

Effects of quantitative electroencephalogram normalization using 4-channel live z-score training neurofeedback for children with learning disabilities: preliminary data

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Children with learning disabilities (LD) can have difficulties in reading at word level, text comprehension, writing or arithmetic. Several studies have shown the efficacy of neurofeedback (NF) in improving learning skills through brainwave operant conditioning in children with LD. The aim of this work was to show the efficacy of live z-score NF training (LZT) for quantitative electroencephalogram (QEEG) normalization in school children with LD. Twenty-eight children aged 10-15 years with LD participated. Ten 30-min sessions of QEEG-guided LZT using patient's highly preferred feedback were applied. After 10 sessions of QEEG-guided LZT, participants showed statistically significant improvements in QEEG normalization and a statistically significant small to medium improvement in the Cognitive and Emotional Checklist. The results suggest that LZT-NF produces a tendency towards normalization of brain waves in children with LD, and might be advised as a therapeutic alternative or coadjuvant along with cognitive interventions.