MIND in the Making

FROM RESEARCH TO ACTION

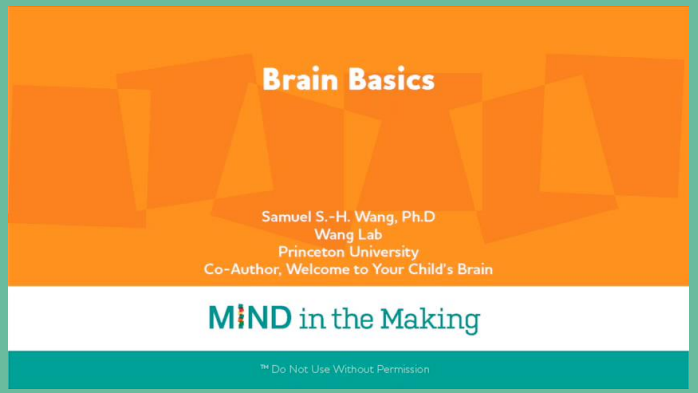
Ellen Galinsky | Mind in the Making | Families and Work Institute

InvestiGator Club | May, 2015

In the first years, trillions of neural connections are made—forming the foundation for future learning.

The architecture of the brain is being built from the ground up, based not just on genes but our experiences and interactions.

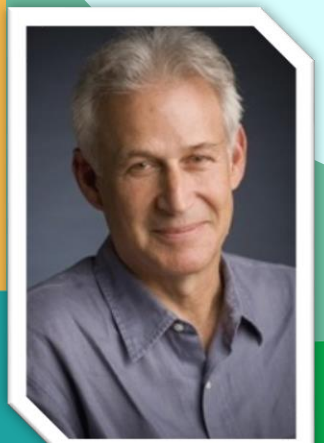
But, as you will see, it is never too late.



Positive relationships with caring adults are essential for brain development

When we talk about how the environment affects young children, we're really talking about most importantly the human environment and we're talking about relationships. There is no healthy social, emotional and cognitive progression in the absence of relationships. **There is no development without relationships!**

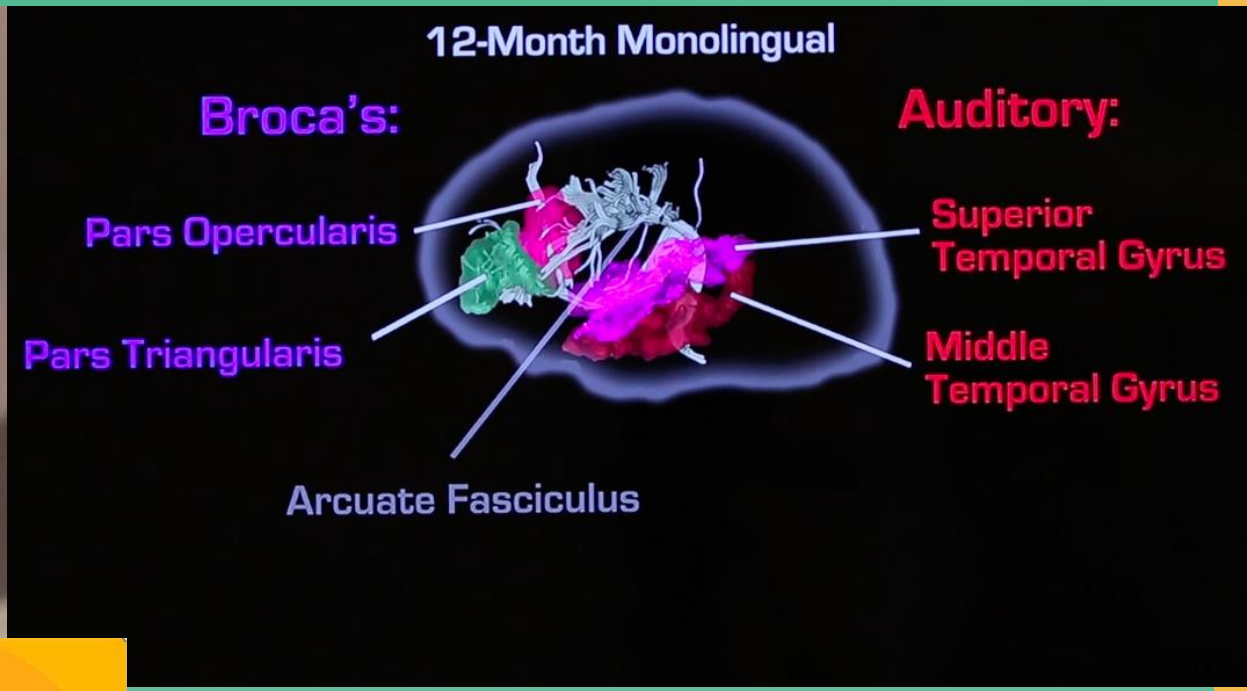
—Jack P. Shonkoff, Harvard University

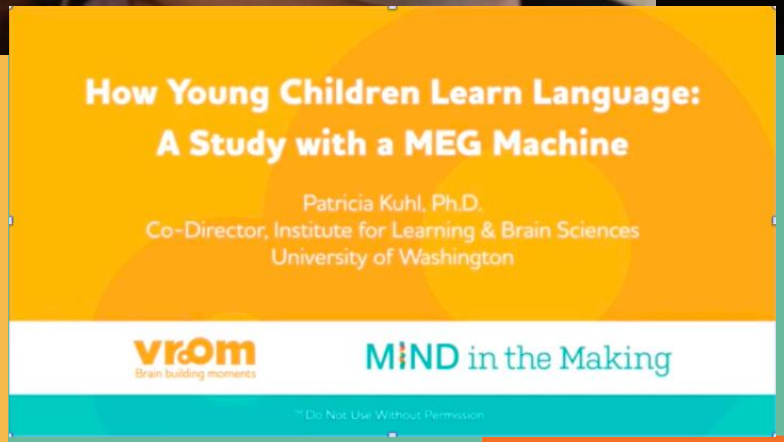


PROMOTING SERVE AND RETURN.

AN
ESSENTIAL strategy
in improving children's LEARNING

The brain is built for action.

