

# special needs guide

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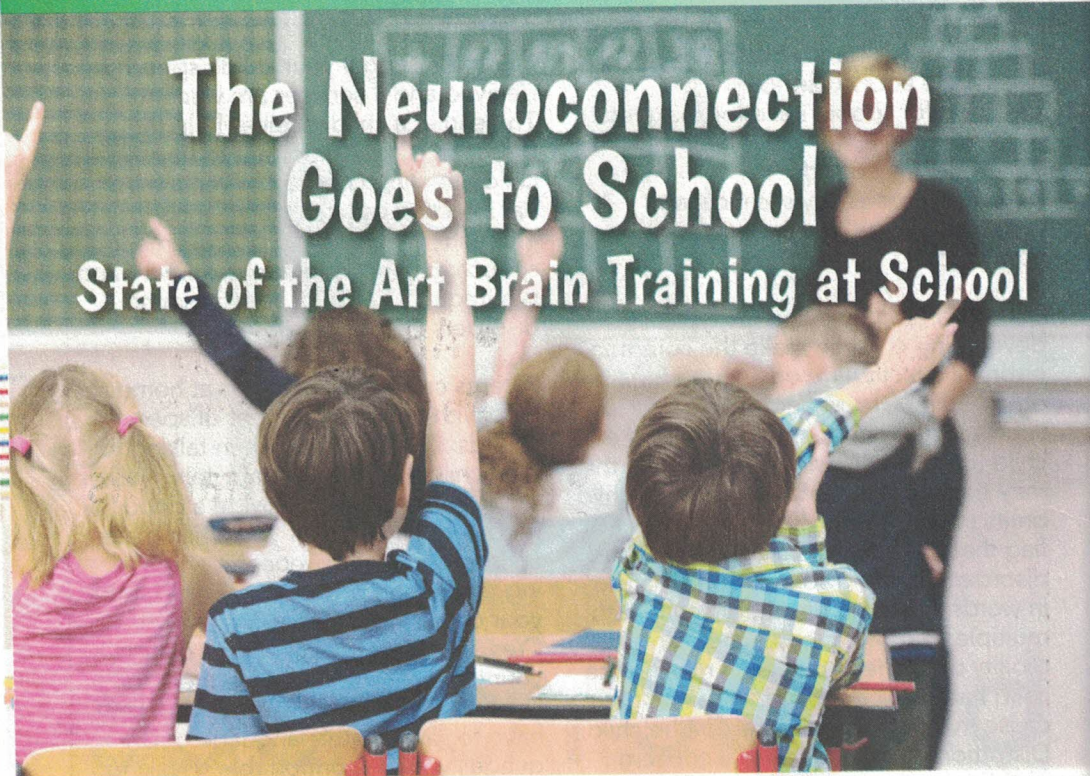
**New Attractions!**

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# The Neuroconnection Goes to School

## State of the Art Brain Training at School



According to the Center for Learning Disabilities, learning and attention issues affect 1 in 5 children. These issues are not the result of low intelligence, vision or hearing problems, or lack of access to quality education. Rather, the 1 in 5 have brain-based difficulties in reading, math, writing, organization, focus, or social skills. Many of these students are prescribed medication, given an IEP, or are sent to tutoring. And yet despite various interventions, the problem persists.

Since Fall of 2015, The Neuroconnection, in addition to improving cognitive and emotional health in their Naperville clinic, has sought to tackle the issue at the source by partnering with Harvest Christian Academy to provide state of the art neurofeedback training at school. Students participate in individualized training sessions twice per week and after just a few weeks of training typically see dramatic improvements in and out of the classroom.

Teachers notice better classroom engagement, improvements in standardized test scores, increased focus, and overall improved academic performance. Parents see noticeable improve-

I am so encouraged by her improvements with writing/ spelling. All her numbers are correct! She wrote a short story and her handwriting was so neat. Almost all her words were spelled correctly. I was shocked and asked her if someone helped her with her spelling and she said "No, I wrote it all by myself."

Karyn Goodwin (Reading Specialist)

ments in symptoms related to mood, behavior, and social pragmatics. Students who participate in the program also improve in measures of cognitive function such as memory, complex attention, and cognitive flexibility. To date The Neuroconnection has improved the educational outcomes of HCA students, in addition to hundreds helped through the clinic and home training programs.

The benefits of CNFB training can be seen in a variety of ways. These are demonstrated in the following outcome graphs representing improvements in overall number of problematic symptoms, computerized cognitive test scores, and standardized test scores.

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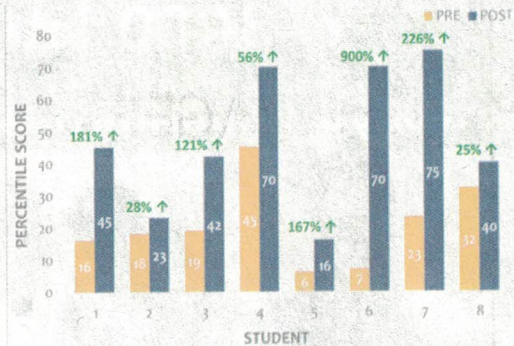
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## Computerized Cognitive Testing

This neurocognitive assessment measures mental processes that are vital to a child's success in school.

