The Investor’s Case: Executive Function & Self-Regulation

What Science and Research Tell Us...

● Executive function (EF) and self-regulation (SR) skills are the brain’s “air-traffic control system,” managing the dynamic flow of information and stimuli we experience daily.
● By enabling children to pay attention, think flexibly, and manage behaviors, EF and SR serve as crucial building blocks for all future cognitive, social, and emotional growth.
● These abilities emerge at birth and develop rapidly in early childhood. Children experience a dramatic window of opportunity for growth from ages 3 and 5, when the neural circuits for EF and SR are particularly sensitive to experience.
● Chronic stress actively inhibits EF and SR skills, making them uniquely vulnerable to the effects of poverty and adversity. By age 2, low-income children already demonstrate weaker EF skills relative to their higher-income peers.

Why It Matters...

● Children’s early EF and SR abilities are one of the best predictors of their academic achievement—more so than traditional measures of intelligence, including IQ. And unlike IQ, these skills can be taught!
● Beyond the classroom, children with strong EF and SR capacities earn higher incomes, have better physical and mental health, and engage in less substance use and criminal activity in adulthood. A landmark study found that children with high self-control are 3x less likely to be financially insecure or convicted of a crime as adults than their peers with low self-control.
● EF and SR skills are also critical to resilience, helping children who have faced adversity to overcome obstacles and thrive.

What “Good” Would Look Like...

● Our goal is to ensure that all young children develop healthy EF and SR skills. For babies, this means shifting attention and self-soothing; for toddlers, focusing for short periods and briefly delaying gratification; and for preschoolers, concentrating for longer time frames and persisting through difficult tasks.
● A crucial first step is to build the EF and SR abilities of the adults in children’s lives. In turn, these adults can foster learning environments rich in opportunities for self-directed play and problem-solving.

Strategies for Scaled Impact....
**Key Terms**
The 3 components of EF:
- **Working memory** allows us to hold and use information in our brains over short time periods.
- **Inhibitory control** enables us to resist impulses and ignore distractions.
- **Cognitive flexibility** helps us shift attention and apply different rules in different settings.

**Co-regulation**: process by which a caregiver helps a child regulate thoughts and emotions, gradually teaching the child to do so independently.

**Key Research Studies**
- How stress and adversity undermine EF in the brain.
- SR’s role in lifelong resilience.
- The brain’s second window for EF development in adolescence.
- How early SR skills drive math and reading, enhance school readiness and success, and predict adult health, wealth, and public safety.
- The role of autonomy-supportive parenting in children’s EF.

**Field Leaders**
- The Center on the Developing Child develops and scales cutting-edge EF and self-regulation interventions with community partners.
- CASEL advances SEL research, practice, and policies nationwide.
- Committee for Children develops and disseminates the widely used Second Step SEL curriculum.
- The Developmental Social Cognitive Neuroscience Lab produces groundbreaking research on early EF.

**Promising Innovators**
- Reflection Sciences has created a game-like app to assess EF in children as young as two years old.
- Ready4Routines helps low-income parents and children incorporate healthy routines, scaffolding, and mindfulness into their daily lives.
- Peekapak and Tools of the Mind embed self-regulation skill development into language and literacy instruction.
- Visit our Venture Index for more innovators in this space!

**Key Funders**
- Institute for Education Sciences
- Bezos Family Foundation
- Bill & Melinda Gates Foundation
- Chan Zuckerberg Initiative
- To learn more, check out this national database of funders in this space!

**Sample Metrics & Tools**

**METRICS**
- Attention and impulse control
- Ability to recognize and manage emotions
- Ability to switch gears and focus on multiple aspects of a task

**ASSESSMENT TOOLS**
- NIH Toolbox Flanker Test and Dimensional Change Card Sort
- Minnesota Executive Function Scale
- Preschool Self-Regulation Assessment

Want to learn more? Check out Promise’s full resource library!
Feedback on our materials? Share your thoughts with us!