

Wii-like technologies may help stroke survivors improve communication skills

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Motion sensing technologies, such as the Nintendo Wii Remote, could be used in the rehabilitation of people with aphasia - a language impairment, commonly caused by a stroke, that affects around 250,000 people in the UK.

The research is being carried out by a team at City University London, in collaboration with the [Stroke](#) Association and funded by the Engineering and Physical Sciences Research Council (EPSRC).

The aim is to develop an affordable, computer-based technology to help [stroke survivors](#), who have limited spoken or written output, learn how to 'gesture' independently at home.

Gestures that can be readily interpreted by others are often advocated in aphasia treatment, but can be difficult for aphasic people to learn, because they have additional stroke-related disabilities, such as one sided paralysis. Gesturing can be improved through therapy, but one-to-one sessions can be costly and therapy resources are scarce.

The project will create a [prototype system](#) that enables users to practise gesturing, receive instant feedback, and master the movements through repetition. It will be run by a multi-disciplinary team from City's Centre for Human-Computer Interaction Design (HCID), and Department of Language and Communication Science.

"Gesture tracking and recognition technologies are becoming a

ubiquitous part of new computing and gaming environments, ranging from Apple's touch-screen iPad through the hand-held [Nintendo Wii](#) Remote to Microsoft's forthcoming Kinect for the Xbox 360, which will track users' movements without the need for a handheld controller," says Stephanie Wilson, Senior Lecturer in HCID at City University London. "Whilst popular in gaming, we will evaluate the suitability of such technologies in aphasia rehabilitation."

Jane Marshall, Professor of Aphasiology at City University London, adds: "Computer-based treatments have been shown to improve verbal language skills in previous studies, but this is the first time that gestures will be addressed. With 45,000 new cases in the UK each year, we hope that our work will help a wider range of aphasic people to regain communication skills."

Dr Sharlin Ahmed, Research Liaison Officer at The Stroke Association, says: "Communication difficulties are the most frustrating disability that stroke survivors are left facing. This very exciting and intuitive project could go a long way towards helping breakdown some of the barriers of communication that people with aphasia have to tackle. 150,000 people have a stroke in the UK every year and the use of new technology could help them regain their lives, so The Stroke Association is very proud to be a part of this."

The project - known as Gesture Recognition in Aphasia Therapy (GReAT) - will run for 18 months. It plans to test the prototype via 30 of the Stroke Association's Stroke Clubs in the London area. Volunteers will use the system, explore its capabilities and report back to the project team, while workshops for aphasia therapists will explain how the system works and its potential benefits. People with aphasia will also be employed as consultants during the development of the technology, to ensure that it is fit for purpose.

Provided by Engineering and Physical Sciences Research Council

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