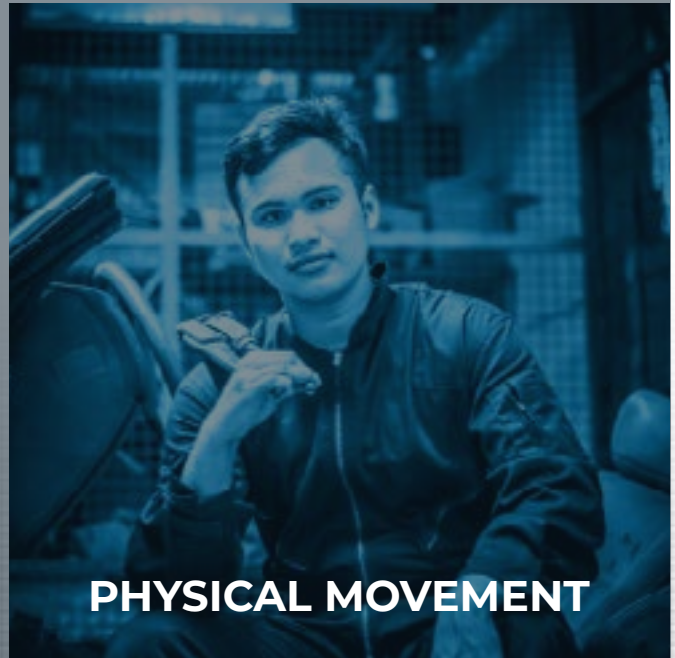
MEMORY RECALL



MINDFUL AWARENESS



PHYSICAL MOVEMENT



1. VR BRINGS IMMERSIVE LEARNING TO THE MASSES



Immersive learning is a concept that places individuals in an interactive learning environment, either physically or virtually. The goal is to replicate and engage in “real-world” scenarios to teach particular skills or techniques. [Immersive Learning Is Proven to Help us to Retain More. \(Source: TrainingIndustry.com\)](#)

WANT PROOF?

Let's try a quick mental exercise...

- > What color is the carpet/floor in your bedroom?
- > What about the color of your neighbors car you pass each day?

You visualized your bedroom carpet, didn't you? Did you see your neighbor's car in your minds eye?

The reason you were able to answer those questions so easily, is because we naturally create spaces in our minds to help visualize and recall information.

> SUMMARY:

VR lets you become immersed in a scenario which enables you to retain more information versus sitting at a computer.

READ MORE: <https://trainingindustry.com/glossary/immersive-learning/>

2. VIRTUAL REALITY MEMORY PALACE VS TRADITIONAL METHODS



A virtual memory palace proves to help information recall. What is a virtual memory palace? Well, it's a spatial mnemonic device. Huh?

Let's define:

1. spatial, spa·cial [spey-shuhl] - of or relating to physical **space**
2. mnemonic [ni-mon-ik] - something intended to assist the **memory**
3. device [dih-vahys] - a thing made for a particular **purpose**



In layman's terms, a virtual reality (device) memory palace (mnemonic) is a building (physical space) created to help memory recall.

In a memory palace, information is associated with different aspects of an imagined environment. Meaning, a person can mentally arrange things like objects, people or images that they want to remember, in a familiar location in their mind to assist with recall.³

> ACADEMIC STUDY: Virtual Reality Memory Palace VS. Traditional Platforms

Researchers at the University of Maryland set out to determine if a virtual reality memory palace would prove better for memory retention when compared to traditional platforms (desktop computer).

Researchers asked participants to navigate a virtual reality memory palace filled with photographs of familiar faces, such as celebrities and political figures (see images inset).



Memory Palace with Images

One group used a VR headset, allowing them to look around by moving their heads, while the other group used a desktop computer and mouse to navigate the palace.

Afterwards, the photos were replaced with blank boxes to test for recall. The results of this experiment revealed that the VR headset group performed better at recalling the positions of the faces than the computer group by a statistically significant 8.8%.

40% of VR Participants

Scored 10% Higher
in recall ability vs. desktop.



Memory Palace with numbers in place of images.