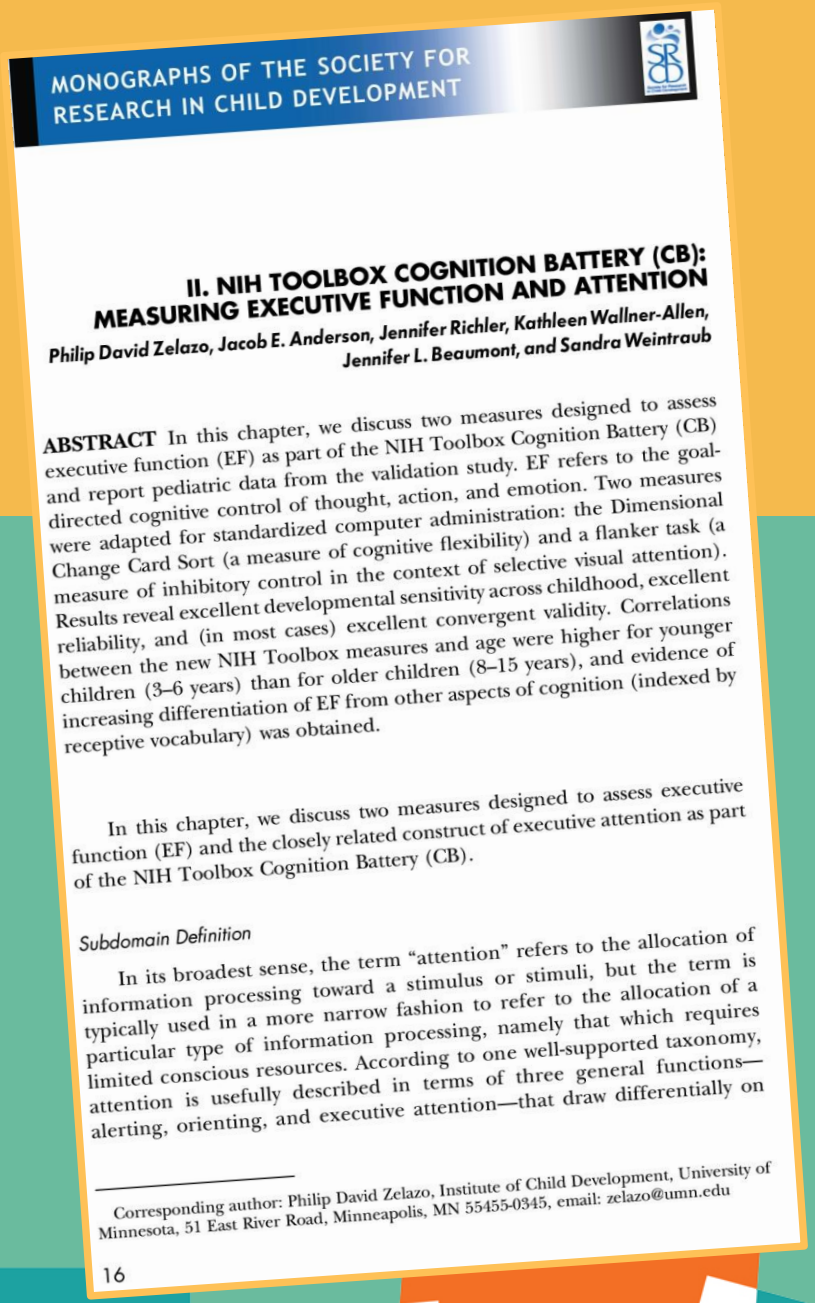




How Children Learn Language
Patricia Kuhl

PROMOTING EXECUTIVE FUNCTIONS.

AN
ESSENTIAL strategy
in improving children's LEARNING



MONOGRAPHS OF THE SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT

II. NIH TOOLBOX COGNITION BATTERY (CB): MEASURING EXECUTIVE FUNCTION AND ATTENTION

Philip David Zelazo, Jacob E. Anderson, Jennifer Richler, Kathleen Wallner-Allen, Jennifer L. Beaumont, and Sandra Weintraub

ABSTRACT In this chapter, we discuss two measures designed to assess executive function (EF) as part of the NIH Toolbox Cognition Battery (CB) and report pediatric data from the validation study. EF refers to the goal-directed cognitive control of thought, action, and emotion. Two measures were adapted for standardized computer administration: the Dimensional Change Card Sort (a measure of cognitive flexibility) and a flanker task (a measure of inhibitory control in the context of selective visual attention). Results reveal excellent developmental sensitivity across childhood, excellent reliability, and (in most cases) excellent convergent validity. Correlations between the new NIH Toolbox measures and age were higher for younger children (3–6 years) than for older children (8–15 years), and evidence of increasing differentiation of EF from other aspects of cognition (indexed by receptive vocabulary) was obtained.

In this chapter, we discuss two measures designed to assess executive function (EF) and the closely related construct of executive attention as part of the NIH Toolbox Cognition Battery (CB).

Subdomain Definition

In its broadest sense, the term "attention" refers to the allocation of information processing toward a stimulus or stimuli, but the term is typically used in a more narrow fashion to refer to the allocation of a particular type of information processing, namely that which requires limited conscious resources. According to one well-supported taxonomy, attention is usefully described in terms of three general functions—alerting, orienting, and executive attention—that draw differentially on

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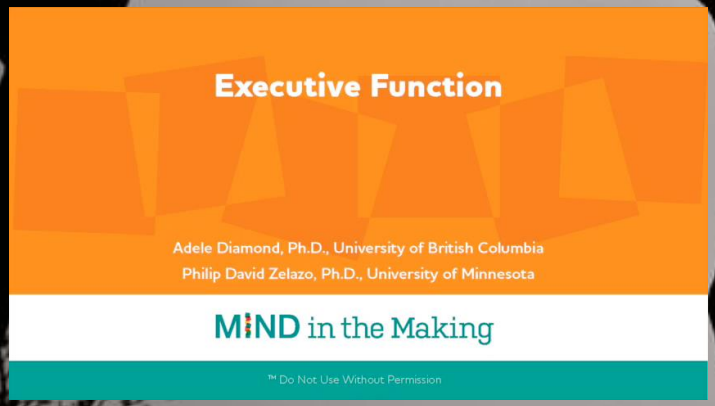
"Executive function refers to the top-down neurocognitive processes involved in the flexible, goal-directed problem solving."

(Zelazo, et al., 2008)

Executive function involves managing thought, action and emotion to achieve goals.

(Miyake et al., 2000)

