



21 Ways Virtual Reality Is Being Used To Train Employees

Written by Sean McPheat



About the author, Sean McPheat



Sean McPheat is the **Chief Executive Officer** of the **MTD Training Group**. Founded in 2001 and having trained over 200,000+ staff since, MTD specialise in management and leadership development and also sales effectiveness programmes.

MTD specialise in **management development, sales effectiveness** and **digital content** creation.

Please click on the link below for further details about MTD's services.



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Sean is regarded as a **thought leader within the L&D industry** and has been featured on CNN, BBC, ITV and has over 300 different media credits to his name.

He has created a number of [thought leadership whitepapers](#) that have gone viral throughout the L&D community.

2017 was a very successful year for MTD as they won **2 prestigious L&D awards**.



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Today, Sean continues to lead his team to design and delivery innovative L&D solutions that focus on **getting the results** that you are looking for.

His daily LinkedIn posts and muses receive millions of hits each month and he is often asked to keynote at events worldwide.

We hope you enjoy Sean's latest whitepaper – **"21 Ways Virtual Reality Is Being Used To Train Employees"**

Introduction

We're living in a **rapidly changing era** and the world of L&D is no exception!

"AI this"

"VR that"

I'm constantly being bombarded for my thoughts on how the Learning and Development industry is either:

- A. Adopting and using these technologies now
- B. How L&D will use them in the future

This got me thinking that there's probably a lot of misunderstanding around the subjects so I thought I'd attempt to help!

Within this report are some **idea generators** for you in terms of VR (Virtual Reality) – I'll be creating an AI (Artificial Intelligence) report separately.

The best way to cover topics like this is to show, demonstrate and describe to you how companies are using Virtual Reality to help train their employees.

Hopefully you may see the potential in your area of expertise and what you are doing and how it may be applied in the future.

So I've put together 21 examples for you.

They each include a description of how VR is being used and where possible, links for further information on that particular example.

I hope you enjoy this report.

All the best



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1. VR can help train dementia caregivers

With an ageing population, dementia is becoming a major concern, and there will be an increased need for dementia caregivers.

VR promises to train dementia caregivers to be more effective.

In response to the global dementia crisis, graduates from Swinburne University have created the '[Virtual Dementia Experience](#)'.

This is an **innovative training** tool that is programmed to help **simulate** the disorientated feeling experienced by sufferers of dementia.



It does this by giving caregivers the chance to **experience a 'Virtual Dementia' environment**.

This should enable caregivers to empathize more with their patients and better understand what they are going through.

The Oculus Rift based system doesn't allow users to experience memory loss, but it can simulate other symptoms associated with mental deterioration, such as reality distortion.

2. Learn to fix cars using cutting edge VR

Robert Bosch has trained 10,000 service technicians on Direct Injection and Braking technology using the Oculus [Rift Virtual Reality Device](#).

This VR system allows trainees to take a **3D tour of the inner workings of an engine**, which means they can see exactly how the components fit together in a real engine.

Feedback from the VR tool has been very good.

3. Walk a mile in someone else's shoes to boost diversity awareness

The saying goes, 'never judge a person until you have walked a mile in their shoes'.

*Well, in the case of **diversity training**, VR is allowing people to do just that.*

This immersive experience developed by Stanford University is designed to help improve awareness of what it's like to be a different demographic than your own, be that gender, race or age.

It could represent a giant leap forward in diversity training.

[Developed by Stanford University](#), the [NFL has begun to deploy this VR](#) system which asks employees to 'virtually' walk a mile in someone else's shoes to **boost diversity awareness**.



The diversity-training scenarios hope to engender empathy in their users.

It's a sensitive and potentially controversial area and so the NFL, who are pioneering it, have been carefully planning how to use it to train league staff, (and players), on understanding bias.

The VR tech does not pull its punches and the Interaction Labs' diversity demos **will take users out of their comfort zone** into unfamiliar and unsettling scenarios.

For example, in one situation, the user is represented by an African-American female avatar who is being angrily harassed by a white avatar.

The NFL are keen to use this VR technology because the league still has low numbers of women and minorities in senior positions.

Interestingly, Stanford labs' software is free to any interested organization in its existing form, but if you want to customize it, which most companies will probably want to do, you'll need to pay.

4. Fight fire with VR

***Dangerous or high stress jobs** are perfect candidates for VR based training, as the benign environment guarantees safety during the precarious learning phase when accidents can happen.*

*Firefighting is one of the latest, **dangerous professions to make use of VR training**.*

The aptly named, '**Flame Trainer**', powered by [HTC Vive's interactive VR Tech](#), could become the future of firefighter training.