The Neurocognitive Index (data shown above) is an average of five domain scores: Composite Memory, Psychomotor Speed, Reaction Time, Complex Attention, and Cognitive Flexibility. It represents a global score of a child's neurocognition.

The table above represents 8 HCA students before and after completing at least 10 sessions of neurofeedback training in school. All students presented with ADHD, ADD or no formal diagnosis.



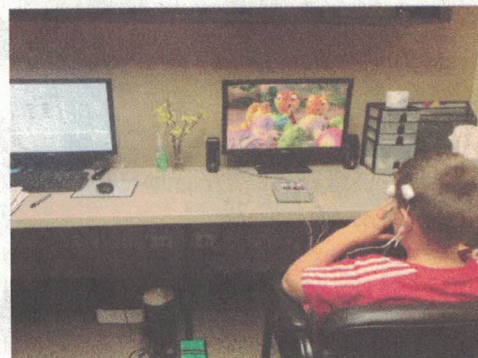
I have observed decreased impulsivity, irritability, and compulsive bx with [him]. He has become more confident in his reading and is keeping up with his school work, even after weaning him off all medication.

Mother of 9th grader with ADHD

## What is Connectivity Neurofeedback?

Neurofeedback uses EEG to give the brain information about itself in real time and asks it to adjust. These adjustments act as "exercise" for the brain and over time teach the brain to function in healthier and more efficient ways. This non-invasive, drug free approach has been proven to enhance the brain's ability to regulate itself and therefore improve the brain's ability to function optimally.

Connectivity Neurofeedback (CNFB) is more accurate than traditional NFB because it measures the neuronal network activity in three dimensions across regions. This is in contrast to traditional NFB which only trains specific sites. CNFB allows for improved communication within the brain and in turn decreases neurologically rooted symptoms.



Upon a 1-year follow-up, her mother reports she has seen very good improvement in Kenzie, emotionally and academically. She is now on track to being at grade level in math as she approaches 6th grade.

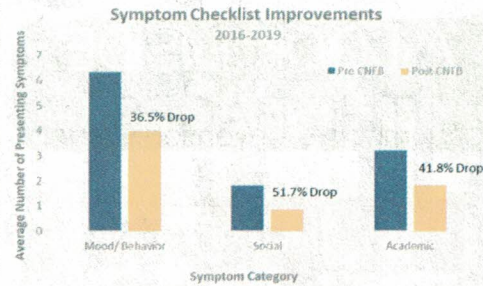
Mother of 11 year old with math skills below grade level

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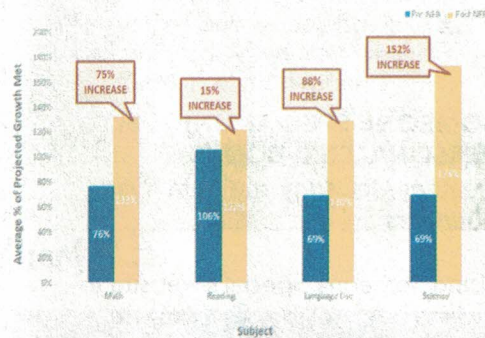
## Symptom Checklist Improvements ('16-'19)

Before and after each set of sessions parents fill out a "Symptom Checklist" for their child. This tracks 82 symptoms that are grouped into three categories: mood/behavior, academics, and social. This graph represents the striking drop in the number of symptoms parents reported after neurofeedback training. This includes all HCA students (n=56) who completed at least 10 sessions and provided a follow-up symptom checklist upon completion of their final session.



## RIT Growth Projection Improvements

RIT Growth scores earned by the students were compared to their growth projection before and after completing NFB. The percent of the projected growth met by students were averaged for each subject. Following training, students demonstrated improvements on standardized MAP testing by meeting a higher percentage of their projected growth scores across the board.



This graph represents 7 HCA students completing at least 10 sessions between pre and post MAP Testing showed gains in % of projected growth met on MAP testing.

[He is] more focused; He is now absorbing material and processing. He is also contributing to class discussions.

10th Grade Math Teacher

Overall, [he] is a different learner in my classroom. He is active and engaged in our learning. By the time I give direction, answer questions and walk to his desk, he has followed through with the expectations. Very rarely do I have to redirect a step-by-step process. I am rejoicing in [his] advancing progress with NFB training!

Heather Pfister (1st grade teacher)

Reducing problematic symptoms can significantly improve academics and experience within the classroom for both students and teachers as students are able to focus, interact more appropriately, and learn. Since these changes are lasting, addressing learning issues impact and improves a student's academic career throughout, enabling them to avoid the

pitfalls of falling far behind and missing important academic building blocks. The Neuroconnection is currently one of the few clinics in the country to provide CNFB in schools, and with learning and attention difficulties on the rise this non-invasive, non-pharmacological solution is becoming increasingly more vital to a successful educational experience.