



Executive Function: A New Frontier

Creating Self-reliant Students
Using Personalized Curriculum

SSTAGE Conference
September 14, 2022



Sucheta Kamath

CEO & Founder, ExQ®



Hello!

- Sucheta Kamath is an award-winning speech-language pathologist, TEDx speaker, and an entrepreneur whose software ExQ® is revolutionizing learning in the Ed-Tech space.
- Sucheta is a sought-after speaker and media expert on Executive Function training with a 25+ year clinical practice and passionately believes that learning HOW to learn needs to be taught intentionally, specifically and strategically to all children.
- Sucheta hosts Full PreFrontal®: Exposing the Mysteries of Executive Function Podcast, serves on many boards and runs a free communication and Executive Function job-readiness training program for previously homeless, incarcerated, and disenfranchised men in inner-city Atlanta.
- Sucheta has a Board Certification in Neurogenic Communication Disorders from the Academy of Neurogenic Communication Disorders, Master of Arts in Speech-Language Pathology Ohio University, Master of Arts in Linguistics University of Bombay, Bachelor of Science in Audiology and Speech Therapy.





Agenda

1. Executive Function Overview
2. Life-Long Implications of Strong Executive Function
3. Results of Executive Function Survey
4. Teaching Executive Function in the New Frontier to Prepare Students for What's Next!
5. Measurable Results of Benchmark Assessment and ExQ Executive Function Training



Overview of Executive Function



Goals For Self (Enlightened Self-Interest Goals)

What is Executive Function?

Executive Function is a set of skills essential to appropriately adjust one's thoughts, emotions and actions in accordance with changing environments and challenging times to achieve personal goals!

Sustain effort and engagement



Regulate attention and emotions

← Mar 2022 →							Month	Day	List
Sun	Mon	Tue	Wed	Thu	Fri	Sat			
27	28 RMS Soccer @ Westmins...	1	2	3	4 RMS Track Meet (P'Tree...	5			
6	7 (postponed- rain) RMS G... Board of Education Mee... Middle School Orchestra...	8	9	10 Band LGPE Southwest D... RMS PTA Meeting: 6:30 ...	11 Band LGPE Southwest D...	12 Band LGPE Southwest D... RMS Track Meet (Buck G... DBB Bulldog Bash: 7:00 ...			
13 RMS Girls Soccer (@ Sutt...	14	15	16 RMS Girls Soccer (@ Ble...	17 RMS SLT Meeting: 4:00 P...	18	19 RMS Track Meet (Buck G...			
20 RMS Track Meet (Buck G...	21	22 RMS Girls Soccer (@ Wo...	23 Rising 6th Grade Parent...	24	25	26			
27	28	29	30 RMS Girls Soccer Tourna... RMS Spring Musical: 7:0...	31	1	2			

Organize time, tasks, goals and relationships



Invest in the future-self



← Mar 2022 →							Month	Day	List
Sun	Mon	Tue	Wed	Thu	Fri	Sat			
27	28	1 RMS Soccer @ Westmins...	2	3	4 RMS Track Meet (P'Tree...	5			
6	7 (postponed- rain) RMS G... Board of Education Mee... Middle School Orchestra...	8	9 Band LGPE Southwest D... RMS PTA Meeting: 600 ...	10 Band LGPE Southwest D...	11 Band LGPE Southwest D... RMS Track Meet (Buck G... DBB Bulldog Bash: 700 ...	12			
13 RMS Girls Soccer (@ Sutt...	14	15 RMS Girls Soccer (@ W...	16 RMS SLT Meeting: 400 P...	17	18 RMS Track Meet (Buck G...	19			
20 RMS Track Meet (Buck G...	21	22 RMS Girls Soccer (@ W...	23 Rising 6th Grade Parent...	24	25	26			



Executive Function skills are emergent and evolve with time, experience, and practice leading to frontal lobe maturation.

Students with strong Executive Function take personal responsibility for their academic and life goals with maturity, enthusiasm, confidence, and commitment.

Executive Function = Subject Agnostic Skills

Not content specific, but process specific skills





Poor Executive Function impedes learning

- Fleeting attention, easy distractibility
- Impulsivity and lack of forethought
- Inability to wait for one's turn
- Lack of clarity about goals
- Mismanagement of time, space, tasks, expectations and relationships
- Poor personal problem solving
- Low frustration tolerance
- Dislike for effortful tasks and lack of persistence
- Disregard for personal success or support from others to succeed
- Requiring constant attention and motivation from an adult



Poor Executive Function impedes learning

- Fleeting attention, easy distractibility
 - Impulsivity and lack of forethought
 - Inability to wait for one's turn
 - Lack of clarity about goals
 - Mismanagement of time, space, tasks, expectations and relationships
 - Poor personal problem solving
 - Low frustration tolerance
-
- Dislike for effortful tasks and lack of persistence
 - Disregard for personal success or support from others to succeed
 - Requiring constant attention and motivation from an adult

Growing interest in Executive Function in childhood as a **prediction for key developmental outcomes**



- Self and social understanding - Carlson et. al 2004
- School readiness (early math and reading ability) - Blair & Razza, 2001
- Teachers say more important to sit still, pay attention, follow rules - Rimm-Kaufmann, Planta, Cox 2000
- Executive Function skills predict SAT scores - Shoda et. al 1990
- Development predictor from preschool to middle age - Casey et. al 2011

A photograph of a female teacher with dark curly hair leaning over a desk to assist a young female student with long dark hair and glasses. The student is looking down at an open notebook. The teacher is pointing at the notebook. In the background, another student is visible, and the setting appears to be a modern classroom with large windows.

Implications for Teaching & Learning:

- Teaching students with low levels of self-awareness or poor mindsets for strategic thinking is likely to pose a challenge in eliciting group cooperation or collaboration (undisciplined, checked out, and behaviorally chaotic or dysregulated)
- Under these conditions, teachers might find themselves to be less effective as the sole focus of their teaching might shift from elevating learning to managing dysregulated behaviors



Summary:

Strong Executive Function **empowers students with the skills needed to take personal responsibility for their own learning and life goals**



Life-Long Implications of Strong Executive Function

Lifelong Impact of Strong Executive Function skills

Socioeconomic Status & Self-Control



30 years later...

