Abstract

Neurological dysfunction in stroke disease generally causes a decrease in the function of the body of the sufferer. One part of the body which is often paralyzed is hand. Efforts to improve the patient's motor function is through the training provided in rehabilitation or therapy. However, rehabilitation mostly located in hospitals and medical clinics. Consequently the patients who do not have a high level of mobility may have difficulty accessing the rehabilitation center. Thus, to facilitate presenting the rehabilitation of post stroke patients, an application that uses the technology of Augmented Reality (AR) is built.

AR-Therapy application is developed by marker-based AR technology used to create an artificial 3D environment for hand therapy after stroke. Construction of artificial therapy environment is fitted to the level of the user's hand muscle strength (at least the user can perform motion which doesn't against gravity for example shifting hands). Training results in this application are user training duration and the number of points obtained by the user.
This app has been tested on post-stroke patient with right hand muscle strength 2 and the other post-stroke patient with left hand muscle strength 3. From the test results, it can be concluded that the application can create the training environment for hand rehabilitation that is fitted to the user's hand muscle strength. So, it indirectly gives stimulus for users to perform movements to train her or his hand. In addition, through this application the user can monitor their training history.

Keywords: Augmented Reality, Hand Therapy, Post-Stroke.