

Chapter 12

Adopting the Novel Technique to Save Time and Resources by Applying Virtual Reality in the Training Industry

M. Siva Swetha Reddy
Commune Panchayat, India

Ginni Nijhawan
Lovely Professional University, Phagwara, India

K. Adnan
Hilla University College, Babylon, Iraq

S. Nagaraju
MLR Institute of Technology, Hyderabad, India

C. Vidyadhari
GRIET, Hyderabad, India

ABSTRACT

The potential of virtual reality for training and safety purposes in raw materials sector firms is the focus of this chapter. More widespread usage of VR's full potential in manufacturing has been the driving force behind the field's recent research initiatives. The potential of virtual reality (VR) as a medium for teaching and training has recently emerged. Users are able to participate in scenarios, simulations, and

DOI: 10.4018/979-8-3693-6839-8.ch012

Copyright © 2025, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

other forms of interactive learning in real-time inside its immersive and dynamic learning environment. Learning practical skills, improving knowledge retention, and cultivating soft skills like leadership, collaboration, and communication may all be aided by virtual reality.

1. INTRODUCTION

Public debates on advanced manufacturing techniques and Industry 4.0 are growing the importance of human interaction in industrial processes must be acknowledged (Dwivedi et al., 2022). A contemporary firm or non-business entity's most valuable resource is its knowledge of people and their productivity managers and leaders in the twenty-first century, the transition to an economy based on knowledge, the need for creativity and adaptability, the difficulties of the digital era, and the significance of moral leadership are still relevant and crucial Landrigan et al., 2018b. Safety in the workplace affects corporate employee retention as well as supervisor motivation and stimulation. Managers must emphasise workplace security to achieve corporate goals. Dependability of technological equipment and technologie, as well as staff competence in operating and managing them, affect environmental safety. Workers' skills boost output and decrease risks, making technological equipment and processes more reliable. Training and education help maintain environmental safety standards and productivity objectives, and a secure workplace helps retain people. Managers should handle employee issues. For long-term success, good training and education are essential. An HR manager's stellar performance boosts the staff. Stability and reduced volatility affect an organization's profitability.

VR lets users engage and explore a completely realistic, three-dimensional environment via sensory clues. HMDs and other interactive devices generally do this. Virtual Reality recreates real-life or fictitious events using computer visuals, advanced sensing technologies, and human-computer interaction. Virtual reality (VR) uses sight, sound, and touch to trick the brain into thinking the virtual world is real, giving users a sensation of presence. This technology is used in entertainment, education, training, rehabilitation, and science (Pham et al., 2020). VR has various benefits and applications that scientists have studied. VR has shown potential in teaching and has garnered study interest. The authors interviewed several people from various businesses and areas. The talk highlighted successes and challenges (Liu et al., 2019). The study compares immersive Virtual Reality to desktop slideshows for teaching science. Additionally, it examines the benefits of generative learning in Virtual Reality lessons.

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/adopting-the-novel-technique-to-save-time-and-resources-by-applying-virtual-reality-in-the-training-industry/356802

Related Content

The Emergence of Politicized Collective Identity in Online News Commentaries as a Form of Social Capital

Nahla Nadeem (2014). *Identity and Leadership in Virtual Communities: Establishing Credibility and Influence* (pp. 47-60).

www.irma-international.org/chapter/the-emergence-of-politicized-collective-identity-in-online-news-commentaries-as-a-form-of-social-capital/97600

An Empirical Investigation of the Impact of an Embodied Conversational Agent on the User's Perception and Performance with a Route-Finding Application

Ioannis Doumanis and Serengul Smith (2019). *International Journal of Virtual and Augmented Reality* (pp. 68-87).

www.irma-international.org/article/an-empirical-investigation-of-the-impact-of-an-embodied-conversational-agent-on-the-users-perception-and-performance-with-a-route-finding-application/239899

Using a Design Science Research Approach in Human-Computer Interaction (HCI) Project: Experiences, Lessons and Future Directions

Muhammad Nazrul Islam (2017). *International Journal of Virtual and Augmented Reality* (pp. 42-59).

www.irma-international.org/article/using-a-design-science-research-approach-in-human-computer-interaction-hci-project/188480

Problem Solving in Teams in Virtual Environments Using Creative Thinking

Aditya Jayadas (2019). *International Journal of Virtual and Augmented Reality* (pp. 41-53).

www.irma-international.org/article/problem-solving-in-teams-in-virtual-environments-using-creative-thinking/239897

Leveraging Virtual Reality for Bullying Sensitization

Samiullah Paracha, Lynne Halland Naqeeb Hussain Shah (2021). *International Journal of Virtual and Augmented Reality* (pp. 43-58).

www.irma-international.org/article/leveraging-virtual-reality-for-bullying-sensitization/290045