Along with the VR headset, trainees gain the ability to interact with the virtual environment using a VR integrated hose and a fireman's jacket that heats up when they get near to a flame.

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The suit has safety protocols, so it will never actually burn the wearer, (that would be too realistic), but it is enough to make you sweat profusely, users say.

The hose also offers feedback, so that whenever users pull on the lever the hose pulls back, simulating the feeling of water pressure, meaning that the VR participant has to brace themselves so they don't fall over.

The process of putting out a fire has some realism incorporated into it too, as the users have to work quite hard to expunge the fire.

Also, as the fire progresses smoke fills the room, meaning the user has to negotiate the room and expunge the fire in decreasing visibility. **It's a pretty full-on training experience!**

It's far more than just a game, the system is being developed by Dr. James Mullins, a Senior Research Fellow and volunteer fire fighter and they want to develop the system further to enable firefighters to learn different firefighting techniques.

It will create high value for the firefighting profession, because it will allow them to **become exposed to new and interesting situations** that they might only come across once or twice in their current career.

When fully operational, 'Flame Trainer' should improve outcomes because firefighters can now prepare for unusual and unexpected experiences.

Phase 2 of the VR system will incorporate locomotion so **users can move through the building** and they will be able to add tasks such as searching for trapped people.

The whole system has been developed in conjunction with and using feedback from firefighters. As a result, scenarios are being specifically developed to match what firefighters are asking for.

VR clearly has the ability to transform firefighting training.

Fire safety training. The makers also highlighted that this VR system could also be adapted for use in health and safety training, in high risk work settings.

5. Can VR training bring an end to frustrating calls to contact centres?



You've all probably experienced frustration with a call-centre operatives from time to time, and you'll therefore be pleased to know that firms like Genysys, (who develop call-centre technology), have been using VR in their own call centres to help better train their agents.

What they do in their software is simulate real-life customer engagements and experiences in real-time, which enables their agents to perform more effectively in the equivalent real-world scenario.

6. Eliminate your fear of public speaking with VR

Fears and Phobias can be one of the biggest barriers to success and effectiveness in business.

Imagine if your Sales Director refused to attend a key meeting in Milan for fear of flying?

Or you couldn't get enough team members to attend a key marketing expo for fear of public speaking?

VR is coming to the rescue.

[Psychiatrists at the University of Louisville](#) are **using VR in cognitive therapy** to help train patients to overcome social anxieties and phobias such as flying and speaking in public.

Rather than just dropping them into a real situations, VR allows partial and graded exposure to phobias in a controlled virtual environment.

The trainers can expose their patients to simulated scenarios and give them advice on how to manage their feelings.

7. How VR is improving safety in construction

Companies such as Gammon Construction Ltd. in Hong-Kong and Bechtel in San Francisco are using wearable VR tech developed by the company *Human Condition Safety* to improve building site safety, reduce or even prevent injuries and to make construction training more fun.

The VR system includes 4 topics, which are **hazard identification, forklift training, scaffolding, training and iron worker training**. One of the biggest areas to which these systems can add value is enabling builders to quickly acclimatise to operating at heights.

Normally, builders go up a high-rise and when they get out onto an exposed beam for the first time, it can understandably cause disorientation, meaning they have to cling to the beam or use fall protection.

This [VR system](#) has the ability to make a dramatic improvement to safety.

Another, often unsung benefit of VR training, has been, at least in this case, increased engagement.

In their previous class-room training at Gammon Construction, the trainers noted high disengagement, e.g. playing with phones, glazed expressions, yet with VR they are finding that people were getting up and getting engaged in the process.

One of the reasons for this is that the rest of the trainees can actually see what the person who is using VR can see, via a screen.

This means that there is a **stimulating level of audience participation**. It's an unexpected but welcome side-effect of VR training.

8. VR is being used to cure bad bedside manner in doctors



One of the biggest challenges that a doctor faces is breaking bad news to patients and families.

If done badly, it can cause additional bad feeling and torment for all involved.

Microsoft collaborated with Case Western University last year to use VR in the form of [VR technology called MPathic](#).

They are now using it to **train medical students** on how to break bad news in a hospital context.

The tool enables medical students to learn more effective empathetic communications skills.

It also shows them how to interpret verbal and non-verbal cues from characters in simulated situations and coaches them on how to respond in the most appropriate way.

[In Devon and South Torbay the NHS trust there](#) has also begun using VR to train doctors on the role of communication, compassion and teamwork in clinical performance.

This has led to **huge cost-savings** as prior to this lower-cost VR option, the trust was dependent on an expensive bespoke system.

VR has enabled the trust to roll-out this immersive soft skills training across the organization without breaking the budget.