- Better jobs
- Higher incomes
- Improved health
- Stronger relationships
- Fewer run-ins with the law

Study by Terrie Moffitt et al. (2011)
Proceedings of the National Academy of Science

A DEEPER DIVE

Mounting evidence shows that **Executive Function proficiency** is directly linked with self-efficacy and academic, personal, work, and social success.



Research shows that approximately **32.2 million children** in primary education worldwide repeat a grade (UNESCO, 2012), and a major reason for grade repetition is **low levels of academic performance.**



Executive Function & Preschool Readiness (1)



Preschool Executive Function skills predict...

- Growth in emergent literacy, vocabulary, and math across Pre-K (McClelland et al., 2007)
- Kindergarten literacy and math skills (Blair & Razza, 2007)
- 3rd grade reading comprehension (Guajardo & Cartwright, 2016)
- Math and reading achievement at age 21 (McClelland et al., 2013)
- College completion by age 25 (McClelland et al., 2013)

Executive Function & Math Competence (2)



Students with strong Executive Function tend to score higher in math

Data from National Center for Education Statistics Early Childhood Longitudinal Program, 4th grade, N=7,615 students

Executive Function and Reading Comprehension (3)



Specific EF Skills:

- **Planning and Organization**
(Locascio, Mahone, Eason, & Cutting, 2010)
- **Working Memory**
(Borella, et al., 2010)
- **Cognitive Flexibility**
(Cartwright et al., 2017)
- **Inhibition** (Locascio, et al., 2010)
- **Social Understanding**
(Guajardo & Cartwright, 2016)

Executive Function & Graduation Outcomes (4)



**Poor
Executive
Function
leads to high
school
dropout and
reckless
decision-
making**

Executive Function & Mental Health Disorders (5)



Executive Function is impaired in disorders including Attention Deficit and Hyperactivity Disorder (ADHD), Conduct Disorder, Obsessive Compulsive Disorder (OCD), Depression, Addiction, and Schizophrenia

Executive Function & Health Outcomes (6)



success in weight loss. *Journal of Health Psychology*. 2011;16(3):730-737.

Poor Executive Function skills are associated with overeating and obesity, substance abuse and poor treatment adherence

Executive Function & Social Interpersonal Skills (7)



Poor Executive Function may lead to uncontrolled emotional outbursts, relationship conflict and even violence

Executive Function & Work Productivity (8)



Poor Executive Function may lead to poor productivity and difficulty finding or keeping a job



Summary:


Executive Function—through processes such as problem solving, mental flexibility and strategic thinking—**helps individuals excel at work, relationships, challenges, and change!**



Results of Executive Function Survey

What are Schools/Districts Prioritizing?

Most Important

- 
1. Academic Performance
 2. Professional Development
 3. College and Career Readiness
 4. Social-emotional Learning
 5. Race, Equality, and Social Justice
 6. Violations of Code of Conduct and other behavioral issues
 7. Socio-Economic Concerns

Least Important

N=40

@2022 Sucheta Kamath, MA, CCC-SLP & ExO®

What are Educational Leaders prioritizing?

Most Important

1. Academic Performance
2. Professional Development
3. College and Career Readiness

4. Social-emotional Learning
5. Race, Equality, and Social Justice
6. Violations of Code of Conduct and other behavioral issues
7. Socio-Economic Concerns

Least Important

N=40

@2022 Sucheta Kamath, MA, CCC-SLP & ExO®



Where do school leaders see their students falling short?

Majority of survey respondents reported that LESS THAN 40% of their students are able to:

- Ignore distractions, intensify focus, and stay engaged
- Create goals for themselves and design plans to achieve them
- Analyze their own mistakes in schoolwork and learn from them
- Get started on work independently to meet deadlines
- Knows how to explain problems, speak on behalf of self and ask for help when needed
- Acknowledge emotions, cope with setbacks, adjust attitudes

N=40

@2022 Sucheta Kamath, MA, CCC-SLP & ExO®



What areas do school leaders most want to address?

We want our students be able to:

- Independently complete their work and achieve their goals
- Create their own learning strategies
- Demonstrate adaptability to meet their goals

N=40

So, what's missing?

Individual guidance counseling	83%
SEL lessons as part of guidance programs	69%
Small group counseling with focus on specific themes (divorce, loss of parent, homelessness, anxiety, etc.)	57%
Specific SEL curriculum	54%
In-class guidance lessons by class teacher	46%
Study skills class	46%
Some tips and ideas for EF, but no real curriculum	34%
Other	17%
Executive Function curriculum	14%

N=40

@2022 Sucheta Kamath, MA, CCC-SLP & ExO®



Summary:

Executive Function challenges are some of the most significant reasons why **students are falling behind in academics and college/career readiness. Evidence indicates these skills must be explicitly taught!**