Executive Function Life Skills



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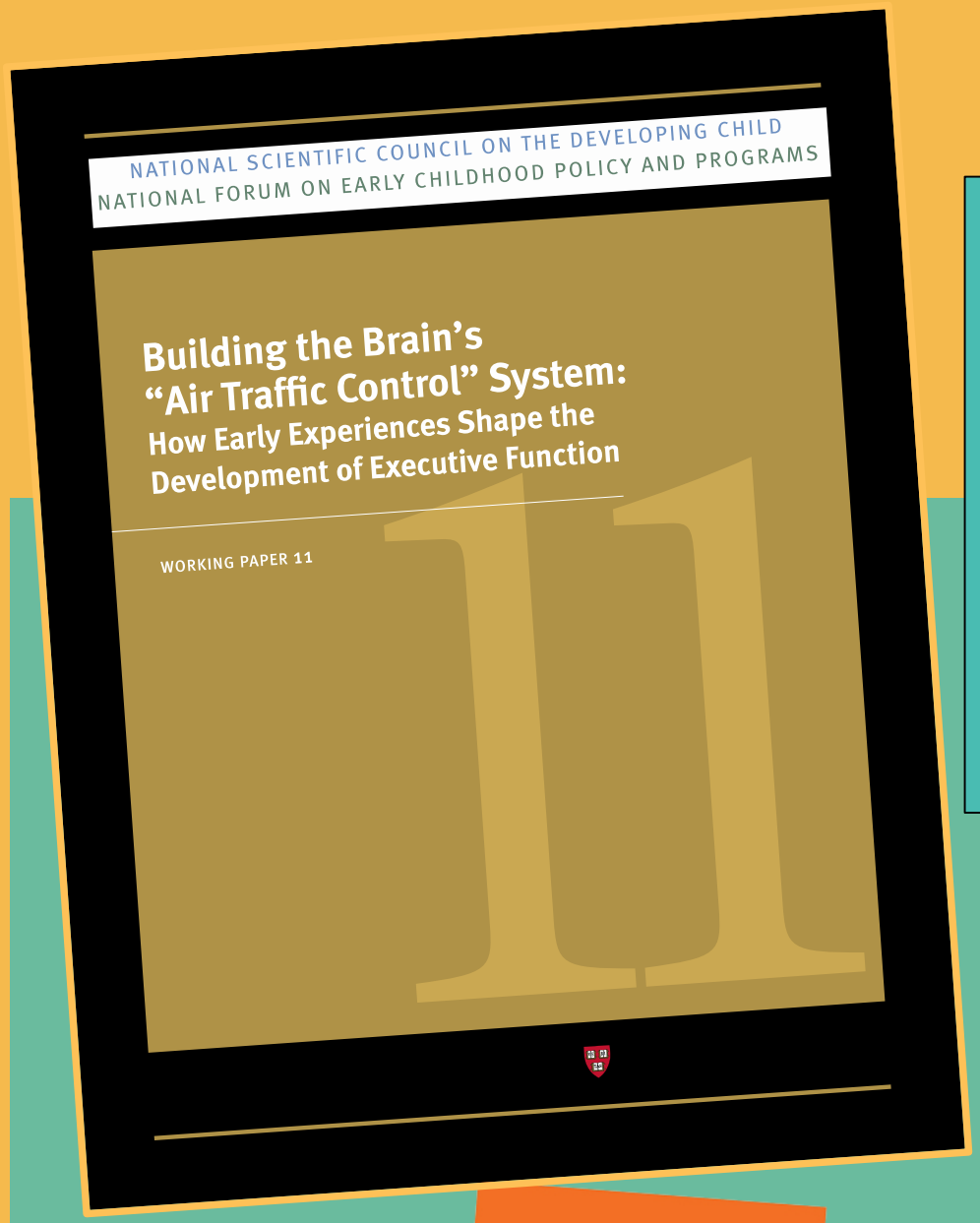
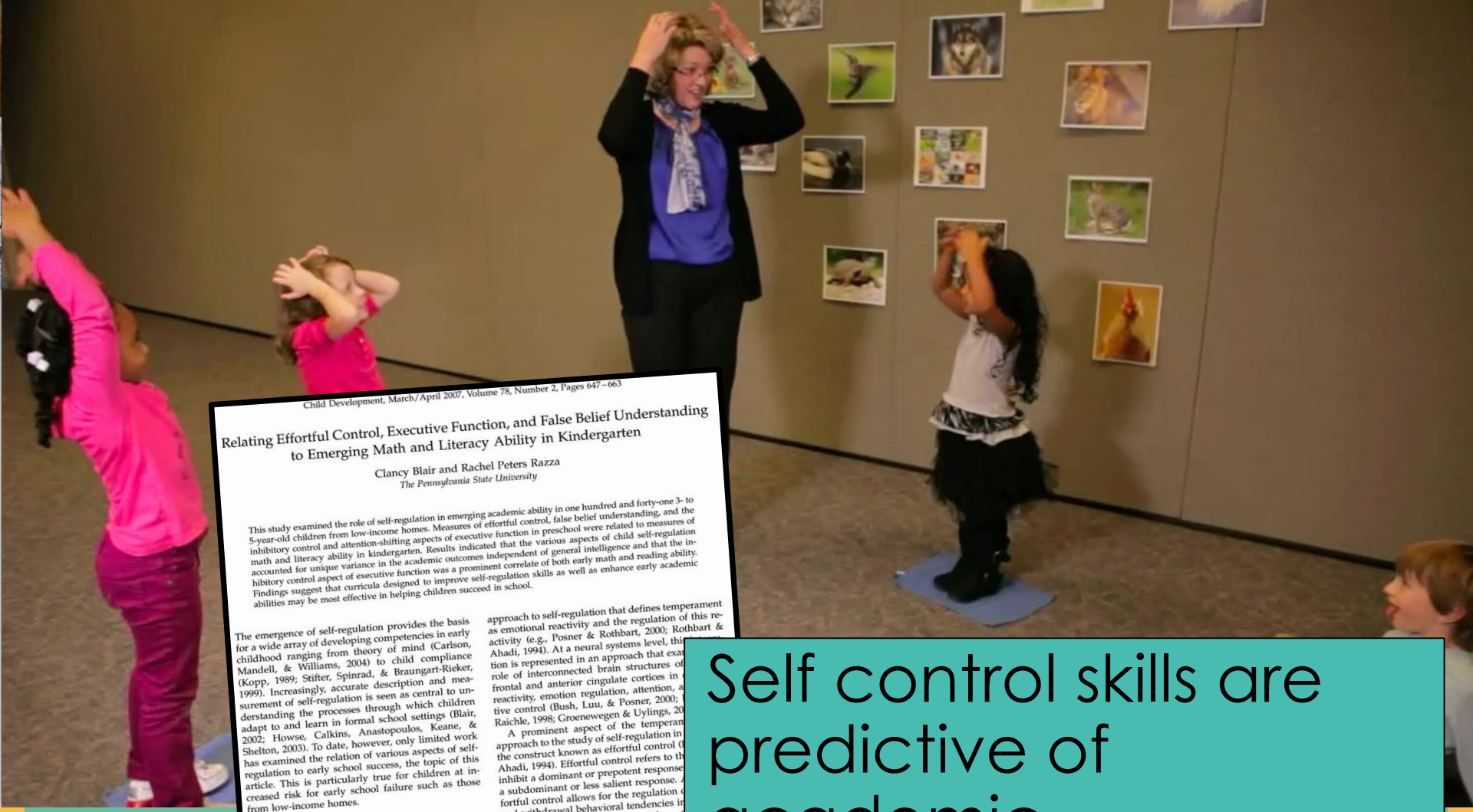
Executive Function Life Skills are important to school readiness and school success.



Children need to learn content (the <u>what</u> of learning) and executive function skills (the <u>how</u> of learning.)



Child Development, March/April 2007, Volume 78, Number 2, Pages 647 – 663

Relating Effortful Control, Executive Function, and False Belief Understanding to Emerging Math and Literacy Ability in Kindergarten

Clancy Blair and Rachel Peters Razza
The Pennsylvania State University

This study examined the role of self-regulation in emerging academic ability in one hundred and forty-one 3- to 5-year-old children from low-income homes. Measures of effortful control, false belief understanding, and the inhibitory control and attention-shifting aspects of executive function in preschool were related to measures of math and literacy ability in kindergarten. Results indicated that the various aspects of child self-regulation accounted for unique variance in the academic outcomes independent of general intelligence and that the inhibitory control aspect of executive function was a prominent correlate of both early math and reading ability. Findings suggest that curricula designed to improve self-regulation skills as well as enhance early academic abilities may be most effective in helping children succeed in school.

The emergence of self-regulation provides the basis for a wide array of developing competencies in early childhood ranging from theory of mind (Carlson, Mandell, & Williams, 2004) to child compliance (Kopp, 1989; Stifter, Spinrad, & Braungart-Rieker, 1999). Increasingly, accurate description and measurement of self-regulation is seen as central to understanding the processes through which children adapt to and learn in formal school settings (Blair, 2002; Howse, Calkins, Anastopoulos, Keane, & Shelton, 2003). To date, however, only limited work has examined the relation of various aspects of self-regulation to early school success, the topic of this article. This is particularly true for children at increased risk for early school failure such as those from low-income homes.

