

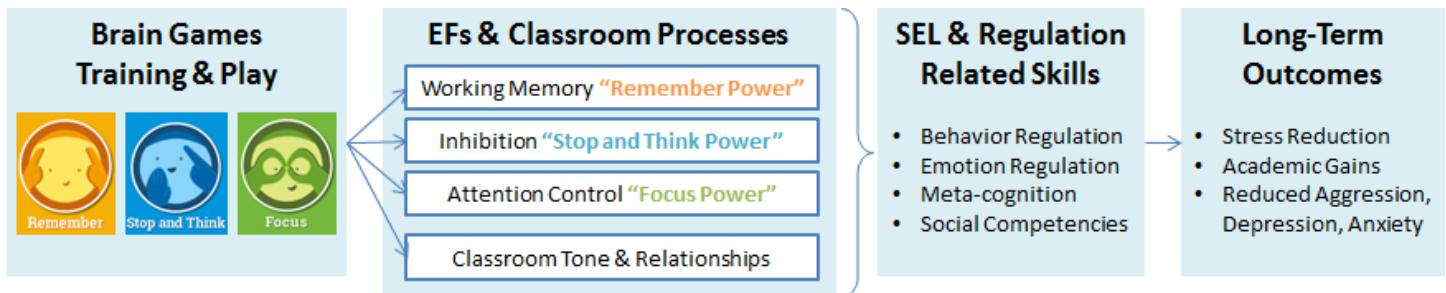
# Testing a New Kernel of Practice Focused on Children's Executive Function and Self-Regulation: Preliminary Findings from a 3-School Pilot Study

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**What are Brain Games?** Developed by Dr. Stephanie Jones at the Harvard Graduate School of Education, Brain Games are fun, motivating, often physically engaging games that are designed to build and practice children's executive function and self-regulation and can be easily integrated into daily routines and transitions across various settings (classroom, hallways, gym, lunch, etc.).

- Brain Games were initially developed as part of a comprehensive PreK-3rd grade social-emotional learning intervention called SECURE (Jones, Jacob, & Bailey, 2014).
- The version of Brain Games included in this study was adapted to be a stand-alone **kernel of practice**
- Each Brain Game is designed to target a core executive function (EF) skill: working memory, response inhibition, or attention control. These skills are introduced to students as their “Brain Powers.”
- **Pre-Game Talk and Post-Game Talk:** Before playing, teachers and students have a conversation to build meta-cognition and shared vocabulary around the skills. Through debrief questions, teachers and students discuss how to use these skills in other times of the day – connecting “Brain Powers” to work ethic in the classroom, teamwork and relationships with others, and successful behavior in school and beyond.



## Pilot Study Measures:

*Weekly Implementation Logs.* Teachers completed tracking logs that detailed which Brain Game they played, when they played, if they engaged in pre-game or post-game talk, and how it went.

*Teacher Ratings of Regulation Skills.* Teachers rated the executive function and self-regulation skills of each child in their classroom. Across 20 items, teachers were asked to indicate: “How often have you observed this child using the skill or behavior in the last three weeks?”

- Example items include: “wait patiently for his/her turn” or “become easily distracted.”
- 5-point scale ranging from “never” (1) to “all the time” (5).
- In each wave the items together were found to form an internally consistent and reliable total score (Fall  $\alpha = 0.97$ , Winter  $\alpha = 0.96$ , Spring  $\alpha = 0.95$ ) and were therefore averaged to create a total Regulation Skills score.

*Teacher-Reported Discipline Rates.* Teachers also provided information on how often (none, one time, or two or more times), since the start of the school year, the student had been sent to the principal’s office, to an in-school suspension, home or removed from school, or to an alternative classroom.

*Observations.* Trained observers completed hour-long observations of all available classrooms and rated:

- *Teaching Strategies and Classroom Practices.* Ten items related to classroom structure and management, discipline, and supporting self/emotion-regulation and EF were rated on a 5-point scale; scores were averaged to create a total Positive Classroom Practices score; (Fall  $\alpha = 0.81$ ; Winter  $\alpha = 0.82$ ; Spring  $\alpha = 0.85$ ).
- *The Proportion of Children Displaying Regulated Behavior.* The classroom regulated behavior items were rated using a percentage scale (0-100%) indicating what percent of the students in the classroom displayed the relevant behavior during the observation period. Generated a total Classroom Regulation score; (Fall  $\alpha = 0.96$ ; Winter  $\alpha = 0.97$ ; Spring  $\alpha = 0.97$ ).

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**What did teachers report about their experiences playing Brain Games?**  
Qualitative data from Weekly Implementation Logs

Overall teachers reported their **students to be very engaged in Brain Games**. For example:

- “I heard lots of energized, fun participation”
- “The students were very excited when they learned that I was going to put a twist on it. They were wondering what the twist was this time.”
- “I noticed that the students listened. They had to listen because the Brain Game was new and they needed to follow directions.”
- “Before we start our day (everyday) we practice our Brain Powers. Kids love it!”
- “Students did a good job of listening. They are taking some interesting things to grandmas.”

In addition, teachers reported that **using Brain Games helped their students calm down or transition** from one activity to another. For example:

- “It was a way to get their wiggles out”
- “We do this [play the game] almost every morning to settle them down before circle time. It helps get kinks out.”
- “Every day we practice our Brain Powers to start the day. We have to do Simon Says everyday – and Freeze. These make their day!”
- “Students are focusing more and listening for directions during the game which is calming them more”

Teachers also reported that **playing the games helped their students get ready for other classroom activities** and settled them for learning. For example:

- “Students begin really thinking outside of the box. They seemed to be challenging themselves. It was fun!”
- “I noticed students seemed to be more focused and alert during testing”
- “Students were more attentive during instruction”
- “It helped students to settle down and begin work”

Teachers also provided information on what it was like to play individual games multiple times. One theme that emerged is that **sometimes it took several times playing the games for their students to get the hang of it**. For example:

**Sha Zam!** (Played every day for a week)

Play 1: “Some students couldn’t remember the pattern but said they were going to use ideas from post talk tomorrow”

Play 2: “More students got it today!”

Play 3: “Consistent students were allowed to lead the activity”

Play 4: “Students were practicing at recess!!”

Finally, teachers noted places where the **Brain Games fit well and could be integrated with their curriculum** to enhance reading, math, or science lessons. For example, a teacher played “Catch That Sound” focusing on long *a* words and noted: “The lesson fits right in with spelling curriculum.” Another teacher noted how they used the “Animal Cool Down” game in their science lesson on animals (“Kids focused and liked moving like an animal”), and played the game two times that day. The next week students asked to play the game during science again.