ExQ: Teaching Executive Function In the New Frontier

Paths to Personalized Learning

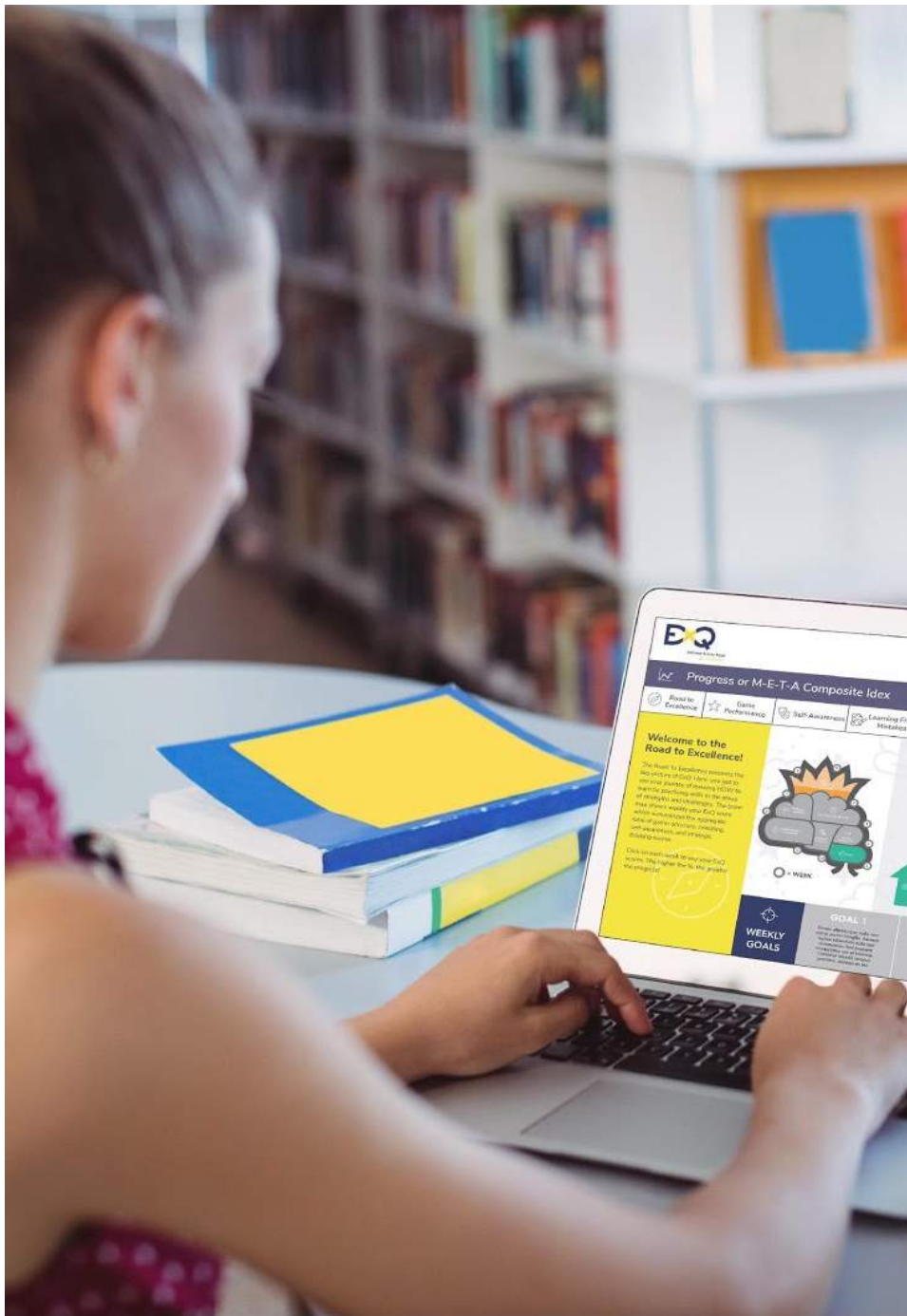
to gain mastery of Executive Function

Train the Trainers to **Train**
the **Students**



Vs.





ExQ for School:

- Research-informed Executive Function Year-long curriculum
- Benchmark assessment cognitive and linguistic Executive Function skills for ALL learners
- Multi-year dynamic content ready for immediate and supported implementation for grades 6-12
- AI-based specialized coaching and scaffolded metacognitive training
- Highly personalized and dynamic content with 20-Lessons over 2 semesters
- Meets CORE content requirements
- Comprehensive ExQ report card
- 100% digital platform with classroom extensions and enrichments

ExQ's Game-based Personalized Learning

ExQ's Teaching Pedagogy That Supports & Promotes Executive Function

- Novelty or unfamiliarity of content
- Ambiguity or implicit expectations
- Hierarchical complexity
- Opportunities to learn from mistakes
- Frequent *Metacognitive* prompts for self-reflection
- Specialized corrective feedback
- Self-devised strategic thinking





ExQ Class Models

- Core Class
- Elective Class
- Connections Class
- Study Skills Class
- Part of counseling
- Part of Advisory

Optimal elements that promoted success

- Teacher-facilitated interactive classroom discussions
- Group video/journal review
- Weekly progress review session
- Discussion about transfer and generalization of strategies into classroom learning
- Leadership onboarding and support of new curriculum



Results of Benchmark Executive Function Assessment

Benchmark Executive Function Assessment

First PROACTIVE ASSESSMENT
of students provides a
comprehensive look at [Executive
Function Skills](#) (how prepared
your students are to MANAGE
learning – independently,
effectively, and prudently)



