

TABLET-BASED GAMES FOR STROKE REHABILITATION

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Abstract

It is recognised that stroke rehabilitation focuses on physical treatment rather than cognitive treatment and in order for a stroke patient to stand a chance at a full recovery they must exercise for at least 45 minutes a day. It is essential that patients continue their rehabilitation at home. Traditional stroke exercises are normally repetitive and monotonous which can result in stroke patients lacking motivation to do their daily exercises. Research indicates that a strong link exists between games and motivation. The aim of this project was therefore to produce a tablet based game which may be useful in the rehabilitation of stroke patients.

Background research was undertaken to determine what type of game should be created. It was clear the game had to be engaging so that a patient would be motivated to continue their rehabilitation. It was decided a maze game where a player controls a sprite had the potential to exercise a patient in several different ways. It was clear creating a web based game had great potential. The game created used both the device's orientation and the touch screen for input to control the sprite. The game had the capability of providing feedback both to a patient and to a therapist.

The final product met the requirements and beyond. A stroke specialist commented on how the game could be useful in stroke rehabilitation, although it would only be useful for a small minority of stroke patients. This is due to it being common that a patient's entire limb may be affected rather than just their fine motor skills. The stroke specialist also identified a possible issue with using a tablet due to the average age of a stroke patient being around 75. For example, this could mean they are not familiar with how a touch-screen works.