Temperament-Based and Neural Systems Approaches to Self-Regulation

One way to characterize the emergence of self-regulation in children is to consider it as the developmental integration of emotion and cognition in early childhood. At a behavioral level, this integration is represented in a temperament-based approach to self-regulation that defines temperament as emotional reactivity and the regulation of this re-
activity (e.g., Posner & Rothbart, 2000; Rothbart & Ahadi, 1994). At a neural systems level, this
tion is represented in an approach that exa
role of interconnected brain structures of
frontal and anterior cingulate cortices in
reactivity, emotion regulation, attention, a
tive control (Bush, Luu, & Posner, 2000;
Raichle, 1998; Groenewegen & Uylings, 20
A prominent aspect of the temperam
approach to the study of self-regulation in
the construct known as effortful control (
Ahadi, 1994). Effortful control refers to th
inhibit a dominant or prepotent response
a subdominant or less salient response.
fortful control allows for the regulation
and withdrawal behavioral tendencies in
immediate cues for reward or punishment
on the influence of temperament on chi
ment, researchers have been interested in
of effortful control to emotion and emo
regulation of behavior (Raver, 2004), to
social competence and behavior problem
et al., 2003; Valiente et al., 2003) and to
child relationship and compliance wit
requests for behavior regulation (Koch
ray, Jacques, Koenig, & Vandegeest, 19
A prominent aspect of the neural
proach to the study of self-regulation
cus on cognitive processes referred to
executive function. Executive funct
attention shifting, working memory,

The work reported here was supported, in part, by National Institute of Child Health and Human Development Grants R03 HD39750, P01 HD39667, and R01 HD51502. Thanks are due to Cathy Jantzer, Rebecca Holland, Tanja Rothrauff, and Katherine Wagner for their assistance with data collection. Rachel Peters Razza is now at the National Center for Children and Families, Teachers College, Columbia University, New York, NY.

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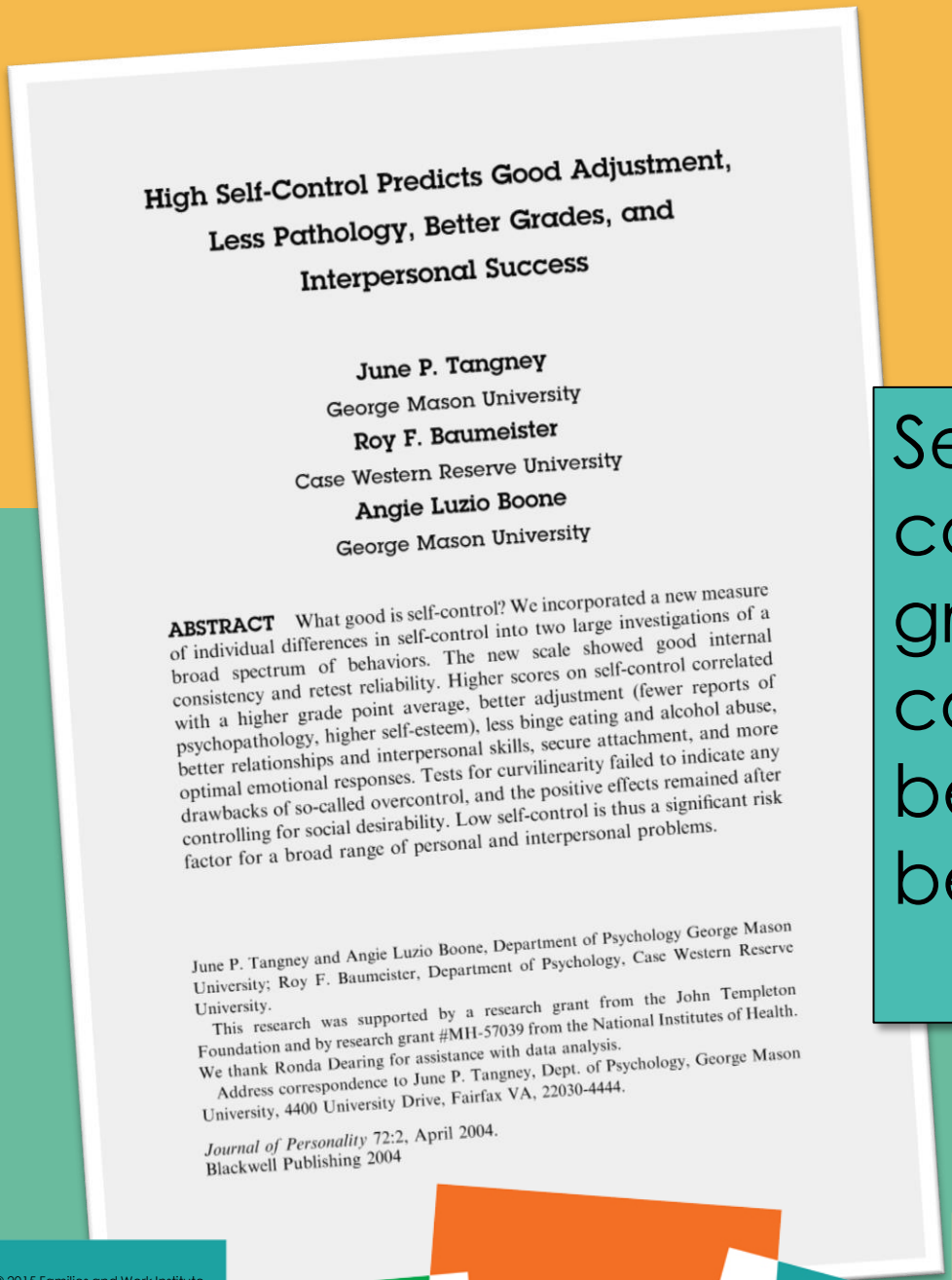
Self control skills are predictive of academic achievement

(Blair and Razza, 2007; Schmitt et al., 2014)

Executive Function Life Skills are important in addressing high school success, college success and the graduation rate.



High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success

June P. Tangney
George Mason University
Roy F. Baumeister
Case Western Reserve University
Angie Luzio Boone
George Mason University

ABSTRACT What good is self-control? We incorporated a new measure of individual differences in self-control into two large investigations of a broad spectrum of behaviors. The new scale showed good internal consistency and retest reliability. Higher scores on self-control correlated with a higher grade point average, better adjustment (fewer reports of psychopathology, higher self-esteem), less binge eating and alcohol abuse, better relationships and interpersonal skills, secure attachment, and more optimal emotional responses. Tests for curvilinearity failed to indicate any drawbacks of so-called overcontrol, and the positive effects remained after controlling for social desirability. Low self-control is thus a significant risk factor for a broad range of personal and interpersonal problems.

June P. Tangney and Angie Luzio Boone, Department of Psychology George Mason University; Roy F. Baumeister, Department of Psychology, Case Western Reserve University.

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Journal of Personality 72:2, April 2004.
Blackwell Publishing 2004

Self-control predicts college students' grades, fewer impulse control problems, better adjustment and better relationships.

