Virtual Reality—Making Good on the Promise of Immersive Learning

By Koreen Pagano, Angela Haddad, and Tai Crosby

The effectiveness of in-person training, with the logistical and cost-effective benefits of computer-based systems.

It is common knowledge that people learn best by doing. Practice, failure, and experiencing consequences help us make neural connections that are much stronger and longer lasting than simply consuming content. Yet the majority of learning experiences are out of context and focused on content presentation. Classroom training, online training modules, and online synchronous training all fall into the same category of didactic content presentation. Although learning professionals know that providing opportunities for practice are more effective, the ability to provide effective, scalable immersive learning has been out of reach—until now.

Imagine the potential for learning and development processes when employees can be trained on demand from anywhere in the world, in an environment that replicates relevant real-world applications with real-time feedback, at a low cost to the company. This is the power of immersive learning, and it is what virtual reality (VR)—more specifically first-person point of view (POV) VR—is enabling (Figure 1).
Training is the lifeblood of a company’s success. In early times, an apprenticeship model was employed to teach unskilled workers the proficiency they needed to be successful in their chosen trade. Apprentices were closely supervised by masters in the trade, given frequent feedback, and supported in developing their skills over time through repeated practice. The apprenticeship model wasn’t scalable, however, and

Finding affordable and accessible technology has been a roadblock for many learning experience designers who sought to provide immersive learning experiences.

as mass education began to replace it, training more employees for an ever increasing variety of jobs, a skill gap emerged that continues to widen today, leaving many college graduates with an education but not business or trade skills.

And it’s not just an education skills gap problem. In a constantly evolving and increasingly globalized marketplace, companies both small and large have a constant need to transfer new information and skills to both existing employees and new hires alike to stay competitive. This training process is such a vital aspect of the corporate sphere that over US$160 billion was spent in 2014 on corporate training in the United States alone, with the global market for training services estimated at nearly US$300 billion that year.

While the direct spending on training is enormous, indirect costs exist as well to support it. Human resources, time, travel, and facilities are just some of the indirect expenses related to corporate training that can exponentially increase the amount of money companies are investing to provide meaningful learning experiences to improve individual and business performance.

Unfortunately, the majority of this investment is focused on information transfer. We know that this is not the best way for people to learn, yet the question has remained: “How can we provide learning and practice in context?” This is how VR, and its resulting immersive learning environment, is transforming the learning and development industry. While it can’t be claimed that all classroom training and e-learning is dull, low-quality, or ineffective, research shows that hands-on experience that simultaneously allows real-time feedback is more effective.

AN EYE ON DESIGN
Design, then, is the key for creating meaningful and effective learning experiences, and technology is the vehicle for delivering that designed experience. Finding affordable and accessible technology has been a roadblock for many learning experience designers who sought to provide immersive learning experiences. As VR begins to fill this void for designers, it’s important to understand the benefits and constraints of VR as an immersive learning platform.

VR’s benefits for immersive learning include

▼ Sensory immersion: with both visual and auditory immersion in a 3-D video environment (Figure 2), learners experience a sense of presence that sparks deeper creation of memory and evokes curiosity, appeal, and emotional connection.

▼ Heightened presence in the environment: many animated VR experiences allow you to see an avatar approximation of yourself in the environment. Additionally, some video-based VR, like SilVR Thread, allow you to look down and see the body of the person in the video, allowing for a greater sense of immersion.

▼ Ability to interact with the environment: interaction is already easy to incorporate into animated VR and is emerging in video-based VR.

▼ Capacity to impact events and outcomes: branch scenarios can be built into the VR experience that allow for varied events and results based on actions taken and decisions made in the VR environment. This also allows for dynamic test taking and the ability to match the content to the answers received.
Learning in POV VR amplifies the power of hands-on learning through body presence and awareness, establishing familiarity and a deep-rooted connection to the skill being taught.

At SilVR Thread, we are committed to developing VR experiences that help organizations meet their learning and training needs. Through our journey, we’ve encountered use cases from companies in a wide range of business segments that have been left wanting by traditional training methods. As an example, in sales training, providing instantaneous feedback to a sales representative while the rep is engaged in the sales process would be difficult if not impossible to do in real life or with existing training tools. In a VR sales simulation, real-time feedback can be provided to the sales representative to improve his or her technique and sales messaging. This allows for the opportunity to course correct and reinforce appropriate sales techniques and responses instead of inappropriate ones. This chance to provide instant feedback and allow sales reps to try again when they make a mistake can build sales skill muscle memory to improve performance in the field.

GAME ON
While VR is a fantastic example of realistic practice, it can be leveraged for more game-based practice as well. Engaging in a VR environment where you are judged solely on your actions and performance can remove evaluation bias that can otherwise exist based on gender, race, weight, or disability, just to name a few. For compliance or leadership training, engaging in a VR environment as a member of a different demographic than one is in real life can provide an opportunity to “walk a mile in their shoes” in a way no other technology can. VR is uniquely able to provide immersive experiences to not only replicate experience in context of the learner but also allow the learner to experience scenarios from another person’s point of view.

First-person POV VR allows trainees the chance to emulate the master/apprentice model by effectively stepping into the body of the master and experiencing the learning solution natively from the master’s viewpoint (Figure 3). Imagine the potential of capturing an expert’s memory and replaying it in a scalable manner into every learner’s virtual environment. Our research has shown that, in cases related to skill acquisition, enabling POV VR experiences allows those embodying the first-person experience to register the memory as if it were their own. With this revelation, we are able to build learning and development experiences with high impact and long-term influence on users’ experiential and long-term procedural memory, as if they were really doing it the actions in the simulation. By simulating first-person physical experience in VR with complete immersion in 3-D and full positional sound, learning in POV VR amplifies the power of hands-on learning through body presence and awareness, establishing familiarity and a deep-rooted connection to the skill being taught.

When it comes to the potential for VR for learning, the only limits are those of our imagination. From leadership development to new hire onboarding, from retail manager skill development to product demonstrations and simulations, VR allows the learner to actively engage in the learning process and to learn by doing, making mistakes and using feedback to try again. No other technology has the potential to disrupt learning more than VR. It is time to start designing for what is possible.

ABOUT THE AUTHORS
Koreean Pagano (koreean@silvrthread.com) is a product leader with experience in product management and marketing and building teams and technologies to solve complex problems. She is the author of the book Immersive Learning, based on professional experience focused on learning, performance improvement, user experience, immersive design, game design, and the intersection of emerging technologies.

Angela Haddad (angela@silvrthread.com) is a virtual reality (VR) producer at SilVR Thread, where she most recently coproduced Lionsgate’s Nerve VR experiences, which allows the user to embody the stars’ characters in action scenes that transport him/her onto a skateboard tied to the back of a moving police car and onto a ladder suspended between two New York City buildings. She and the SilVR Thread production team are currently creating learning experiences targeting corporate training.

Tai Crosby (tai@silvrthread.com) is the founder and chief executive officer of SilVR Thread, which specializes in first-person point-of-view virtual reality technology.