Meditation Based Brain Painting Promotes Foreign Language Memory through Establishing a Brain-Computer Interface

Authors : Zhepeng Rui, Zhenyu Gu, Caitilin de Bérigny

Abstract : In the current study, we designed an interactive meditation and brain painting application to cultivate users' creativity, promote meditation, reduce stress, and improve cognition while attempting to learn a foreign language. User tests and data analyses were conducted on 42 male and 42 female participants to better understand sex-associated psychological and aesthetic differences. Our method utilized brain-computer interfaces to import meditation and attention data to create artwork in meditation-based applications. Female participants showed statistically significantly different language learning outcomes following three meditation paradigms. The art style of brain painting helped females with language memory. Our results suggest that the most ideal methods for promoting memory attention were meditation methods and brain painting exercises contributing to language learning, memory concentration promotion, and foreign word memorization. We conclude that a short period of meditation practice can help in learning a foreign language. These findings provide new insights into meditation, creative language education, brain-computer interface, and human-computer interactions.

Keywords : brain-computer interface, creative thinking, meditation, mental health

Conference Title : ICICTE 2022 : International Conference on Information and Communication Technology in Education

Conference Location : London, United Kingdom

Conference Dates : August 16-17, 2022