(Tangney et al., 2004)

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ELSEVIER

Relations between preschool attention span-persistence and age 25 educational outcomes☆

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ABSTRACT

This study examined relations between children's attention span-persistence in preschool and later school achievement and college completion. Children were drawn from the Colorado Adoption Project using adopted and non-adopted children ($N = 430$). Results of structural equation modeling indicated that children's age 4 attention span-persistence significantly predicted math and reading achievement at age 21 after controlling for achievement levels at age 7, adopted status, child vocabulary skills, gender, and maternal education level. Relations between attention span-persistence and later achievement were not fully mediated by age 7 achievement levels. Logistic regressions also revealed that age 4 attention span-persistence skills significantly predicted the odds of completing college by age 25. The majority of this relationship was direct and was not significantly mediated by math or reading skills at age 7 or age 21. Specifically, children who were rated one standard deviation higher on attention span-persistence at age 4 had 48.7% greater odds of completing college by age 25. Discussion focuses on the importance of children's early attention span-persistence for later school achievement and educational attainment.

1. Introduction

A large body of research documents the importance of children's early skills for charting later developmental trajectories (Shonkoff & Phillips, 2000). In the search to identify sources of influence, children's early executive function and self-regulation have emerged as a salient predictor of later outcomes (McClelland, Acock, & Morrison, 2006; McClelland, Morrison, & Holmes, 2000). For example, children who enter formal schooling without the ability to pay attention, remember instructions, and demonstrate self-control have more difficulty in elementary school and throughout high school (McClelland, Cameron, Connor, et al., 2007; NICHD Early Child Care Research Network, 2003). In particular, the attention aspect of self-regulation has received increasing consideration as a predictor of later achievement (Duncan et al., 2007). In the present study, we examined the predictive strength of children's early attention span-persistence at age four for later academic achievement and educational attainment between childhood and early adulthood.

1.1. Self-regulation and the role of attention span-persistence

Children's attention span-persistence is related to executive function and the broader self-regulation construct. Self-regulation includes both cognitive and emotional regulation and refers to aspects of attentional or cognitive flexibility, working memory, inhibitory control, and the ability to regulate emotions (Baumeister & Vohs, 2004; Calkins, 2007; Eisenberg & Spinrad, 2004; Graziano, Reavis, Keane, & Calkins, 2007; Li-Grining, 2007; Ursache, Blair, & Raver, 2012). In general, self-regulation helps children manage and direct their own actions in a variety of cognitive, emotional, and social domains (Blair & Diamond, 2008; McClelland, Cameron, Ponitz, Messersmith, & Tominey, 2010). For example, self-regulation helps children inhibit an inappropriate behavior (e.g., shouting out an answer in a classroom) and control their emotional reaction to the situation (e.g., stop from having a tantrum). Related to self-regulation are concepts such as effortful control, which is the ability to utilize executive attention to inhibit dominant response in favor of a subdominant response and is based in the temperament literature (Liew, 2012; Rothbart & Rueda, 2005). Both effortful control and self-regulation are important for children's social (Eisenberg et al., 2005; Eisenberg, Sadovsky, & Spinrad, 2004), academic (Blair & Diamond, 2008

☆ Funding for this study was supported by the Colorado Adoption Project grant HD-010333 and grant HD-036773 from the National Institute of Child Health and Human Development (NICHD).

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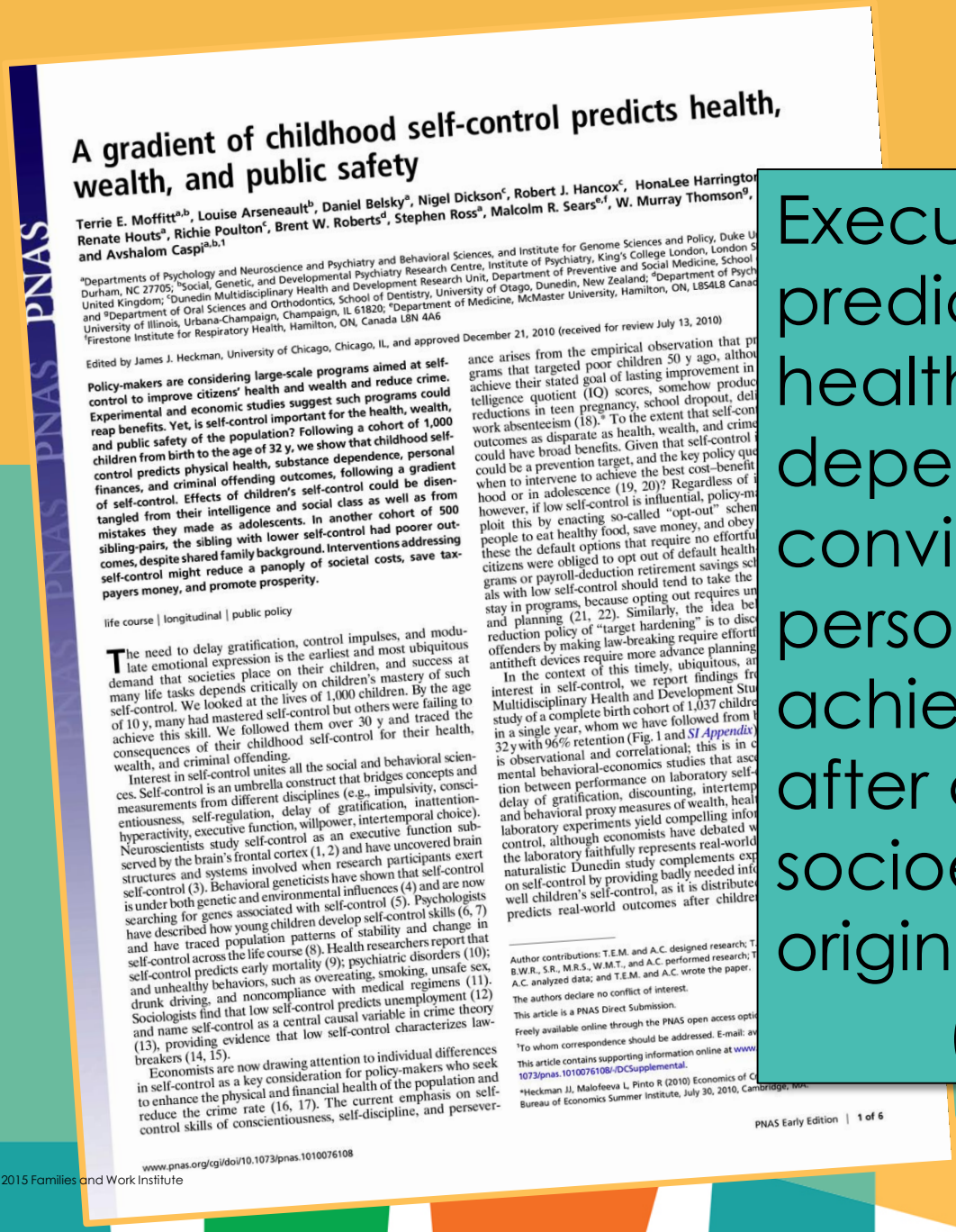
Research Quarterly (2012), http://dx

One aspect of executive function skills in four-year-olds —"attention span persistence"— is strongly predictive of whether or not these same children graduated from college when they were 25 years old.

(McClelland et al., 2012)

Executive Function Life Skills are important in workforce readiness and workforce success.



