

Augmented and Virtual Reality Games for Occupational Safety and Health Training: A Systematic Review and Prospects for the Post-Pandemic Era

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Abstract—In recent decades, the usage of augmented reality (AR) and virtual reality (VR) games for safety training and rehabilitation has grown exponentially. However, no systematic literature review of the research trends in augmented and virtual reality (AR/VR) for Occupational Safety and Health (OHS) training has been carried out. The authors conducted a comprehensive review of the relevant literature published between 2016 and 2020. This analysis was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The Scopus database contained 1031 records. However, only 12 papers matched the inclusion criteria and were included in this review. According to the findings, the use of augmented and virtual reality for safety training and rehabilitation has been progressively growing. With robust research trends in this field—in the post-pandemic era, the use of augmented reality and virtual reality games has promising potential, especially for safety training and rehabilitation. This study provides critical insights into how augmented reality and virtual reality may impact the future of safety training and rehabilitation at the workplace.

Keywords—COVID-19, hazard, occupational exposure, AR, VR

1 Introduction

Preventing accidents and ensuring the health and safety of employees at work are extremely important. Meanwhile, augmented reality (AR) and virtual reality (VR) allow people to see a representation of real-world settings even when they are not physically located there [1]. As a result, the use of AR and VR for occupational safety training and rehabilitation has increased over recent decades, most notably in the workplace. It has been extensively used in the context of Occupational Safety and Health (OHS) to ensure safe working conditions in industrial settings and work envi-