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AR/VR in Training – A New Reality of HR

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Abstract

Augmented Reality (AR) and Virtual Reality (VR) are transforming how Human Resource (HR) training works by offering interesting and practical ways to learn. These new methods are unlike older ways because they let people safely practice, get training made for them, and join from any place on Earth for getting started, learning job skills, people skills, and following rules. Even though there are problems like things costing a lot, problems with getting going, and concerns about keeping data safe, AR/VR gives long-term good things like keeping knowledge longer, saving money, and making workers surer of themselves. So, AR/VR is turning into a key way to build a workforce set for what is coming and to help groups get bigger.

Keywords: Practical way, Job skill, Build workforce, long term, Data safe

I.INTRODUCTION

In the modern world, organisations are looking only for innovative methods to growth their workforce.

The corporate landscape is undergoing a profound transformation driven by rapid digitalization and the adoption of advanced technologies. Human Resource Management (HRM), once primarily administrative, has evolved into a strategic partner that shapes employee experience, drives learning, and aligns workforce capabilities with business goals. One of the biggest challenges HR professionals face today is equipping employees with relevant skills in an era where knowledge becomes obsolete quickly due to technological innovation.

Traditional training approaches such as classroom lectures, PowerPoint presentations, or even e-learning modules, though still valuable, often lack interactivity, engagement, and practical application. Today's workforce particularly millennials and Gen Z expects (Nivetha D, 2025) (Nivetha D, 2025) ands-on, engaging, and technology-driven learning opportunities.

This is where Augmented Reality (AR) and Virtual Reality (VR) play a transformative role. Initially linked with entertainment and gaming, these technologies have entered mainstream corporate training, enabling immersive simulations, safe practice environments, and interactive learning. From onboarding new hires to technical skill development, leadership training, compliance, and safety protocols, AR/VR is becoming a strategic HR tool for building capabilities at scale.

Thus, AR/VR is not just an innovation in training it represents a paradigm shift in how HR delivers learning, manages talent, and enhances employee engagement.

Overview of AR and VR Technologies:

Augmented Reality (AR)

Definition: AR overlays digital content (images, videos, animations, 3D models, text) onto real-world environments.

Devices: Smartphones, tablets, AR glasses.

Function in Training: Enables employees to see step-by-step digital instructions while performing real tasks. For example, a factory worker wearing AR glasses can see instructions for assembling machinery without reading a manual.

Virtual Reality (VR)

Definition: VR immerses users in a completely simulated environment.

Devices: VR headsets

Function in Training: Replicates real-world scenarios—like surgery, firefighting, or customer service—in a safe, controlled environment.

Importance of AR/VR in HR Training:

Learning by Doing

Research shows people remember:

- 10% of what they read
- 20% of what they hear
- 75% of what they practice (experiential learning)

AR/VR brings "learning by doing" into corporate training. For example, pilots train in VR flight simulators before real flights.

Addressing Skill Gaps

Rapid automation creates skill mismatches.

AR/VR training modules can be customized to individual learners, ensuring employees learn only what they need.

Example: In healthcare, VR enables doctors to practice rare surgical cases that they may never encounter otherwise.

Remote Learning & Inclusivity

Supports global training delivery for remote employees.

Enables inclusivity: AR/VR modules can be designed for differently-abled employees with voice commands or adaptive controls.

Safe Simulations

Training for high-risk industries (aviation, mining, firefighting) can be life-threatening in real practice.

VR provides a risk-free, repeatable learning environment.

Applications of AR/VR in HR Training

Onboarding and Orientation

VR tours of offices and factories make onboarding engaging.

Gamified experiences help new hires understand culture faster.

Example: Accenture's VR onboarding lets employees interact with avatars of managers and tour virtual campuses.

Technical & Vocational Training

AR: Digital overlays for engineers or factory workers while using real equipment.

VR: Safe simulations for learning surgery, engine assembly, or construction safety.

Example: Volkswagen trains engine assembly staff in VR before working on actual cars.

Soft Skills & Leadership Development

VR simulates difficult conversations, conflict resolution, performance reviews.

Helps managers practice empathy and inclusivity.

Example: PwC's VR program trains leaders in recognizing unconscious bias.

Compliance & DEI Training

Instead of boring slides, employees experience ethical dilemmas in VR.

Example: Vantage Point VR teaches employees about sexual harassment by letting them view situations from multiple perspectives.

Emergency & Safety Protocols

Fire drills, evacuation simulations, or chemical spill training in VR prepare employees without danger.

Example: Shell trains oil rig workers in VR for offshore emergencies.

Benefits of AR/VR Training in HR:

AR (Augmented Reality) and VR (Virtual Reality) are revolutionizing how organizations approach employee training. Unlike traditional classroom learning or e-learning, AR/VR creates immersive, interactive, and highly engaging experiences, which accelerate skill development and knowledge retention.

Immersive and Engaging Learning Experience

Realistic Simulations:

VR creates life-like virtual environments that replicate workplace scenarios. Employees can learn by doing, which enhances engagement compared to passive learning methods.

Example: Walmart uses VR simulations to train employees for Black Friday crowd management. Employees virtually experience chaotic customer situations, preparing them for the real-world challenge.