Focus



Working Memory



Prospective Memory



Organization & Planning



Problem Solving



Mental Flexibility



Self-Awareness



Strategic Thinking

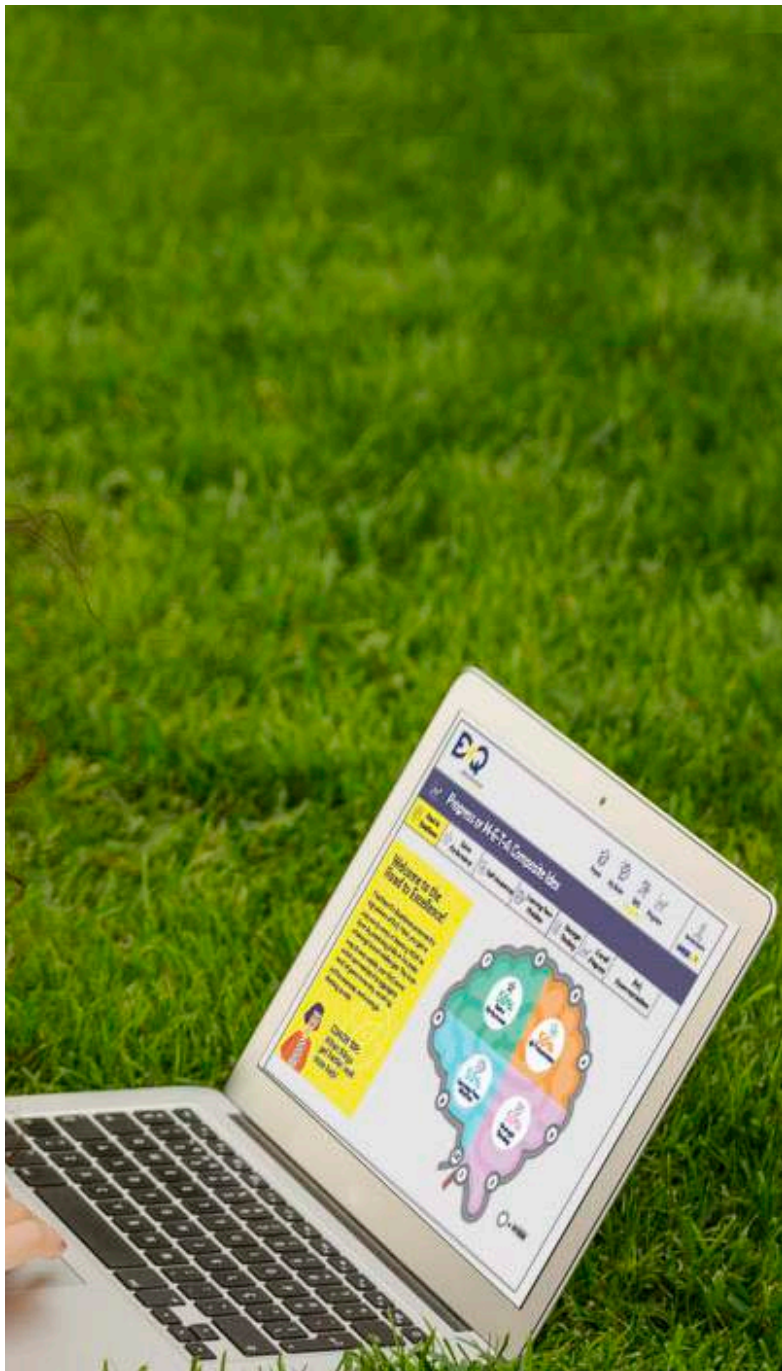


Emotional Resilience

Baseline of Student's Executive Function

ExQ's three-part Benchmark Executive Function Assessment:

- Part 1: Student Portrait = a self-assessment of Executive Function skills, learner habits and grade predictions
- Part 2: Student strengths and challenges = in the areas of learning, strategizing, and self-awareness through Test Games, which helps craft personalized learning goals
- Part 3: The Future-Self - Creating a vision-board to pursue idea of intentional self-improvement and mental time-travel



Collective Strength: **Prospective Memory**

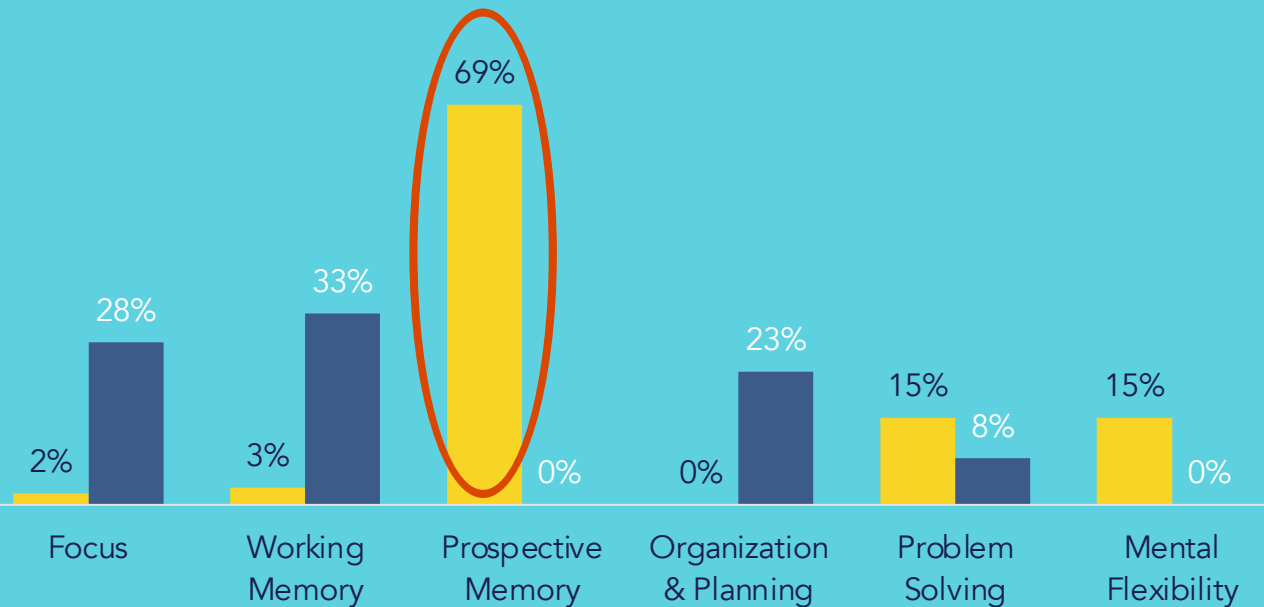
69%

Student learning experience is likely to be enhanced when they are aware of their strong ability to:

- Remember to remember
- Make use of calendars and timers as a prompt to remember
- Think about upcoming tasks, assignments, and events
- Conceptualize and rehearse future-oriented action