A gradient of childhood self-control predicts health, wealth, and public safety

Terrie E. Moffitt[a,b], Louise Arseneault[b], Daniel Belsky[a], Nigel Dickson[c], Robert J. Hancox[c], HonaLee Harrington[a], Renate Houts[a], Richie Poulton[c], Brent W. Roberts[d], Stephen Ross[a], Malcolm R. Sears[e,f], W. Murray Thomson[g], and Avshalom Caspi[a,b,1]

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Edited by James J. Heckman, University of Chicago, Chicago, IL, and approved December 21, 2010 (received for review July 13, 2010)

Policy-makers are considering large-scale programs aimed at self-control to improve citizens' health and wealth and reduce crime. Experimental and economic studies suggest such programs could reap benefits. Yet, is self-control important for the health, wealth, and public safety of the population? Following a cohort of 1,000 children from birth to the age of 32 y, we show that childhood self-control predicts physical health, substance dependence, personal finances, and criminal offending outcomes, following a gradient of self-control. Effects of children's self-control could be disentangled from their intelligence and social class as well as from mistakes they made as adolescents. In another cohort of 500 sibling-pairs, the sibling with lower self-control had poorer outcomes, despite shared family background. Interventions addressing self-control might reduce a panoply of societal costs, save taxpayers money, and promote prosperity.

life course | longitudinal | public policy

The need to delay gratification, control impulses, and modulate emotional expression is the earliest and most ubiquitous demand that societies place on their children, and success at many life tasks depends critically on children's mastery of such self-control. We looked at the lives of 1,000 children. By the age of 10 y, many had mastered self-control but others were failing to achieve this skill. We followed them over 30 y and traced the consequences of their childhood self-control for their health, wealth, and criminal offending.

Interest in self-control unites all the social and behavioral sciences. Self-control is an umbrella construct that bridges concepts and measurements from different disciplines (e.g., impulsivity, conscientiousness, self-regulation, delay of gratification, inattention-hyperactivity, executive function, willpower, intertemporal choice). Neuroscientists study self-control as an executive function subserved by the brain's frontal cortex (1, 2) and have uncovered brain structures and systems involved when research participants exert self-control (3). Behavioral geneticists have shown that self-control is under both genetic and environmental influences (4) and are now searching for genes associated with self-control (5). Psychologists have described how young children develop self-control skills (6, 7) and have traced population patterns of stability and change in self-control across the life course (8). Health researchers report that self-control predicts early mortality (9); psychiatric disorders (10); and unhealthy behaviors, such as overeating, smoking, unsafe sex, drunk driving, and noncompliance with medical regimens (11). Sociologists find that low self-control predicts unemployment (12) and name self-control as a central causal variable in crime theory (13), providing evidence that low self-control characterizes lawbreakers (14, 15).

Economists are now drawing attention to individual differences in self-control as a key consideration for policy-makers who seek to enhance the physical and financial health of the population and reduce the crime rate (16, 17). The current emphasis on self-control skills of conscientiousness, self-discipline, and persever-

ance arises from the empirical observation that pr
grams that targeted poor children 50 y ago, althou
achieve their stated goal of lasting improvement in
telligence quotient (IQ) scores, somehow produc
reductions in teen pregnancy, school dropout, deli
work absenteeism (18).* To the extent that self-cont
outcomes as disparate as health, wealth, and crime
could have broad benefits. Given that self-control i
could be a prevention target, and the key policy que
when to intervene to achieve the best cost–benefit
hood or in adolescence (19, 20)? Regardless of i
however, if low self-control is influential, policy-ma
ploit this by enacting so-called "opt-out" schem
people to eat healthy food, save money, and obey
these the default options that require no effortfu
citizens were obliged to opt out of default health
grams or payroll-deduction retirement savings sch
als with low self-control should tend to take the
stay in programs, because opting out requires un
and planning (21, 22). Similarly, the idea be
reduction policy of "target hardening" is to disc
offenders by making law-breaking require effortf
antitheft devices require more advance planning

In the context of this timely, ubiquitous, ar
interest in self-control, we report findings fr
Multidisciplinary Health and Development Stu
study of a complete birth cohort of 1,037 childre
in a single year, whom we have followed from t
32 y with 96% retention (Fig. 1 and *SI Appendix*)
is observational and correlational; this is in c
mental behavioral-economics studies that asce
tion between performance on laboratory self-
delay of gratification, discounting, intertemp
and behavioral proxy measures of wealth, healt
laboratory experiments yield compelling infor
control, although economists have debated w
the laboratory faithfully represents real-world
naturalistic Dunedin study complements exp
on self-control by providing badly needed info
well children's self-control, as it is distributed
predicts real-world outcomes after childre

Author contributions: T.E.M. and A.C. designed research; T.
B.W.R., S.R., M.R.S., W.M.T., and A.C. performed research; T.
A.C. analyzed data; and T.E.M. and A.C. wrote the paper.

The authors declare no conflict of interest.

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Freely available online through the PNAS open access opti

[1]To whom correspondence should be addressed. E-mail: av

This article contains supporting information online at www.
1073/pnas.1010076108/-/DCSupplemental.

*Heckman JJ, Malofeeva L, Pinto R (2010) Economics of C
Bureau of Economics Summer Institute, July 30, 2010, Cambridge, MA.