HR Implication:

HR can ensure employees are not just reading policies but experiencing and practicing them, making training more effective.

Safe Environment for Risky or Complex Training

Risk-Free Practice: Employees can practice dangerous tasks without physical risk. This is crucial for industries like construction, aviation, firefighting, and healthcare.

Example: Boeing uses VR to train engineers on airplane wiring, which is otherwise a risky and highly complex process. Medical schools use VR for virtual surgeries so students can practice without harming patients.

HR Implication:

HR can use VR to reduce workplace accidents, improve safety compliance, and minimize legal liabilities.

Cost-Effectiveness in the Long Run

Reduced Travel and Facility Costs:
Instead of sending employees to centralized training centers, organizations can deploy VR headsets globally.
Reusable Content:
Once developed, AR/VR modules can be used repeatedly across multiple batches of employees.
Example: KFC created a VR escape room–style training where employees learn to cook chicken in a fun, gamified environment. This reduced the need for multiple in-person training sessions.
HR Implication:
Though initial investment is high, HR can show long-term savings in training logistics, travel, and instructor costs.
Higher Retention and Knowledge Retention
Learning by Doing:
Studies show people remember 10% of what they read, 20% of what they hear, but 75–90% of what they actively experience.
Example: PwC found that employees trained with VR were 4x faster to learn, 275% more confident, and retained knowledge longer compared to traditional classroom learners.
HR Implication:
HR can highlight improved ROI by tracking training effectiveness via assessments and performance metrics.
Personalization and Adaptive Learning
Customized Training Modules:
AR/VR can adapt to employee performance—if a trainee makes mistakes, the system can repeat the scenario or adjust difficulty levels.
Example: Sales training VR programs allow employees to practice customer conversations with AI-powered avatars that respond differently based on trainee behavior.
HR Implication:
Personalized learning paths improve employee satisfaction and help HR identify individual strengths and weaknesses.
Remote and Global Training
Overcoming Location Barriers:
Employees across different geographies can access the same standardized training modules simultaneously.
Example: Accenture created a VR onboarding program where employees join a virtual office, meet colleagues globally, and learn about the company culture.

HR Implication:

HR can strengthen cultural alignment and inclusivity by providing consistent training to remote and hybrid workforces.

Enhancing Soft Skills Training

Role-Play Scenarios:

VR can simulate difficult conversations, public speaking, conflict resolution, and leadership scenarios, which are often hard to replicate in real life.

Example: Walmart's VR training includes scenarios where managers must resolve employee conflicts, helping them practice empathy and decision-making.

HR Implication:

HR can improve leadership pipelines by building communication, negotiation, and emotional intelligence skills in managers.

Increased Employee Confidence and Performance

Safe Trial and Error:

Employees gain confidence by practicing multiple times without fear of judgment.

Example: A retail company used VR for product knowledge training. Employees who practiced in VR were more confident when handling real customer queries.

HR Implication:

HR can foster a culture of continuous learning, where employees are less afraid of mistakes and more open to upskilling.

Gamification and Motivation

Engaging Elements:

VR training often includes points, levels, leaderboards, and badges, making learning fun.

Example: Deloitte used gamified VR leadership training modules to motivate employees to complete programs quickly.

HR Implication:

Gamified learning improves completion rates, reduces boredom, and increases overall employee participation.

Environmental Sustainability

Reduced Carbon Footprint:

Less travel, fewer printed materials, and more digital training contribute to corporate sustainability goals.

Example: A global bank cut down international training flights by adopting VR, aligning with its green HRM policies.

HR Implication:

HR can showcase AR/VR adoption as part of CSR (Corporate Social Responsibility) and sustainability initiatives.

Case Studies:

Walmart: VR-based customer service & emergency training → improved confidence and faster skills.

KFC: VR escape room training on cooking process → made repetitive tasks engaging.

Boeing: AR glasses for wiring aircraft → 40% productivity increase.

UPS: VR for driver safety training → reduced accidents, saved costs.

Challenges & Limitations:

While AR and VR offer transformative potential for Human Resource (HR) training, their adoption is not without significant hurdles. Organizations must carefully evaluate these challenges before large-scale implementation. The following sections provide an in-depth exploration of the limitations:

High Initial Investment and Cost Barriers

Infrastructure Costs:

Developing custom AR/VR training modules requires specialized hardware (headsets, haptic gloves, sensors, 3D cameras) and software development (content creation, simulation design, updates). The upfront investment can be prohibitive for small and medium enterprises (SMEs).

Example: A high-quality VR headset like the Meta Quest Pro or HTC Vive can cost between $500–$1,500 per unit, excluding accessories and licenses.

Software Development Expenses:

Tailoring training content to an organization's industry requires professional developers, 3D artists, and instructional designers. For example, creating a VR flight simulation for pilots could cost millions.

Maintenance and Upgrades:

Unlike traditional e-learning, AR/VR content requires frequent software updates and hardware upgrades as technology rapidly evolves. Obsolete devices can make training platforms unusable in a few years.

