ABSTRACT

In carrying out daily activities, concentration is very important in human life. The concentration of each human being is not the same, there are so many factors that affect concentration. One way to train increased brain concentration is Brain Gym. Brain Gym is brain exercise which is a physical activity that is used to stimulate the two hemispheres of the brain so enable to maximize brain performance.

The purpose of this study was to analyze the influence of Brain Gym on the brain signals produced by respondents using an electroencephalograph (EEG) tool and find the value of accuracy between training data and the best test data. The Discrete Wavelet Transform (DWT) method as feature extraction and classification method uses K-Nearest Neighbor (K-NN) with input in the form of EEG signal data.

The test results showed that the best performance from the results of system training was found in all values of $k = 1$, indicating a value of 100% accuracy both on AF7 and AF8 channels. The results of the system testing show that the best performance on the AF7 channel uses euclidean K-NN type and the value $k = 1$ shows an accuracy value of 71.43%. While the results of testing the AF8 channel system that the best performance uses the chebychev K-NN type and the value of $k = 1$ shows an accuracy value of 82.14%. So that in this test it can be concluded that the AF8 channel is better at capturing EEG signals. The alpha brain gym signal shows higher Power spectral compared to the normal alpha signal, while the normal beta signal Power spectral looks higher than the brain gym state. This study proves that brain gym has an influence on one's concentration.

Keywords: brain gym, concentration, EEG (electroencephalograph), DWT (Discrete Wavelet Transform) , K-NN (K-Nearest Neighbor)

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