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The Effectiveness of Cognitive Intervention Based on Neurofeedback on Improving Academic Performance and Emotional Regulation in Students with Learning Disabilities

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1. Round 1

1.1. Reviewer 1

Reviewer:

The sentence “Despite various traditional interventions, neurofeedback has emerged as a promising non-invasive technique…” would benefit from a clearer transition. Consider briefly naming those traditional interventions before introducing neurofeedback to provide a more grounded comparison.

The claim “Research further supports the mechanisms underlying neurofeedback training…” would benefit from a more precise description of the neuroscientific mechanisms mentioned, such as specific connectivity metrics (e.g., coherence, phase-locking value).

The DERS description could be improved by specifying whether it was self-reported or parent/teacher-reported, which is particularly relevant for an 8–14-year-old population.

In the first session description, “a baseline EEG assessment is conducted…”—please include information on the EEG system specifications (e.g., number of channels, frequency bands trained, software used).

The sentence "Neurofeedback training targets theta/beta ratio regulation…" should be supported by literature specific to LD populations indicating the effectiveness of this ratio modulation.

It would strengthen the methodology section to include a standardized protocol or manual reference for the neurofeedback training to ensure replicability.

The statement "Results from the repeated measures ANOVA showed…" repeats content already discussed in the findings. It would be more impactful to synthesize and interpret those results in light of theoretical models (e.g., self-regulation theory, neuroplasticity frameworks).

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The claim "This intervention has shown particular efficacy in treating learning disabilities…" should be strengthened by referencing more than one high-quality meta-analysis or longitudinal study, as current citations are predominantly individual or small-sample studies.

The sentence "Comparative studies have further supported the effectiveness of neurofeedback over other cognitive and behavioral interventions…" should clarify whether these findings apply across age groups or specific subtypes of learning disabilities (e.g., dyslexia vs. dyscalculia).

The phrase "Participants were 30 students diagnosed with learning disabilities…" lacks detail on the diagnostic criteria or assessment tools used for LD identification. Please clarify the clinical or educational standards applied.

When introducing the Academic Performance Rating Scale (APRS), please include internal consistency values (e.g., Cronbach's alpha) from the current sample or past studies to reinforce reliability.

While means and standard deviations are informative, it would improve clarity to mention whether the differences observed were statistically significant before proceeding to inferential analyses.

The sentence "The assumptions of normality, homogeneity of variances, and sphericity were examined…" could benefit from specifying whether any violations were borderline or required transformations that could influence ANOVA robustness.

Please consider adding confidence intervals alongside effect sizes (η^2) to provide a more comprehensive understanding of the magnitude and precision of the effects.

Authors uploaded the revised manuscript.

2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.

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