9. VR allows medical trainees to be the 'fly on the shoulder' in an active operating theatre



Picture the scene: you are lying on a hospital bed talking to your doctor, when a bank of eager, junior doctors enter and start taking notes and quietly discussing you.

This intrusion can be unsettling and make an already uncomfortable situation worse.

Thankfully, VR will soon allow hospitals to enter a world where this intrusive, observational form of medical training, will be eradicated and replaced with a virtual reality assisted learning experience.

Dr Shafi Ahmed, a cancer surgeon at the Royal London hospital pioneered VR surgery two years ago.

The operation was being performed on a man with Colon cancer and was streamed to thousands of medical [students who were able to watch on VR head-sets](#).

The operation is filmed on two 360 degree cameras that have multiple lenses and broadcast a minute by minute account of the operation.

Viewers are able to zoom in and get a better view and they can walk around the operating theatre if they want to get a better viewing angle.

[If you watch the video article about it](#), what you may find fascinating too is that it is being conducted like a tutorial.

The surgeon is talking through and explaining all his actions and procedures, giving excellent training to medics.

They also have a Q&A system so that medics can submit questions at any point and they will be answered, (thankfully not by the actual surgeon), by a moderator, meaning that medics can learn as they go.

This one-to-many VR training experience has made it possible to deliver high quality medical training to the clinical masses. Dr Ahmed, who pioneered the training believes that virtual reality and augmented reality, can revolutionise surgical education and training, particularly for developing countries that don't have the resources and facilities of NHS hospitals.

10. Hospital VR games train medics

The stakes are so high in medicine, and the learning curve is so steep, it's no surprise that VR technology is really gaining traction in the medical sector.

[The HumanSim, VR games](#) are now being used to train medics.

Virtual scenarios cover combat trauma, triage, sedation and much more.

The one thing that trainees can be sure of is that they will find themselves in tough situations that mimic the real-world.

HumanSim blends real-world scenarios with advanced physiology engines to create powerful simulations giving medical professionals the chance to practice difficult stressful procedures in a virtually realistic setting!

It's by no means perfect as current technology capabilities don't allow perfect simulations of critical medical situations, but the HumanSim universe has really helped doctors, nurses and medics to become much more immersed in the training.

11. VR providing on-boarding training in the hospitality sector

Honeygrow is a trendy fast-food chain offering stir-fry and salads.

It has begun using [VR to provide trainees with an immersive, 360 degree tour of a Honeygrow](#) locations accompanied by a voice over from the Founder and CEO of the company espousing the company's values.

The value of VR here is due to the fact that Honeygrow is a rapidly growing start-up chain with 17 offices in different locations with plans to expand.

This has created a massive resourcing challenge with Honeygrow needing to recruit and train many new employees in a short period of time.

VR supported induction and training is allowing them to meet this challenge.

12. Retail sector – Training staff to deal with Black Friday



Retail is one of the toughest sectors out there, being characterised by squeezed margins, pricing wars, spiralling competition from challenger brands and online retailers.

*Retailers are always seeking an edge and VR technology is able to **deliver big in the typical supermarket's L&D process.***

Walmart, in partnership with STRIVR, are **leading the way in deploying VR** in the training of management and customer service staff.

Their Black Friday simulator allows staff to experience the highs, lows and pressures of Black Friday via their Oculus Rift Headset.

Within this Black Friday real-world scenario they are expected to make decisions and choices on what they see and they are scored accordingly.

Typical situations might be dealing with spills, long queues etc. This environment is highly interactive and gamified.

The VR can detect if the trainees are alert and aware enough, e.g. are they looking and responding to the appropriate stimuli or are they just shoe-gazing.

Spotting the stimuli, e.g. a spill for example, is not enough, they might then have to answer a multiple-choice question asking what impact this could have on the store.

By Walmart's own admission, Oculus Rift is expensive so they acknowledge that for now VR is more a small, supplemental part of training rather than core to it's training strategy.

13. Military – Be the best with VR

The armed forces, always looking for an edge, have always been ready to incorporate new technologies into their HR processes.

They were one of the first to use gamification technologies to screen new recruits, and the British forces are now pioneering VR tech, namely Oculus Rift to help train first-time medics for the trauma of battle.

The military has also been making **use of VR to train bomb disposal experts** to deal with IEDs.

The power of VR in both these simulations is that the simulations can be repeated and students can learn from their mistakes in a safe environment.

14. VR training astronauts for the final frontier of space



*Of course, outer space is not your typical work space and astronauts are not your typical employees, which makes them **perfect candidates for VR-based training**.*

While VR technology has not reached, 'Holodeck' status, (the lifelike virtual entertainment world from Star Trek), a virtual space station is being created to train astronauts for space missions.