From the beginning of time, “Humans have always used visual-based methods to help them remember information, whether it’s cave drawings, clay tablets, printed text and images, or video.” And now, it’s obvious that **VR is shaping up to be the next step in the evolution of memory recall.** (Source: [Science Daily](#))

Rather than the traditional desktop display and mouse set-up, a single VR headset could be all it takes to boost recall and improve technician performance. In an instant, a tech could be transported to their very own memory palace in the basement of a residential home.



Techs could interact with “real” equipment, like a gas furnace, and troubleshoot common faults encountered in the field like a faulty transformer. This powerful, improved way of training, would allow them the chance to practice, repeat and advance their new skills at a rapid pace without the need to even be in front of real equipment.

No wasted time or resources.

> SUMMARY:

Introducing VR into training programs would improve the way techs are currently acquiring and storing new information.

READ MORE: <https://trainingindustry.com/glossary/immersive-learning/>

3. BEING FULLY PRESENT (AND MINDFUL) CHANGES PERCEPTION



➤ Have you ever noticed that special moments in your life are often so clear in your memory?

Just take a moment to think about the first concert you ever went to or the day you drove your first car home. As you recall these meaningful experiences there are likely specific details of the day that re-surface. Maybe, you remember exactly what the weather was like, or what you were wearing. Perhaps someone said something impactful that has stuck with you to this very day.

The reason you recall specifics so much better on these special days, over any others, is *because you were fully present in the moment.*

“Immersion leads to feeling present in a virtual environment because the virtual world is experienced directly and thus the experience is more meaningful.”⁴



> ACADEMIC STUDY:

Using VR Based Training For Maintenance Procedures

In the study Using VR Based Training For Maintenance Procedures, immersive learning is described as a “vivid illusion of reality” which is powerful because:

1. It shuts out the physical world and it's distractions with a head-mounted display (HMD)
2. It utilizes multiple sensory modalities
3. Offers a panoramic field of view, contributing to life-like surroundings
4. Displays richness of content and resolution, making the VR world look vivid⁵



> SUMMARY:

Immersion in a situation leads to what can be described as a vivid illusion of reality which increases perception and memory.

READ MORE: <https://trainingindustry.com/glossary/immersive-learning/>

4. PHYSICAL MOVEMENT IS PROVEN CRITICAL WHEN LEARNING A NEW SKILL

Fully immersive virtual settings capture full body motion. This allows people to use their full range of physical motion to interact with objects in the virtual environment. In this fully immersive virtual learning environment, people can learn physical activities better than video-based learning. Let's be honest, traditional training methods are becoming outdated for hands-on careers.



> ACADEMIC STUDY:

Effects of Immersive VR on Learning Physical Tasks

A Stanford University Study (on the effects of immersive VR on learning physical tasks), followed a group of students learning Tai Chi. Researchers placed the participants in a virtual setting where they could interact with their surroundings using natural movement to learn Tai Chi.

Researchers chose Tai Chi because of its slow, fluid motions. This allowed the capture of fluid motion in real-time. This also allowed students to follow the teacher easier. Since Tai Chi is well established, there is a correct way to perform each move. This allowed researchers to judge the performance of each participant more accurately.



The results indicated that those who learned the Tai Chi movements in VR performed better on all measurements versus those who learned via video-based learning.

> SUMMARY:

Physical movement activates the brain in a way that allows for better learning retention.

READ MORE: <https://www.interplaylearning.com/Immersive-VR-Physical-Tasks>

> WHAT DOES THIS MEAN FOR YOUR BUSINESS?

Virtual reality training means:

- Improved training efficiency
- Faster learning so you can on-ramp new techs quickly
- Fewer errors means less wasted time in the field
- Scalability, so you can grow your team effectively

Virtual reality technology was created to mimic hands-on experience. That's why some of the top hands-on industries in the world have implemented VR training as part of their program— Because it works better than just traditional methods alone.

Doctors, military and pilots have been using VR for years to improve their skills. We've simply harnessed the right technology at the right time to help solve a growing pain for the skilled trades industry. If your business is going to overcome the growing skills gap, then your training program needs to evolve. There is no other training method available to date that gets the same proven results in performance and scalability, while requiring such minimal startup costs. Also, this method of learning bypasses the "sink-or-swim" experience that's common to real-world scenarios. It's time to eliminate costly and dangerous mistakes with better (and faster) training.



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