

ABSTRACT

There are lots of method that claimed have great effects on increasing someone is concentration, one of it is doing a Brain Gym. Brain Gym is a movement that designed to help the brain to function better. There are lots of study that prove Brain Gym really works to improve brain's ability but until now the study still only has quality of subjective study and because of that it needs a study that have a quality of objective study and have a concrete data to see if Brain Gym movements really can improve concentration. Electroencephalograph or often abbreviated as EEG is a device that can record electrical activity along the scalp. EEG measures voltage fluctuations produced by ionic currents in brain neurons so that it can provide concrete data in the form of signals or waves that indicate electrical activity in the brain that can be analyzed to support this research.

The purpose of this study is to create a system that can prove that Brain Gym movements really can produce a movement that need some level of concentration by analyzing Alpha and Beta Wave that produced when doing Brain Gym and in relax state based on the impact of Brain Gym to the brain that read and monitored by EEG. The system used in this study are BPF filter for Alpha and Beta signal filtering process, Discrete Wavelet Transform (DWT) with the type of haar and daubechies 2 until daubechies 10 for the feature extraction and Support Vector Machine (SVM) using Linear, RBF/Gaussian and polynomial kernel for the classification.

The final result of this research is a system that is able to classify the class of EEG Brain Gym signal test data with the highest accuracy of 70% using DWT daubechies 3 and Kernel SVM Polynomial types.

Keywords: Concentration, Brain Gym, EEG, DWT, SVM