Its purpose is to help astronauts to manage the interpersonal conflict that can arise from long term confinement with other people, and to also to manage the associated depression.

The VR environment contains virtual scenarios that astronauts can work through. These scenarios are based on real-life experiences of 29 current and veteran astronauts.

In one of the virtual scenarios, the player has to manage a conflict scenario, between a fictional flight engineer called, 'Chuck' and an astronaut. In this virtual situation, Chuck has made an error and requests that the astronaut does not inform ground control about the problem.

As a player of the game you have to select one of many potential responses which can help to resolve the conflict or simply make the problem worse.

While the context will be different, the reality is that this is a common type of conflict scenario that could occur in any work-place, and it's easy to see how this software could be adapted to suit other industries.

The system is immensely practical, fitting on to a small hard-drive so it can be easily taken on missions.

15. The skilled trades



It was generally believed that manual based jobs were at the greatest risk of being automated away by technology.

*VR tech is bucking that trend and producing tech that can actually **train new workers in the trades.***

[This piece on the fabricator.com](#) shows how VR welding technology is being used as a tool to improve the hiring and evaluation process for welders.

By subjecting welder applicants to VR based assessment, the HR department is able to do effective 1st round screening.

One company, Trinity Industries, a manufacturer of transportation, construction and industrial products wanted to reduce the learning curve for newly hired welders and teach entry-level welders at a faster rate than if they attended a tech school or community college.

Their custom-developed VR Arc welding training enabled them to achieve their goals.

There was also an unexpected but welcome side-effect that the skills of company trainers were improved as they became better at demonstrating processes.

VR Arc welding training is not just confined to in-house programmes.

It has been adopted by some training colleges, enabling students to understand welding philosophy, develop better technique and obtain muscle memory before they start using the tool.

Mill-rights, carpenters, pile-drivers and interior systems carpenters are **all being trained with VR based welding training technology.**

16. Virtually training the Police Force

1st person shooters as they are called, or computer games where you walk around a virtual world, shooting baddies have long been a staple in game playing communities.

Now, this technology has been upgraded to industrial grade VR technology and is being used to train police officers.



More relevant and prevalent in America of course, (as police routinely carry guns), VR police [training technology like the VirTra system](#) are **transforming police weapons training.**

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The system consists of a 5-screen sided, 300 degree screen, which acts like a wrap-around CAVE.

The floor makes sounds and vibrates according to the actions of officers.

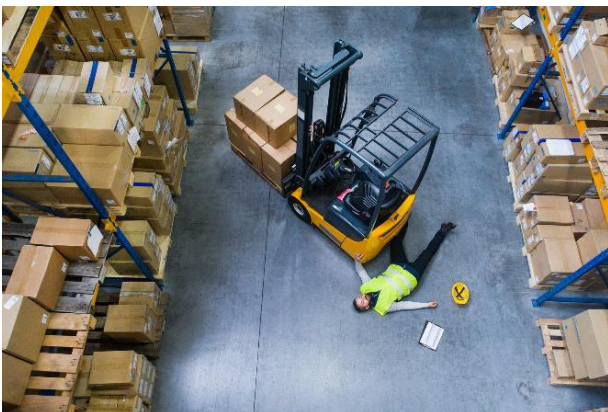
What's great about this kind of training is that it is more life-like as it is VR without a head-set which is much more like it is in the real-world.

Lasers and tasers can be used in this VR system that blends physical reality with virtual reality. The scenarios are evolving and can be adapted to suit the participants on the go.

This more chaotic rather than ordered game-like environment is enabled by an operator who can access multiple, branching live-action videos at-will based on the responses of the participants,

The VirTra system is **now used by security forces** throughout the world, including the US, Australia, Mexico and Brazil.

17. Taking forklift training virtual



Despite being such a prevalent and long-standing factory transport tool, forklifts remain one of the most dangerous.

They injure more people than HGVs or LGV. Forklifts account for 25% of workplace transportation injuries.

VR promises to bring some much-needed improvements to safety training in this area.

Raymond Corporation, [who manufacture forklifts are looking to take fork-lift safety training to the next level](#) with VR based training, which was introduced to the marketplace in 2017.

Their VR headset gives new operators the opportunity to use a Raymond Forklift truck in simulation mode.

It offers learner operators a VR environment that **mimics the feel and movement** of using a fork-lift in a warehouse environment, while using the controls of an actual, real-life fork-lift truck.

It is currently recommend to be used as a supplemental training tool, which enables trainee forklift operators to gain increasing comfort with the vehicle and it's controls before being let loose in real working warehouse.

