

The effects of Peak Performance Training on a group of students statemented with AD(H)D

Research Project
Nov 2005 – Oct 2006

Study Design

During the academic year, 2005 to 2006, 38 students from three academic centres on the Wirral, from year groups 6 and 7, completed a placebo controlled positive research paradigm into the effects on their cognitive function as a result of HeartMath training. Additionally, all students, were statemented, as part of the project, with either ADD or ADHD.

The primary hypothesis was that “HeartMath improves aspects of cognitive function, post training, to a significance $p > 0.05$ in the intervention group”. This means that the amount of improvement was statistically significant and that the probability of this improvement happening by chance was greater than 1 in 20 (the measure for statistical significance).

All students went through a battery of tests, including:

- CDR Cognitive Function Testing (independently validated)
- Freeze Framer measurements (measuring physiological coherence)
- Connors Teacher Rating Scale Questionnaire
- Children’s Strengths and Difficulties Questionnaire
- Adult Strengths and Difficulties Questionnaire
- Anecdotal Feedback

Depending upon group assignment, students either completed Lego modelling exercises or completed HeartMath training. All students received HeartMath training, ultimately. Lego was chosen as an active placebo as a result of positive research from the US¹.

Project Structure

- Placebo Control (Lego) Group received 15/20 minutes contact time with LSRA four times per week over six-week period. Student was free to build a model of choice over the six-week period. Student then moved to HM Group.
- HeartMath Group received 15/20 minutes contact time with LSRA four times per week over six-week period. Student was trained in techniques, which were reinforced with a one track “Lock In” plus playing “Rainbow” game in Freeze Framer.
- All students received HeartMath training. Not all students received Lego training.

¹ Use of LEGO® as a Therapeutic Medium for Improving Social Competence, Daniel B. LeGoff, Journal of Autism and Developmental Disorders, Issue: Volume 34, Number 5, October 2004, pp557 - 571

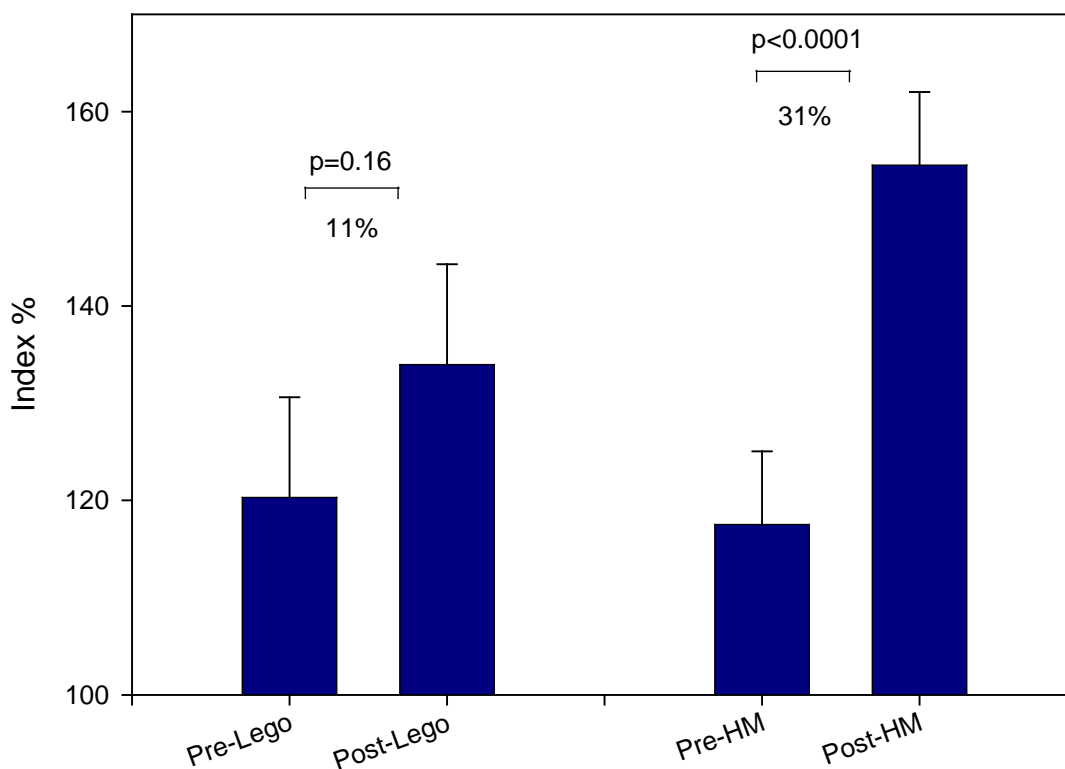
Headline Results

- There was a statistically significant increase in the Quality of Verbal Episodic Memory (QVEM) to the Intervention Group, and a less than significant increase in the Placebo Control Group. This supports the primary hypothesis.
- Both Speed of Recall and Accuracy of Recall increased significantly in the Intervention Group only.

Quality of Verbal Episodic Memory is key to a person's ability to learn and recall information (and in this study, words). Verbal Episodic Memory is the subsystem used most extensively in the classroom environment.

Quality of Verbal Episodic Memory (all factors) – Control v. HeartMath

VERBAL EPISODIC MEMORY INDEX



p=0.16 represents 1 in 6.25 probability
 p=0.0001 represents 1 in 10,000 probability

Summary of Results for HM Group for tasks pertaining to QVEM

- Immediate word recall task (ability to correctly recall words immediately after presented on screen) **improved overall by 24%**
- Delayed word recall task (ability to correctly recall words 15mins after presented on screen) **improved overall by 45%**
- Word Recognition task (ability to correctly recognise words from original list, randomly interspersed with new words, 15mins after presented on screen) **improved overall by 28%**
- Vigilance task (ability to accurately and quickly recognise pairs of numbers presented at very high speed on screen) **improved overall by 9.5%**

Physiological Change

Based upon change, pre training and post training, of a group's "coherence score", measured using Freeze-Framer, we find that overall, the control group's coherence reduced over the six-week analysis period, whereas the HeartMath group's coherence significantly improved over the same period, post training.

