**Impact of Augmented Reality and Virtual Reality on Acquisition of Skills**

**Abstract**

Augmented and Virtual Reality have emerged as powerful technologies to learn skills, revolutionizing the way people learn skills related to various fields. This study provides an overview of their impact on skill acquisition, how does it improve the process of learning a skill and what aspects make it different from traditional learning and its future prospects in this direction. In this research paper we explore how environments created by AR/VR facilitate experiential learning, improve motor skills and enhance a wide range of mental/cognitive processes. The implications of AR/VR technology for training programs, professional development, and educational setting are also studied and discussed.

**Introduction**

Augmented Reality (AR) and Virtual Reality (VR) are two exciting technologies that have changed the way we interact with the digital world. AR adds digital elements to the real world around us, while VR creates a completely immersive digital environment. Both AR and VR use special equipment like headsets or glasses to bring these experiences to life.

**AR**

Augmented reality (AR) is an enhanced version of the real world, achieved through the use of computer-generated digital information. These include visual, sound, and other sensory elements. AR uses computer hardware and software, such as apps, consoles, screens, or projections, to combine digital information with the real-world environment.

AR is a growing trend among companies developing metaverse solutions, particularly in mobile computing and business applications.

Augmented reality either makes visual changes to a natural environment or enhances that environment by adding new information. It can be used for various purposes, including gaming, product visualization, marketing campaigns, architecture and home design, education, and industrial manufacturing.

**What is virtual reality?**

Virtual reality is a simulated 3D environment that enables users to explore and interact with a virtual surrounding in a way that approximates reality, as it is perceived through the users' senses. The environment is created with computer hardware and software, although users might also need to wear devices such as helmets or goggles to interact with the environment. The more deeply users can immerse themselves in a VR environment -- and block out their physical surroundings -- the more they are able to suspend their belief and accept it as real, even if it is fantastical in nature.

**Education and skill training**

An important area of application for VR systems has always been training for real-life activities. The appeal of simulations is that they can provide training equal or nearly equal to practice with real systems, but at reduced cost and with greater safety. This is particularly the case for military training, and the first significant application of commercial simulators was pilot training during World War II. Flight simulators rely on visual and motion feedback to augment the sensation of flying while seated in a closed mechanical system on the ground.

As highlighted above, AR/VR technology enhances the learning process of people in various domains and fields through simulations which may put people in various positions by simulating various situations or examples of situations, thereby enhancing experiential learning. This point can be further enunciated with examples of other fields as well, simulated surgical training and skill improvement is known to be one of the most revolutionary uses of AR/VR technology in the healthcare industry, in countries like Nutherlands, and United kingdom the police departments is being trained using AR/VR technology to train them for various emergency scenarios, companies like Walmart have also implemented VR training programs to train employees in various departments etc.

This Research paper will further explore and discuss such innovations, their degree of benefit and effectiveness, as well as further and upcoming implementations. This study will mainly employ existing literature, case studies and empirical research to elucidate the role of AR/VR technology in shaping the future of skill acquisition and lifelong learning.

Related Work