HR Implication:

HR leaders must justify ROI (Return on Investment) to management by showing how immersive training can reduce errors, improve retention, and cut costs in the long run.

Technological Barriers and Limitations

Hardware Limitations:

Current VR devices often suffer from low battery life, bulky design, and limited field of vision. Prolonged use can be uncomfortable, discouraging employees from completing long training sessions.

Software Compatibility Issues:

Different AR/VR platforms (Oculus, HTC Vive, Microsoft HoloLens) use different operating systems, making cross-platform integration a challenge. Organizations may face difficulties in scaling solutions globally.

Network and Connectivity Issues:

High-quality VR experiences require low latency networks (ideally 5G). In areas with poor internet infrastructure, streaming VR training sessions becomes impractical.

User Experience Issues:

Motion sickness (cybersickness) caused by frame delays or mismatched motion tracking can make employees dizzy.

Eye strain from prolonged headset use.

Limited session duration due to discomfort.

HR Implication:

HR teams must ensure ergonomic design and limit training modules to short bursts (10–20 minutes) to reduce physical strain.

Resistance to Change and Adoption Challenges

Employee Reluctance:

Many employees, particularly those from older generations, may feel intimidated by immersive technologies. They may view VR as "gaming" rather than a serious training tool.

Learning Curve:

Employees unfamiliar with headsets, controllers, or AR devices require pre-training sessions just to learn how to use the technology. This adds time and cost.

Organizational Resistance:

Leaders hesitant about ROI may delay or reject adoption. HR must act as a change management driver, ensuring awareness of long-term benefits.

Example: A logistics company trying to introduce VR forklift training found that senior employees preferred traditional classroom learning, claiming VR was "too complicated."

HR Implication:

HR must focus on change management strategies—like pilot programs, gamification, and blended learning approaches—to increase acceptance.

Accessibility and Inclusivity Concerns

Physical Disabilities:

Employees with vision impairments, hearing difficulties, or limited mobility may struggle to use AR/VR headsets and controllers.

Medical Issues:

Employees with epilepsy, neurological conditions, or vertigo may face health risks in immersive environments.

Affordability in Emerging Markets:

Not all organizations can provide VR headsets to every trainee, especially in developing countries with limited budgets.

Example: A multinational firm piloting VR onboarding faced backlash when differently-abled employees were excluded due to headset compatibility issues.

HR Implication:

HR must ensure inclusive design (closed captions, voice commands, adaptive interfaces) and provide alternative training methods for employees unable to use immersive tools.

Data Privacy, Ethics, and Security Risks

Sensitive Data Tracking:

VR headsets collect biometric data (eye movement, heart rate, body gestures, reaction time). Misuse or unauthorized storage of this data could violate privacy regulations (GDPR, HIPAA).

Cybersecurity Threats:

AR/VR platforms connected to the internet are vulnerable to hacks or leaks, potentially exposing training content or employee data.

Ethical Concerns:

Collecting behavioral data (like stress levels during training) may lead to employee surveillance fears, reducing trust in HR.

Example: A healthcare company using VR for medical training faced scrutiny when reports surfaced that eye-tracking data could be sold to third-party vendors.

HR Implication:

HR must collaborate with IT and compliance teams to implement strict data governance policies and ethical usage guidelines.

Scalability Challenges

Limited Content Reusability:

Training content for one industry may not be transferable to another. Customization limits scalability across functions or regions.

Hardware Availability:

Equipping thousands of employees across multiple locations with VR headsets is a logistical challenge.

Example: Walmart succeeded with VR because it could afford 17,000 headsets for stores nationwide. Smaller companies would struggle to scale such initiatives.

HR Implication:

Organizations must prioritize critical training areas first (e.g., safety, compliance) before scaling AR/VR for broader employee development.

Psychological and Behavioral Concerns

Over-Immersion Risks:
Some employees may find VR environments too real, leading to stress, anxiety, or fear during high-pressure simulations.
Dependency on Technology:
Employees might become overly reliant on simulations rather than developing adaptability in real-world situations.
Reduced Human Interaction:
Excessive use of VR for soft-skill training could reduce opportunities for real interpersonal communication.
Example: In a VR conflict-resolution training, some employees reported heightened anxiety when faced with virtual avatars resembling aggressive managers.
HR Implication: HR must balance digital training with human mentoring to ensure well-rounded employee development.

Future Trends:
AI-Powered VR → adaptive learning paths, real-time difficulty adjustments.
Metaverse Learning → 24/7 virtual campuses for collaboration and networking.
Haptic Feedback Devices → VR gloves/suits for touch simulation.
Cloud-Based VR Training → VR on-demand, without heavy hardware.
Gamification → leaderboards, rewards, badges to increase participation.

II. CONCLUSION

AR/VR training represents a new frontier for HR professionals. Beyond being a passing trend, it is becoming an essential tool to engage, educate, and upskill employees. By offering safe, immersive, cost-effective, and personalized learning, AR/VR helps organizations future-proof their workforce.

While challenges like cost and adoption exist, early adopters will enjoy a competitive edge in employee engagement, retention, and capability building. For HR, embracing AR/VR means moving from being a support function to a driver of organizational innovation and growth.

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