This tool stands apart from other similar VR tools because it is the only one that can be connected directly to a compatible fork-lift providing a premium/blended VR experience with the greatest level of realism as a result.

18. Engineering sector



If there is one sector that you thought would be an industry-leader in VR, it would be engineering.

This is because their discipline is built on 3D computer modelling and simulations.

BMT Defence, an engineering consultancy, has started to deploy VR in its training and maintenance programmes.

[They created a fascinating virtual environment for training in off-shore wind-turbine maintenance.](#)

Trainees had to take a boat ride out to the location in fairly choppy seas and then ascend to the top of the turbine.

They are then able to see a magnified view of the turbine's internal components and mechanisms.

Using this VR system, learners can become acquainted with the operational principles of the turbine along with the parts that will need to be repaired and maintained.

Automotive Training

Driverless cars may be on the horizon, but for now human drivers still have a big role to play in the delivery sector.

[UPS for example has begun working on VR simulations](#) which it will use to train it's drivers before they get on the road.

19. Cutting edge VR breaks into a quiet, unassuming classroom in Broughal

In the quiet Irish Town of Broughal, a classroom of unassuming kids are pushing back the boundaries of learning by incorporating Oculus Rift assisted VR into their learning journey.

The pupils at St.Kierans school in Broughal attended a field trip to Clonmacnoise which is an historical site with ruins.

Instead of doing the usual thing of taking notes and pictures and writing a report on their day out, they were able to enhance their learning in a remarkable way with VR.

Using OpenSim – which is a free open course software tool for creating virtual worlds on your computer – students were able to create an exciting virtual model of the historic site.

What's remarkable is that they were able to do this in just two weeks.

Open SIM brought enhanced learning because, throughout the 2 week build, students were having to constantly remember and rebuild a virtual version of the site.

All this rehearsal would increase their recollection of the site. It also debunked the idea that e-learning is an isolated activity because in order to build this world, students had to show skills in teamwork.

They also had to use maths, creative thinking and historical research in order to complete this project. Once they completed the virtual world, they were able to explore it via their Oculus Rift head-sets.

At the time of publication, that programme was running in test mode in 11 schools in Ireland and by now will have been deployed in all the schools in Ireland.

20. VR training the hard way at KFC



Working as a retail assistant in a KFC chain may not seem like a candidate for VR but it is a role that does rely on the incumbent being well trained in the processes, procedures and techniques of the business. Step forward VR.

Workers in KFC may in the next few years [find themselves being trained by using VR](#).

KFC have designed a virtual training escape room which will enable trainees to learn to prepare their chicken.

The Hard Way, as it is called, (which refers to the preparation of fried chicken by hand), is their new VR simulator.

In the VR game you are presented with a back-office kitchen area of a KFC – which is actually the Secret lodge of Colonel Sanders -- and tasked with having to prepare and cook chicken according to KFC protocols under the guidance of a Colonel Sanders who gives instructions and guidance and training on their values.

It's very detailed, teaching them about brand values, and delving into the minutia of inspecting each piece, breading and frying

21. Experience life on an oil-rig through VR

An oil-rig is perhaps one of the more hostile, unpredictable and challenging work environments, making it a both expensive and dangerous environment for breaking in rookie engineers.

VR is now safely bridging the gap between class-room and trainee over exposure on the front-line with powerful VR training simulations.

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Having developed a cutting edge facility in Svenborg, Denmark and Houston, Texas, BP is deploying virtual reality to enable staff and contractors to learn to work in the unique conditions of an off-shore drilling operation.

The VR simulation enables user to encounter the same rocks, temperatures and pressures and even the same physical impact of the ocean currents, so they get a realistic experience of performing mission-critical jobs on an oil-rig.

BP believe that this virtual world training is allowing BP to drill more safely and efficiently in real world operations.

VR has enabled the training to extend far beyond what was possible in traditional class-room training. The drilling teams can practice events and joint procedures as an integrated unit.

As you would imagine, this isn't cheap, and BP had invested heavily to make this work.

Total, another global energy company, [are also relying on VR for training](#) it's engineers before going out onto the rig. They have been using an Immersive Training Simulator to help increase safety and optimize their raw material production processes.

When immersed in the virtual training suite, employees can visualize key tasks and ready themselves for a range of emergency scenarios, such as fires, flares and leaks.

This form of training has been well-received given how new-fangled it may seem to staff, with 58% of trainees finding it 'very useful'.

In Conclusion

I hope you have taken something from this whitepaper?

Watch this space to see how the wonderful, exciting world of VR will develop in the years to come.

All the best



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