



# Implementation of Virtual Reality-Based Logistics Training Across Multi-Branch Training Environments in Saudi Arabia

DON Virtual Reality

Client Saudi logistics Academy

Dept Training

**Abstract-** Virtual Reality (VR) technologies are increasingly being integrated into workforce development programs to improve operational readiness, enhance safety, and support practical skill acquisition. This article presents the implementation of an immersive VR training program developed by DON VR in collaboration with Saudi Logistics Academy across multiple academy branches in Saudi Arabia. The solution was designed to simulate realistic logistics operational scenarios within a controlled digital environment, enabling trainees to practice operational procedures, equipment handling, and safety workflows prior to entering live workplace environments. The platform integrates immersive simulation with assessment and reporting tools connected to Learning Management Systems (LMS) to support measurable competency evaluation and training performance analysis. The implementation demonstrates the scalability of immersive VR training technologies within logistics education environments while supporting workforce development initiatives aligned with Saudi Vision 2030 objectives.

**Keywords:** Virtual Reality (VR), Immersive Training, Workforce Development, Logistics Training, Saudi Logistics Academy, DON VR, Learning Management System (LMS), Skill Development, Operational Readiness, Safety Training, Simulation Technology, Digital Learning, Competency Evaluation, VR Simulation, Saudi Vision 2030, Industrial Training.

## I. INTRODUCTION

The logistics sector in Saudi Arabia is experiencing rapid growth as part of the Kingdom's economic diversification and infrastructure development initiatives. This expansion has increased the demand for advanced workforce training methodologies capable of improving operational preparedness while maintaining high safety and efficiency standards.

Traditional logistics training methods often face limitations related to equipment availability, operational risk exposure, and restricted repeatability of practical scenarios. Immersive Virtual Reality technologies provide an alternative training framework capable of recreating operational environments within a safe, repeatable, and measurable simulation ecosystem.

In response to these challenges, DON VR implemented a VR-based logistics training platform in partnership with Saudi Logistics Academy to support practical workforce development across multiple training branches.

## II. SYSTEM OVERVIEW

The VR training platform was developed to provide trainees with immersive operational simulations replicating realistic logistics

workflows and workplace procedures. The system enables users to interact with virtual operational environments, execute procedural tasks, and respond to safety-related scenarios within a controlled simulation framework.

The implementation included:

- Immersive VR operational training modules
- Scenario-based procedural simulations
- Equipment handling simulations
- Integrated trainee assessment systems
- LMS-connected reporting infrastructure
- Centralized performance analytics dashboards

The architecture was designed to support scalable deployment across multiple academy locations while maintaining unified performance monitoring and reporting capabilities.

## IV. ASSESSMENT AND REPORTING FRAMEWORK

A core component of the implementation was the integration of a measurable assessment and analytics framework within the VR environment. The system records operational and behavioral performance indicators including:



- Task completion duration
- Procedural accuracy
- Operational errors
- Scenario progression metrics
- User interaction analytics

The reporting infrastructure generates structured trainee performance reports for instructors and management personnel, enabling data-driven evaluation and continuous training improvement.

The integration of measurable analytics within immersive learning environments contributes to the standardization of training delivery and competency assessment across multiple branches.

## V. WORKFORCE DEVELOPMENT IMPACT

The deployment of immersive VR training demonstrated several operational and educational benefits, including:

- Increased trainee engagement
- Improved familiarity with operational procedures
- Reduced training risk exposure
- Enhanced consistency in training delivery
- Scalable deployment across geographically distributed branches

According to Hamad Alhuqail, Director of Saudi Logistics Academy, the implementation contributed to improving operational training effectiveness through realistic simulation and measurable assessment methodologies.

“The VR training program introduced an effective training environment across Saudi Logistics Academy branches by combining realistic simulation with measurable assessment mechanisms. The implementation contributed to improving training quality and trainee readiness for operational environments.”

— Hamad Alhuqail, Director, Saudi Logistics Academy

Rami Awad, CEO of DON VR, stated that immersive technologies can significantly improve workforce preparedness by enabling trainees to develop practical operational competencies within safe and controlled environments before entering real-world operations.

## VI. CONCLUSION

The implementation of immersive VR training within logistics education environments demonstrates the growing role of simulation technologies in workforce development and operational readiness programs. The integration of immersive simulation, measurable assessment systems, and centralized reporting frameworks provides a scalable training model capable of supporting modern logistics sector requirements.

The successful deployment across multiple Saudi Logistics Academy branches highlights the potential of VR technologies to support digital transformation initiatives and future workforce capability development within Saudi Arabia’s expanding logistics sector.