ABSTRACT

Stroke is a type of disease that is quite dangerous and can cause death as reported by WHO (2019). Rehabilitation is a method that can be used for stroke patients in recovering post-stroke conditions. However, due to the lack of economic constraints, stroke sufferers are forced to stay at home without regular physical physiotherapy exercises. Therefore, innovations from Mixed Reality-based technology are used for independent therapy that combines Augmented Reality and Virtual Reality Technology. In this study, we designed and developed a mixed reality-based application using the marker-based tracking method to assist post-stroke patients in joint range of motion exercises for the therapy of muscle stiffness in the upper extremities by knowing the improvement and knowing the effectiveness of the application when used. Based on the results of the trial, it was found that there was an increase in the angle of movement of the upper arm of post-stroke patients between the first and fifth day by 30 degrees in the right hand and forearm of the right hand by 10 degrees while for the left hand the upper arm increased by 15 degrees and for the forearm. 20 degrees. So it can be concluded that there is a significant effect between mixed reality-based device therapy on the ability to move the upper extremities in post-stroke patients

Keywoard : Stroke, Augmented Reality, Virtual Reality, Mixed Reality.