ExQ Profiles of All Students

■ Student Strengths
■ Student Challenges

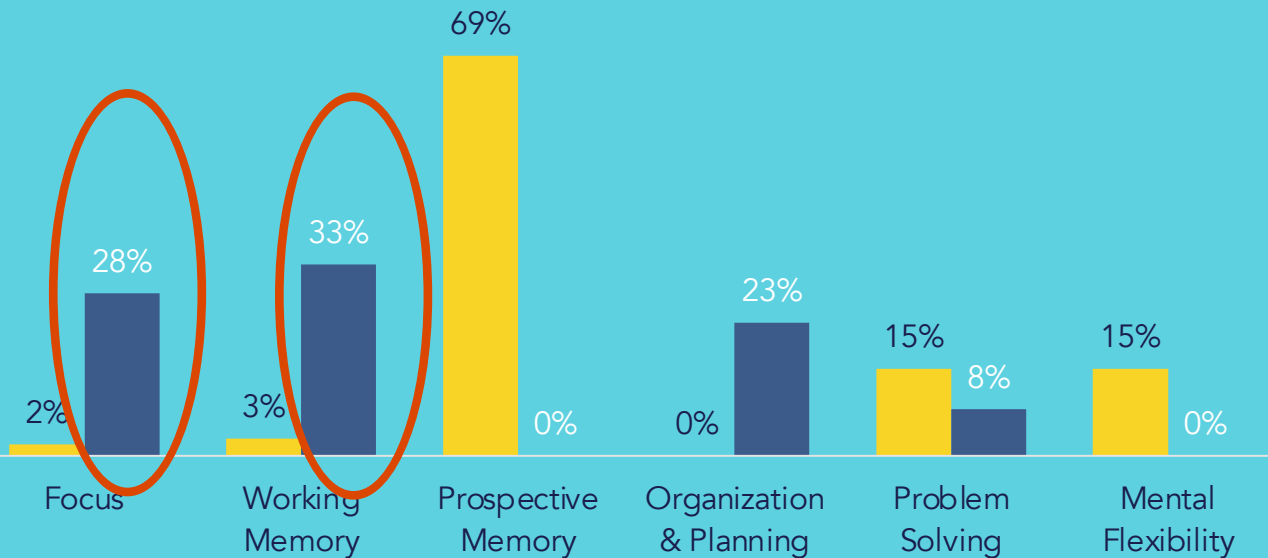


Collective Challenges: **Focus & Working Memory**

61%

ExQ Profiles of All Students

■ Student Strengths
■ Student Challenges



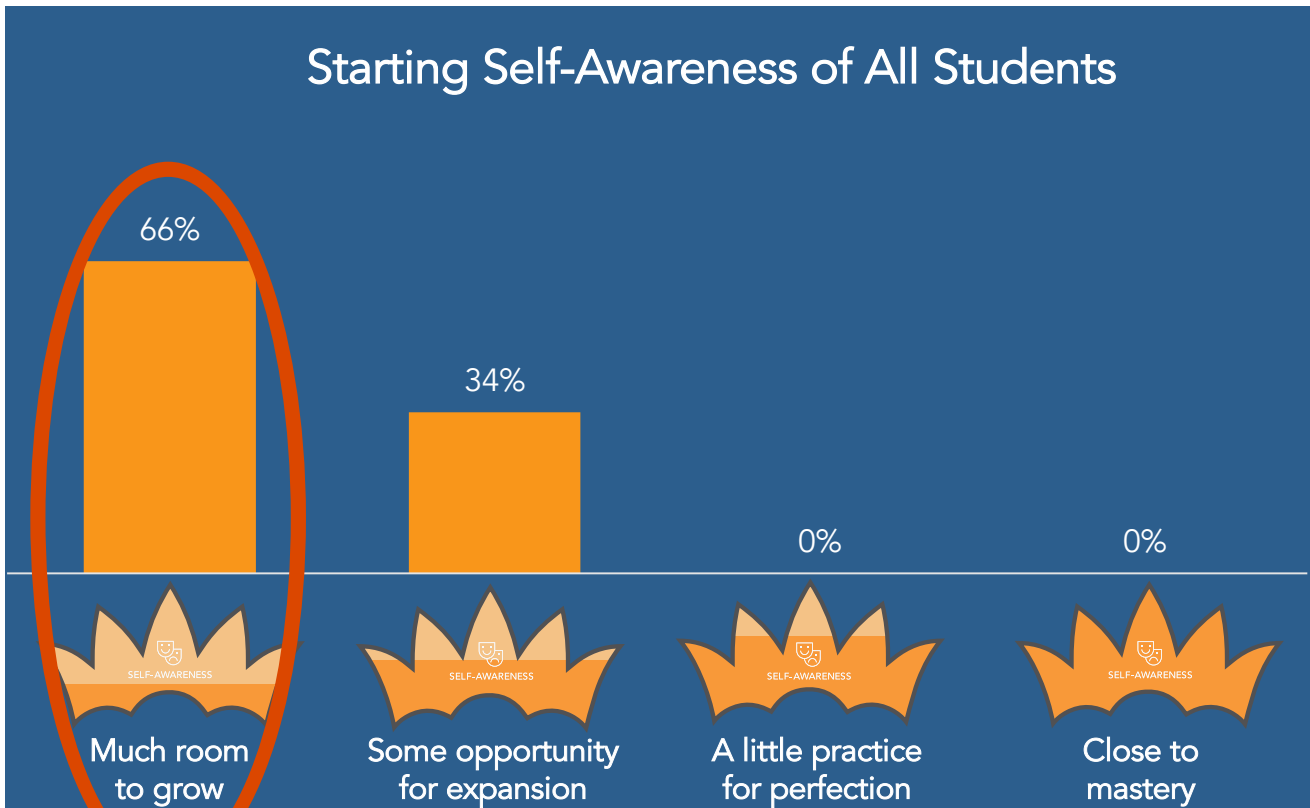
Student learning experience is likely to be hindered by their inability to:

- Follow through with multistep directions
- Explore multiple perspectives
- Weigh multiple options and evaluate options

Collective Student Skills: **Lowest Level of Self-Awareness**

66%

Starting Self-Awareness of All Students



Student learning experience is likely to be hindered by their inability to:

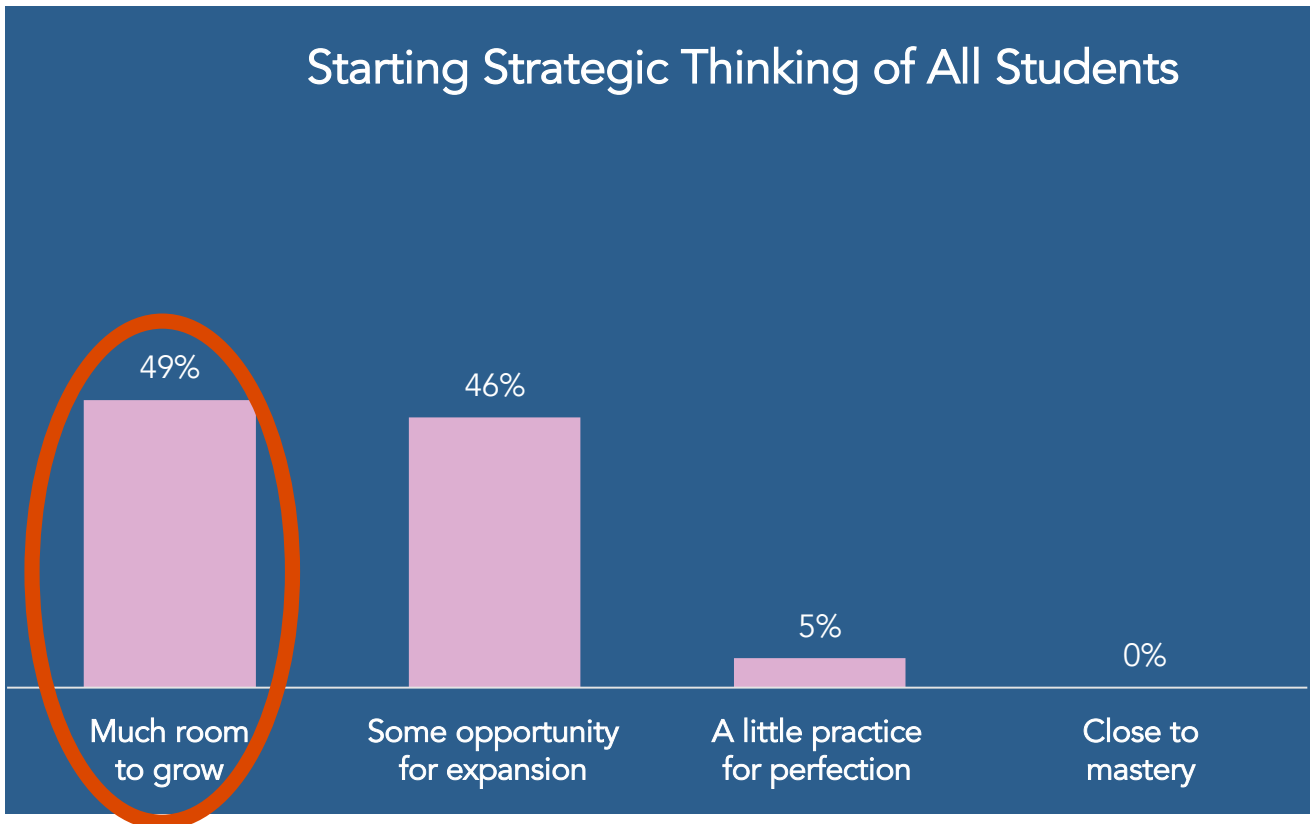
- Pause and reflect
- Anticipate mistakes
- Take ownership of mistakes
- Assess the causes and effects of missed steps or errors
- Identify personal habits that interfere with goal completion
- Seek and receive help

Number of Students = 373

Collective Student Skills: **Lowest Level of Strategic Thinking**

49%

Starting Strategic Thinking of All Students



Student learning experience is likely to be hindered by their inability to:

- Deploy “problem-solving” mode and behaviors
- Adapt with flexibility to circumvent challenges or roadblocks
- Craft a gameplan to address personal problem
- Understand the value of having a strategy to improve outcomes



Measurable Results of ExQ for School



M-E-T-A
COMPOSITE
INDEX™

Quantitative Data



EF Skills Progress (Game Performance) 1



Learning How to Learn 2



Self-Awareness 3



Learning from Mistakes 4



Emotional Resilience 5

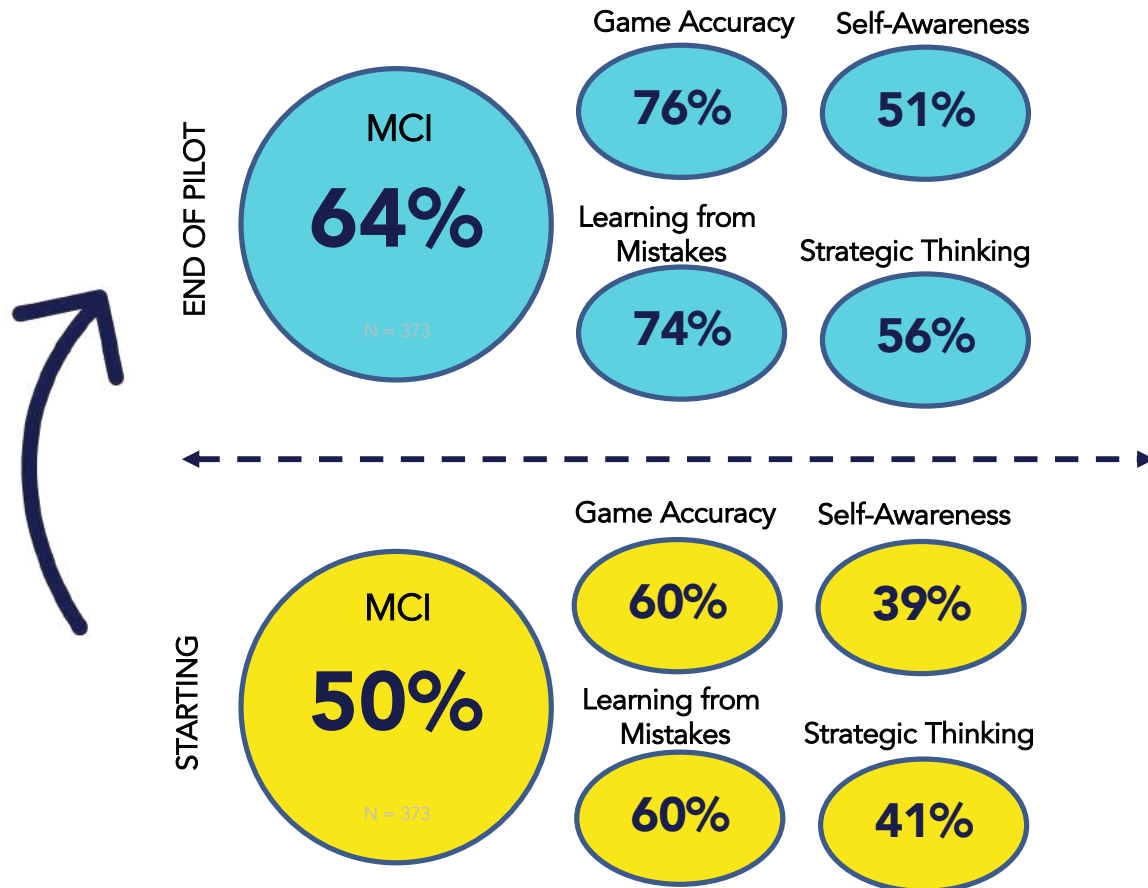


Strategic Thinking 6

Global Results ~ Starting vs. Ending MCI Scores



M-E-T-A COMPOSITE INDEX™



Significance:

At the start, the M-E-T-A Composite Index (MCI Score) for Students was 50% suggesting less than adequate Executive Function competency.

