Strengthening Academic Performance by Targeting Cognition: Skylar's Run in an After School Program

- **Client:**
  The YMCA
- **Location**
  Beverly, MA
- **Setting:**
  After School program
- **Student Focus:**
  General education students without attention difficulties attending the after school program

The Distraction Dilemma

At the YMCA in Beverly, Massachusetts, staff noticed a common challenge during after-school hours: Whether it was a door closing, kids talking in the hallway, or activity in the gym, students struggled to maintain focus on their homework and other activities.

These weren't kids with diagnosed attention or hyperactivity problems—they were typical elementary students facing everyday focus challenges. But the staff knew these distractions weren't just disruptive—they were real barriers to learning. The question was: How do you help students build better focus along with foundational learning skills in an after school environment and in a finite period of time?



Greater Beverly YMCA

The YMCA is a nonprofit community organization that provides programs focused on youth development, healthy living, and social responsibility. Their afterschool programs offer children a safe environment with homework help, recreational activities, sports, arts and crafts, and structured care while parents are at work.

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"My son wants to try to complete his work on his own and wants to be more independent when he can."

Parent of student
in the program

She's doing much better in so many areas.

- Parent

The Game Changer: Skylar's Run

The Greater Beverly YMCA piloted **Skylar's Run**, a cognitive skill training curriculum that uses real-time attention measurement to help students strengthen their focus and executive function. Over 6 weeks, 14 students (average age = 9) completed the curriculum. Skylar's Run dynamically adjusts its difficulty to ensure it's never too hard or too easy, keeping students in their "zone of optimal" engagement" in order to foster learning. The game consists of 15 missions in the initial implementation phase that target different cognitive skills. The first 3 missions are all about mastering attention. Once the student completes these missions, they move onto higher order cognitive skills such as inhibition, cognitive flexibility, and interference control.

What made it work:

- Students worked independently on iPads—minimal staff supervision needed
- Game-based learning environment keeps kids excited to participate and minimizes distraction
- Flexible scheduling worked around sick days, vacations, and program changes

The Cognitive Results

None of the students started the program with diagnosed attention problems.

Yet staff observations showed noticeable improvements in attention and impulsivity across the board: Staff rated students as having significantly fewer attention challenges, with a 49% average reduction of symptoms across the group. Plus, **79% of students improved by at least 25%**.

Most notably, before completing Skylar's Run, 9 of the 14 students frequently were distracted by noises and stimuli, per the staff-rated Vanderbilt Questionnaire. After completing the initial phase of the curriculum, zero students struggled with distractions.

The improvement wasn't just in "paying attention." Staff specifically noted real-world gains in the specific executive function skills targeted in Skylar's Run:

- **Sustained attention – staying focused over time**
- **Focused attention – blocking out distractions**
- **Following through on instructions**
- **Completing tasks without constant redirection**



The Academic Results

Gains that Transfer to Academics Outside of the Game

Despite Skylar's Run targeting domain-general cognitive skills and non content specific skills like math and reading, students showed improvements in both math and reading fluency per the Woodcock Johnson Tests of Achievement.

Math Fluency: Students who improved gained on average the equivalent in **11.6 months** of age in math skills in just 6 weeks of training. That means in a month and a half, many students made nearly a full year's worth of progress.

- **73%** of improving students improved the equivalent of 10 months in age
- **82%** gained the equivalent of 6 months in age
- **100%** of improving students gained the equivalent of 3 months (still remarkable given the curriculum is only 6-8 weeks long)

Reading Fluency: Students who improved gained on average the equivalent of **13.7 months of age in** reading fluency—more than a full grade level in 6 weeks.

- **71%** of improving students gained at least 10 months
- **86%** gained at least 6 months
- **100%** of improving students gained at least 3 months

Built on Science, Proven in Practice

Skylar's Run uses **real-time neuroadaptive technology** that measures each student's attention state and adjusts the training difficulty accordingly. This personalized approach ensures:

- Every student is challenged at their own level
- Skills are built progressively and systematically
- Training targets the specific neural pathways for attention and executive functions
- Improvements transfer to real academic and behavioral contexts

Why the YMCA Setting Matters

Skylar's Run is designed for the realities of after-school settings:

- **Minimal staff training** – students work independently
- **Flexible scheduling** – 2-3 sessions per week, 20-30 minutes each
- **High engagement** – game format keeps kids motivated
- **Works in busy environments** – no quiet space required
- **Scalable** – individual or small group settings
- **Evidence-based** – validated assessment tools track progress