

**W. A. Hawke Robinson  
Recreation Programming  
RCLS-385-01 (2007-01-17)  
Creative Program Ideas & Trends  
Virtual Reality for the Disabled.**

Using Virtual Reality technologies to help those with various disabilities (except blindness) to engage, in a 'virtual' way in activities that would normally be very difficult, if not impossible for them in the 'real' world.

Technology is quickly catching up to make this a more and more viable option for recreation opportunities for people that would otherwise be extremely limited in their recreation choices. It could quite literally open up an entire 'new universe of possibilities'.

As the technology becomes less intrusive and more transparent, as well as the costs less prohibitive, it will likely become a very effective tool both in recreation and rehabilitation, and the probable trend is that it will become more and more mainstream and adopted by a larger segment of the population each year, including both those with disabilities and those without.

'The goal of a virtual reality (VR) system is to place the user in a synthetically generated three-dimensional environment, that he or she can directly manipulate. Ideally, users cease to think of themselves as interacting with a computer; they think of themselves as interacting with the environment it has created. Special input and output devices allow a user to interact with a virtual environment. These capture the user's motion and gestures and produce the sensory feedback from the synthetic environment to the user's vision, hearing and touch.'

*'VR technology is of inherent interest to those with disabilities for four reasons (Lanier 1992, Middleton 1992):*

- *It allows them to perceive what they might not otherwise be able to since it can gather information in a sensory modality in which they are impaired and deliver it to one where they are not.*
- *It can render a world in a customised manner - this can help people to start learning activities in a simplified form before transferring their skills to the more complex real world. This approach has been used with children who have learning difficulties (Burns 1993).*
- *VR technology has to be adaptable to the individual senses and capabilities of the user if it is to provide a satisfactory illusion of reality. This means that well-designed VR devices are inherently adaptable to a wide range of individual needs.*
- *Users of networked virtual environments will have control over the way in which they project themselves to others. This means that those with special needs can interact with other users on an equal footing.*

**Virtual Reality techniques can also be used in rehabilitation technology through compensation of motor and sensory deficits, allowing a disabled person to explore and manipulate new environments. It therefore has the potential to be used as a training aid for skills such as spatial co-ordination and orientation.**, [http://observer.guardian.co.uk/uk\\_news/story/0,,1810779,00.html](http://observer.guardian.co.uk/uk_news/story/0,,1810779,00.html) Mind power allows disabled to take a virtual stroll

**Jo Revill, health editor  
Sunday July 2, 2006  
[The Observer](#)**

'A new 'virtual helmet' which harnesses the power of brain waves is allowing severely disabled people to feel as if they can walk and move again, opening up the prospect of using the mind to help them control wheelchairs, computers and even false limbs.

Just by imagining their feet moving, patients using wheelchairs can again experience what it feels like to stroll down a high street, thanks to the work of British scientists who have found a new way of using the power of thought. They have devised the helmet which can link brain wave patterns to a virtual reality system, allowing the wearer to enter an illusory world of movement.'

'I found it exciting, very exciting,' he said afterwards. 'At first it all felt strange, having the cap on and being asked to think about moving my feet, but gradually I felt as if I was in that world. At one point I completely forgot it was a virtual world and that I was part of this experiment. It was really interesting, and much more enjoyable than I expected.'

<http://www.tiresias.org/reports/hdti4.htm>

<http://citeseer.ist.psu.edu/kuhlen95virtual.html>

<http://www.csun.edu/cod/conf/1999/proceedings/session0031.htm>

[Virtual reality boosts rehab efforts](#) Life-sized, 3D video game allows patients to 'be the joystick'

<http://www.msnbc.msn.com/id/16266245/>