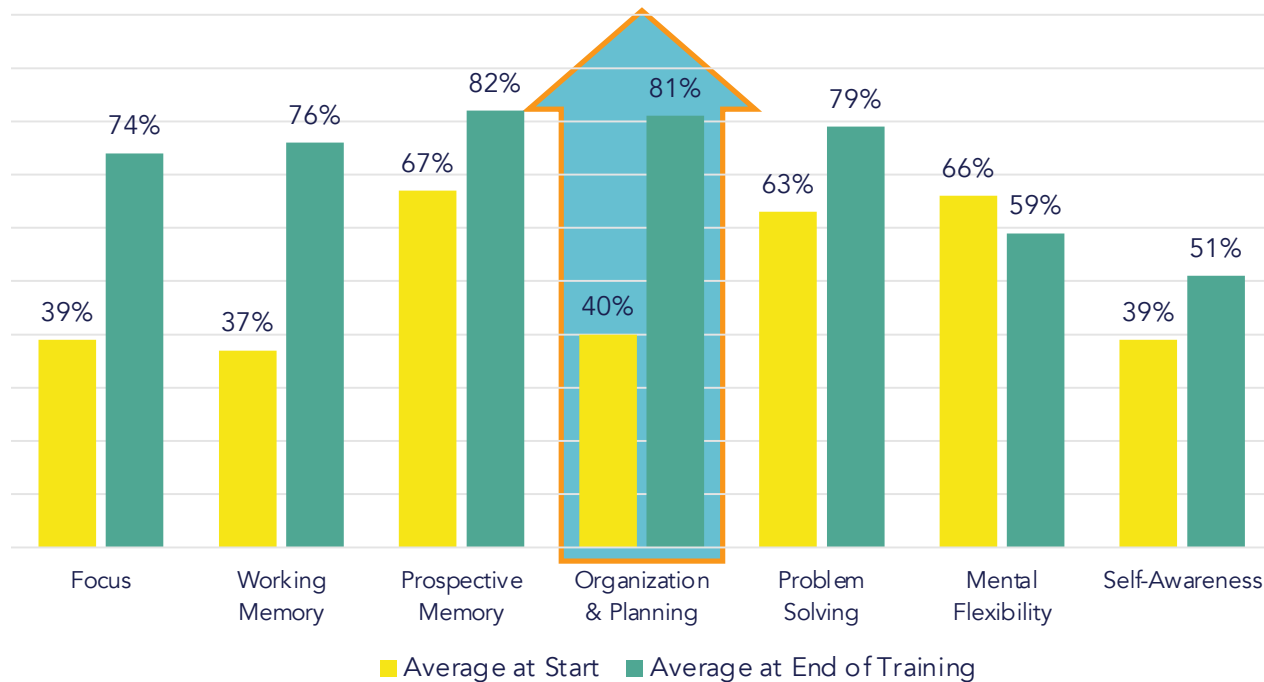
ExQ training yielded a 14% gain in every measured domain.

The Goal of ExQ Training after the benchmark Assessment was to build students' self-knowledge to move them to >70% MCI score with a gap between self-awareness/strategic thinking score and MCI score to be <+/- 10 points.

Area Most Improved = Organization & Planning

41%

Progress Made in 6 Areas of Executive Function



Significance:

Move the training along required effort, commitment and consistent delivery and when these criteria were met, noticeable improvement was seen in Organization & Planning area.

Academic Relevance:

For Students: Benefits seen in ignoring distractions, sustaining engagement and building mental stamina for hard work

For Teachers: Teachers are likely to see greater independence in solo work and strategic approach while maintaining engagement when environment poses distractions or self poses chatter

Measurable Growth in Self-Awareness



12%

Significance:

- Improved self-awareness leads to greater self-knowledge, and higher self-efficacy
- Improvement in acknowledging personal learning strengths and struggles opens the pathway to learning HOW to learn

Academic Relevance:

For Students: Greater insight into multiple ways to achieve goals and meet expectations; “real-time” detection of problematic behaviors that interfere with academic and life success

For Teachers: Greater self-starting behaviors AND independence using recommended tools and strategies; lesser need for constant management and supervision

@2022 Sucheta Kamath, MA, CCC-SLP & ExQ®

Measurable Growth in Strategic Thinking



15%

Significance:

Improved strategic thinking leads to greater efficacy while designing a plan or while solving personal problems

Academic Relevance:

For Students: Greater insight into multiple ways to achieve goals and meet expectations

For Teachers: Greater self-starting behaviors AND independence using recommended tools and strategies



SUCCESS PLAYBOOK FOR THE FUTURE-SELF

Qualitative Data



Student Selected Goals



Vision Board for the Future-Self



School Habits and Work Habits



Written Journaling



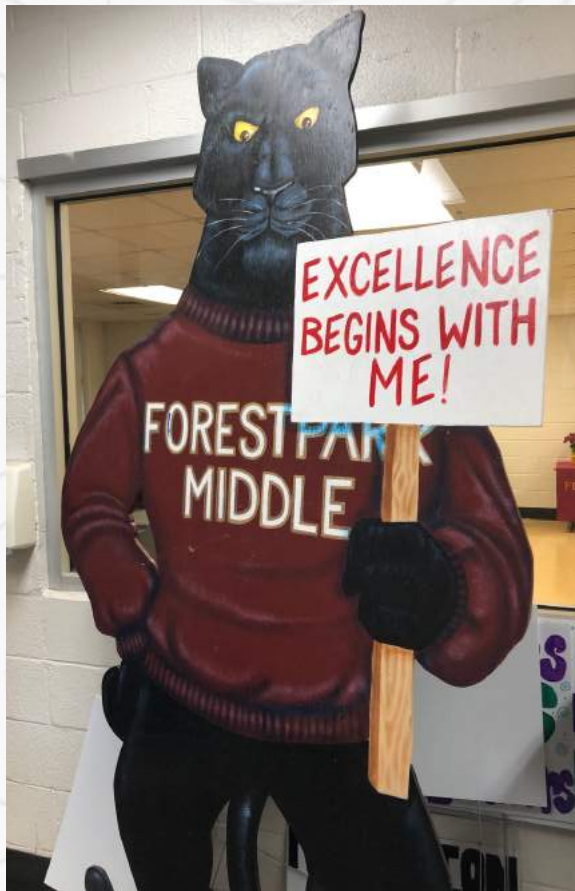
Video Journaling



Targeted Insightful Personalized
Strategies (TIPS)