www.pnas.org/cgi/doi/10.1073/pnas.1010076108

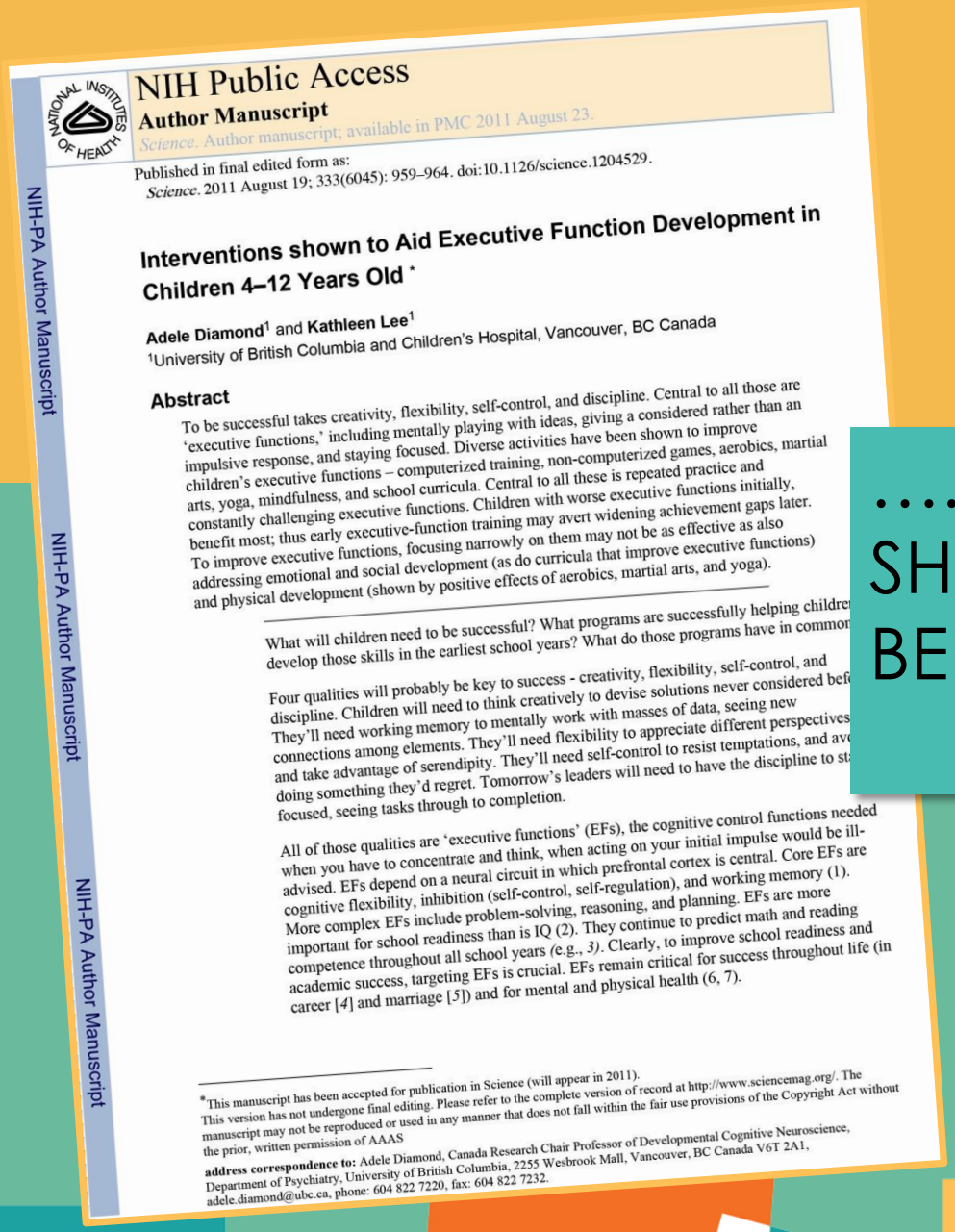
Executive functions are predictive of physical health, substance dependence, criminal convictions, and personal finances achieved at age 32, after controlling for socioeconomic status of origin and IQ.

(Moffitt et al., 2011)

Families and Work Institute has studied these issues for several decades.

Employers are concerned that new entrants to the workforce have a fill in the bubble mentality, aren't used to working in teams, and don't have experience in challenging themselves.

If we are going to make a difference in school readiness, school success, workforce readiness and workforce success, **Executive Function Life Skills are a strong place to intervene…**



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Interventions shown to Aid Executive Function Development in Children 4–12 Years Old *

Adele Diamond[1] and **Kathleen Lee**[1]
[1]University of British Columbia and Children's Hospital, Vancouver, BC Canada

Abstract

To be successful takes creativity, flexibility, self-control, and discipline. Central to all those are 'executive functions,' including mentally playing with ideas, giving a considered rather than an impulsive response, and staying focused. Diverse activities have been shown to improve children's executive functions – computerized training, non-computerized games, aerobics, martial arts, yoga, mindfulness, and school curricula. Central to all these is repeated practice and constantly challenging executive functions. Children with worse executive functions initially, benefit most; thus early executive-function training may avert widening achievement gaps later. To improve executive functions, focusing narrowly on them may not be as effective as also addressing emotional and social development (as do curricula that improve executive functions) and physical development (shown by positive effects of aerobics, martial arts, and yoga).

What will children need to be successful? What programs are successfully helping children develop those skills in the earliest school years? What do those programs have in common

Four qualities will probably be key to success - creativity, flexibility, self-control, and discipline. Children will need to think creatively to devise solutions never considered before. They'll need working memory to mentally work with masses of data, seeing new connections among elements. They'll need flexibility to appreciate different perspectives and take advantage of serendipity. They'll need self-control to resist temptations, and avoid doing something they'd regret. Tomorrow's leaders will need to have the discipline to stay focused, seeing tasks through to completion.

All of those qualities are 'executive functions' (EFs), the cognitive control functions needed when you have to concentrate and think, when acting on your initial impulse would be ill-advised. EFs depend on a neural circuit in which prefrontal cortex is central. Core EFs are cognitive flexibility, inhibition (self-control, self-regulation), and working memory (1). More complex EFs include problem-solving, reasoning, and planning. EFs are more important for school readiness than is IQ (2). They continue to predict math and reading competence throughout all school years (e.g., *3*). Clearly, to improve school readiness and academic success, targeting EFs is crucial. EFs remain critical for success throughout life (in career [*4*] and marriage [*5*]) and for mental and physical health (6, 7).

*This manuscript has been accepted for publication in Science (will appear in 2011).

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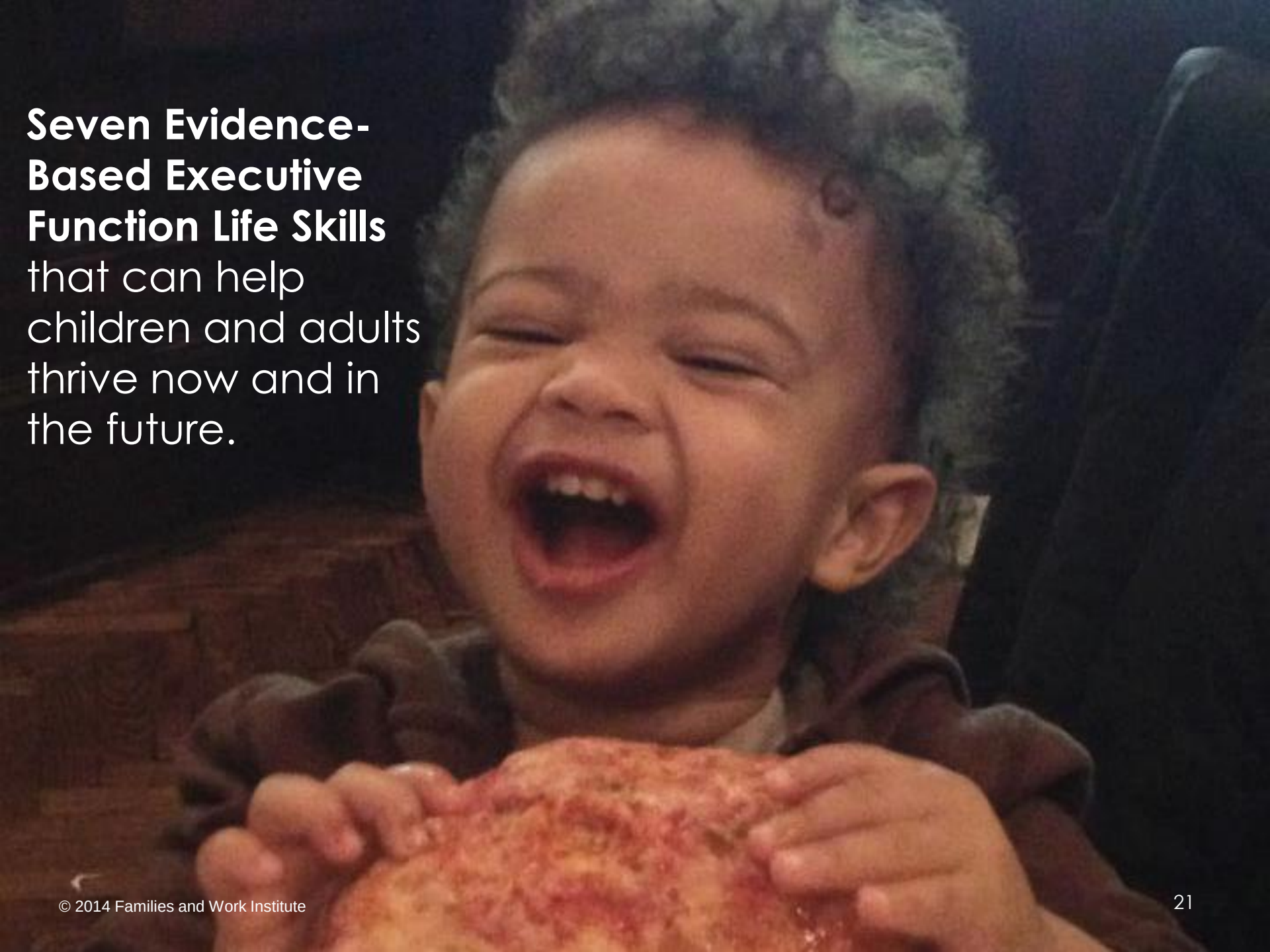
….. BECAUSE RESEARCH SHOWS THAT THEY CAN BE IMPROVED.

