

Virtual Reality

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Abstract

Virtual reality is the concept that is important for students as well as to other persons who used it. In M.Ed. level there is topic on virtual reality. To teach them about virtual reality the concept should be clear not only for students but also for professors. It is the important of the paper that should be clear for every person who are related with this paper. For this study researcher used many books and websites to clear concepts of it. This researcher is of conceptual research. This research is of qualitative based research and also researcher founds definition, history, benefits, theories, misconceptions, concerns, tools of virtual reality used in education.

KEYWORDS: Virtual reality, Second Life, Ed Heads, Roblox, Sloodle, Active Worlds.

Introduction

Virtual reality is the concept of using technology to allow users to interact with a computer-generated environment for entertainment, education, training and design. Ideally, a computer simulates an environment that is complete with physics, simulated objects, sights and sounds, and then outputs that environment into the senses of the user. Modern technology has yet to live up to this ideal, and currently most virtual reality technology is limited to sight, sound and touch. Virtual reality has been popularized through several movies, books and video games, which have sometimes distorted the nature of the technology.

History

Though the term has its roots in fiction and theater, virtual reality as a technology began in the 1950s with the Sensorama, developed by Morton Heilig and conceived as a theater that would address all senses. In 1968, Ivan Sutherland developed the first head-mounted display (HMD), which, with the aid of early wire-frame graphics, allowed users to perceive themselves as being inside a virtual environment. Films like "Tron," television series like "Star Trek: The Next Generation" and books like William Gibson's "Neuromancer" served to popularize the notion, and early versions of the technology have been used in amusement parks, for historical recreations and in video games. While the technology has progressed a great deal, modern virtual reality devices are generally limited to head-mounted displays combined with headphones and gloves that allow for sensation and manipulation of virtual objects through force-feedback and motion-sensor technologies.

Benefits

Virtual reality has many potential uses because it appeals to our intuitive use of information. In education it can allow for the creation of full environments that would

present the experience of hands-on study without needing to leave the classroom. In medicine it can allow students and researchers to treat virtual patients as training and, in combination with advanced robotics, perform surgery at a distance. Engineers can create, modify and test designs in a virtual space, and soldiers can train in virtual war zones. Psychologists and therapists may also utilize virtual reality for treatment purposes, especially in the treatment of trauma disorders.

Theories

Theories on the future and nature of virtual reality include the notion of the integration of the Internet and virtual reality for purposes of communication and data management and the idea of the creation of perfect virtual worlds. Advances in technology are expected to bring about more realistic simulations and possibly a way of feeding sensory data directly into the brain. A competing idea called "ubiquitous computing" reverses the classical notion of virtual reality, bringing the functions of computers into everyday reality, and some theorists speculate that the final result will be some integration of the two. In a variation on the "brain in a vat problem," philosophers have put forward the interesting argument that, should complete simulated realities be possible, then it is possible that they have already been designed and that we are currently in one.

Misconceptions

Because of the popular use of virtual reality in movies, novels and games, there are often misunderstandings about how virtual reality functions and what it entails. For example, there is no reason why being injured in virtual reality should result in injury to the physical body, why electrical hazards would somehow cause you to magically be stuck in a virtual world or exchange places with a virtual entity, or why a virtual entity could somehow manifest itself in physical reality.

Concerns

The primary concern associated with virtual reality is the worry that, given the ability to make simulated realities, humans will choose to live in those realities and ignore this one. Another worry is that virtual reality technology could be used to manipulate and control people by convincing them of false realities or conditioning them by using simulated experiences.

Tools of Virtual Reality Used in Education

Virtual reality educational tools provide exciting and unique learning environments for students. Using virtual reality environments, a student on a computer can experience performing a complex medical procedure without putting anyone at risk. Students take virtual field trips and visit locations on Earth or in space that they otherwise never see. Through computers and the Internet several virtual reality tools are available to educators and students.

Second Life

Second Life is a product of Linden Labs. The program is a full tool to create virtual worlds available to individuals, schools, businesses and other organizations. Second Life provides free software to create anything in a 3D virtual space that makes use of a physics engine. Universities create online classes and labs with this tool. Many individuals and organizations have created virtual environments and other learning tools with this virtual reality software. Costs for virtual environment creation vary on the size and scope of the project. There are many free virtual environments already in existence that are offered for free using software from Linden Labs.

EdHeads

EdHeads is a website by a non-profit organization. The non-profit partners with educational and other organizations such as Motorola and the Ohio State Medical Center. The website lets students experience brain surgery, knee surgery, cell phone creation and other projects within a virtual environment. Students use the mouse to manipulate a virtual scalpel and other tools to accomplish advanced tasks such as medical procedures. This learning tool is appropriate for students from elementary school age through college.

Roblox

Roblox allows students to create and manipulate almost anything they can imagine. Roblox offers free limited accounts as well as two levels of commercial accounts. The commercial accounts allow more environments, more items to manipulate, no advertisements and access to premium developer created content. As of 2010, free accounts could access virtual environments involving the solar system, piloting airplanes and other educational experiences.

Active Worlds

Active Worlds is a virtual environment creation system operating since 1999. Active World offers reduced pricing for organizations creating educational environments. Participating groups include Harvard, Brown, and Howard University. Students access the virtual learning tools through a free application that runs in web browsers such as Internet explorer.

Sloodle

Sloodle is a freeware software project attempting to merge the Moodle course management software with Second Life virtual worlds. Sloodle allows students to enter Second Life, register and participate in activities that are integrated with a Moodle course. The software offers cross-platform chat rooms, the ability for students to vote and see results within Second Life and the ability for educators to present slides and websites to students from within Second Life. As of 2010 there are free Sloodle examples on Second Life accessible through the Sloodle website.

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