ExQ enriches students' learning through **PERSONALIZED CURRICULUM**



LESSON
6

Aaliyah's Executive Function Dashboard
[Back](#)

Grade: Forest Park
Name: Aaliyah Munnings
Birthday: 02/25/2010
Age: 12

Videos
 Journaling
 Strategies for Success
 Deep Dive

ExQ Profile & Goals

SELF-AWARENESS GOAL:
 Find out why I struggle in certain things and get as much help as I can.

FOCUS GOAL:
 Stop getting distracted, control my boredom and always pay attention.

STUDENT GOALS

- I would like to creatively solve my problems and use new solutions.
- I would like to get work done without wasting time.

MY VISION BOARD:
 Who I am when I graduate

[User List](#)
[Lead Nurture](#)
[Survey Trends](#)
[Training Results](#)
[Exit Survey](#)
[Reports](#)
[User Details](#)
[Tech Support](#)

[EXQ Admin](#)

LESSON
7

Ahmad's Executive Function Dashboard
[Back](#)

Grade: North Clayton
Name: Ahmad Futa
Birthday: 05/03/2009
Age: 13

Videos
 Journaling
 Strategies for Success
 Deep Dive

Student Created Videos:
 Use these videos to facilitate a class discussion regarding personal goals, building a positive relationship with the future-self, and how best to assess lesson-by-lesson learning progress.

Goal Video

My Future-Self Video

M-E-T-A Lesson Summary Videos

1. Your ExQ Profile

2. Your ExQ Goals

3. Science of Reflection

4. Learning from Mistakes

5. Problem Solving

6. Mindset

SLP & ExQ®

Thank you for your participation in the (2021) 10-Lesson ExQ Training. The ExQ Profile below shows your strengths and challenges and the areas targeted to help elevate your Executive Function skills. Being strategic and introspective is a learned skill and ExQ invites you to continue your practice beyond ExQ and into the classroom and your daily lives.



Aniya's ExQ Profile



EF Challenge



Weakest Area → Strongest Area



According to your ExQ Profile at the start of the ExQ training, you needed some support to improve your Self-Awareness.

Targeted Areas of Executive Function

FOCUS: It's the brain's ability to sustain effort, figure out what's important, and then pay attention to it without getting distracted.

WORKING MEMORY: It's the brain's self-discipline to carry out a set of actions routinely by following self-imposed rules in order to save time and to take away the pressure of having to make unending decisions.

PROSPECTIVE MEMORY: It's a way to build knowledge by devoting time and attention to new learning by finding main ideas, mapping facts, summarizing details, and recalling them at a specific later time.

ORGANIZATION & PLANNING: It's the brain's ability to reach goals by sorting information, organizing materials/ideas, making plans, and sticking to them.







PROBLEM SOLVING: It is the brain's ability to get to the bottom of a challenge and break it down to move ahead in a new and useful way.

MENTAL FLEXIBILITY: It is the brain's ability to deal with the unexpected, see what people see, and keep moving forward while going with the flow.

SELF-AWARENESS: It's the brain's ability to determine one's own strengths and weaknesses to navigate towards a better future-self.



M-E-T-A COMPOSITE INDEX™

Growth and change measured through six key dimensions:	Description	Aniya	CCPS 21-22 Average
 Learning How to Learn	Average success in correctly predicting game performance & results Average success in recognizing personal struggle and asking for help	47% 24%	33% 17%
 Executive Function Game Performance	Average game training accuracy in student's Challenge Area Average game training accuracy in student's Strength Area	81% 88%	52% 45%
 Self-Awareness	Average success measured during weekly processes of self-assessment and self-correction	46%	34%
 Learning From Mistakes	Average success measured during the weekly coaching process involving error analysis and contextual problem solving	77%	52%
 Self-Discovery	Success in discovering the use of strategies by the selection of "I would like to use" the shown important and useful tips in the future	35%	29%
 Strategic Thinking	Executive Function habits & behaviors identified with by indicating "this is me" Average success measured during the weekly processes of strategy selection and strategy application	30% 77%	26% 40%

ExQ provides students, teachers, and parents a succinct summary of the quantifiable and qualifiable data in the form of a Progress Report with strategies for ongoing skills development



Let's Watch



*Infinite know how
for school*

Executive Function Curricula for Middle & High Schools

In their words, students share how
ExQ is making a difference in
learning and life!

In their Words!

**Ways ExQ has shown me to
overcome my challenges...**

Stay focused

Reflect

Think hard

You need to work hard

**Improved my
Self-Awareness**

In their Words!
**Habits ExQ has taught me
for my future-self to succeed...**



Time management



Work hard



Be patient



**Take
notes**



Finish school



Keep going

In their Words!

**Strategies ExQ has taught me to
better handle my emotions...**

Stop and think

Relax

Do better

Be calm

Have good emotions

Think things through



Moving Towards the New Frontier

- Executive Function skills are most vital for everyone's personal success
- There is a strong interplay between teachers' Executive Function competence and students' capacity to learn
- Executive Function skills CAN be taught and mastered with effort, practice, and expert feedback
- Without a strategic plan, Executive Function skills are not being taught to ALL students



Summary:

With a strategic, financial, and resource investment,
**educational outcomes can be transformative for all
children with implementation of ExQ Executive
Function curriculum**



Onward!



Sucheta Kamath

CEO & Founder

Phone: 404.493.0962

Email: Sucheta@ExQInfiniteKnowHow.com



Morgan Hale

Partnership Director

Phone: 404.493.0962

Email: Morgan@ExQInfiniteKnowHow.com

[LEARN MORE](#)