Chapter 12
Adopting the Novel Technique to Save Time and Resources by Applying Virtual Reality in the Training Industry

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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

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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.