(Diamond and Lee, 2011)



Seven Evidence-Based Executive Function Life Skills that can help children and adults thrive now and in the future.

Focus and Self Control

Perspective Taking

Communicating

Making Connections

Critical Thinking

Taking on Challenges

Self-Directed, Engaged Learning

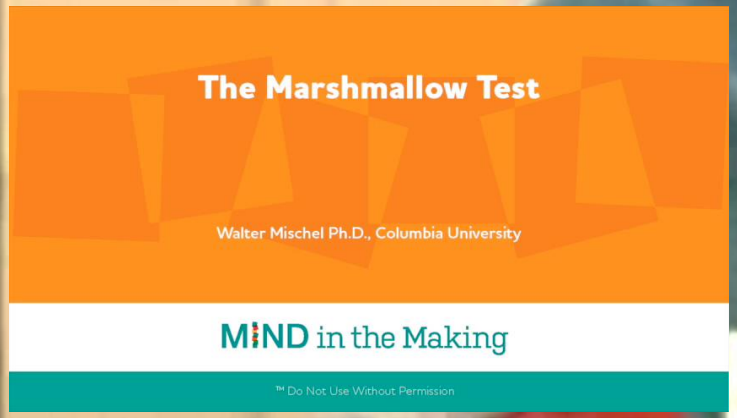
EXECUTIVE FUNCTION LIFE SKILLS

It all begins with you.

Focus and Self Control

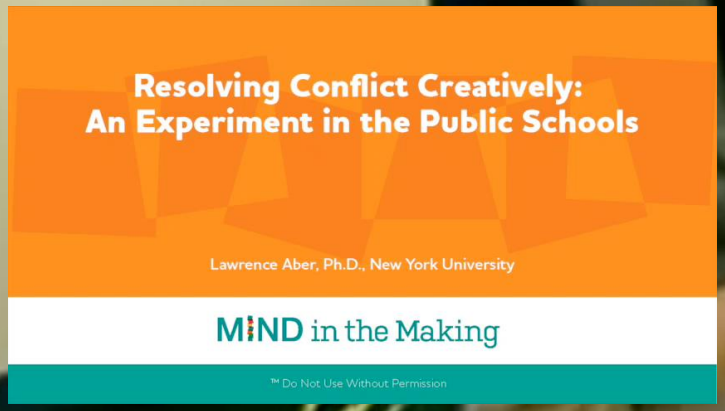
Factors That Matter: Helping Children Develop Their Own Strategies

THE MARSHMALLOW TEST WALTER MISCHEL



Perspective Taking

Factors That Matter: Helping Children Understand The Perspectives Of Others

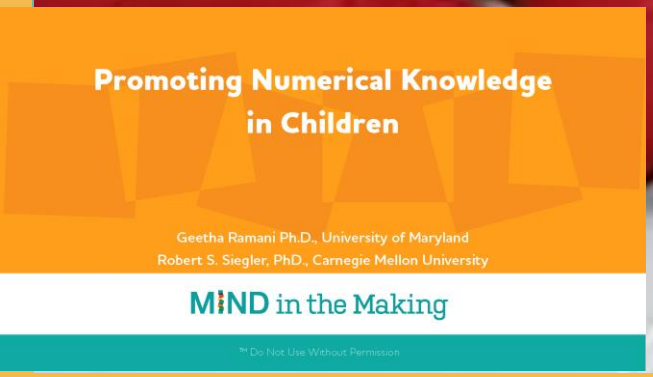


RESOLVING CONFLICTS IN THE SCHOOL-AGE YEARS
LAWRENCE ABER

Children learn to communicate with conversation duets—with and without words!

Making Connections

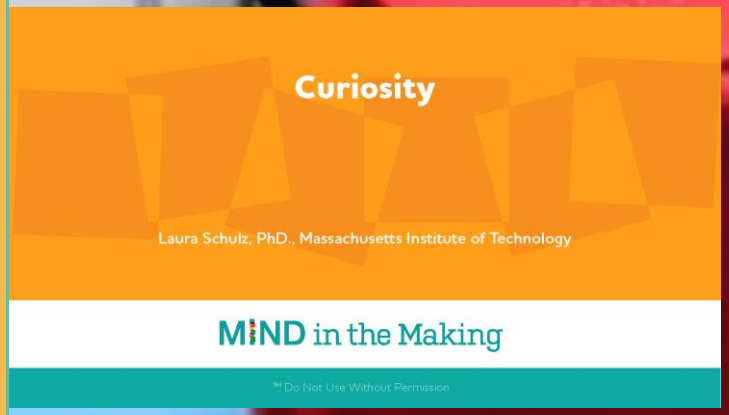
Factors That Matter: Playing Math and Science Games With Children



PROMOTING NUMERICAL KNOWLEDGE IN CHILDREN
GEETHA RAMANI AND ROBERT SIEGLER

Critical Thinking

Factors That Matter: Promoting Curiosity



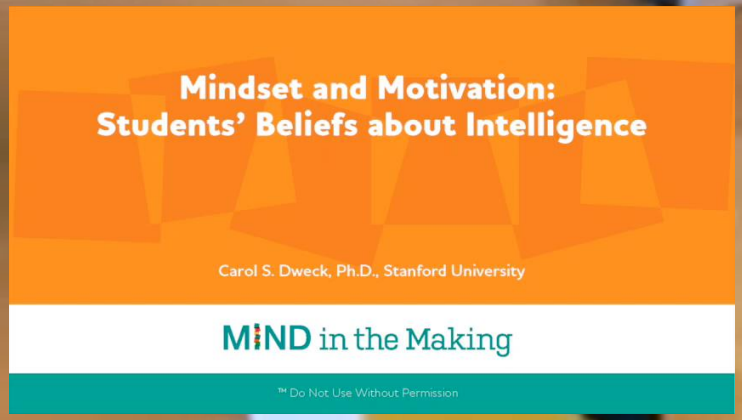
CURIOSITY
Laura Schulz

Factors That Matter: Promoting Reflection

Time for reflection—building that skill and the skills of Problem Solving and Critical Thinking

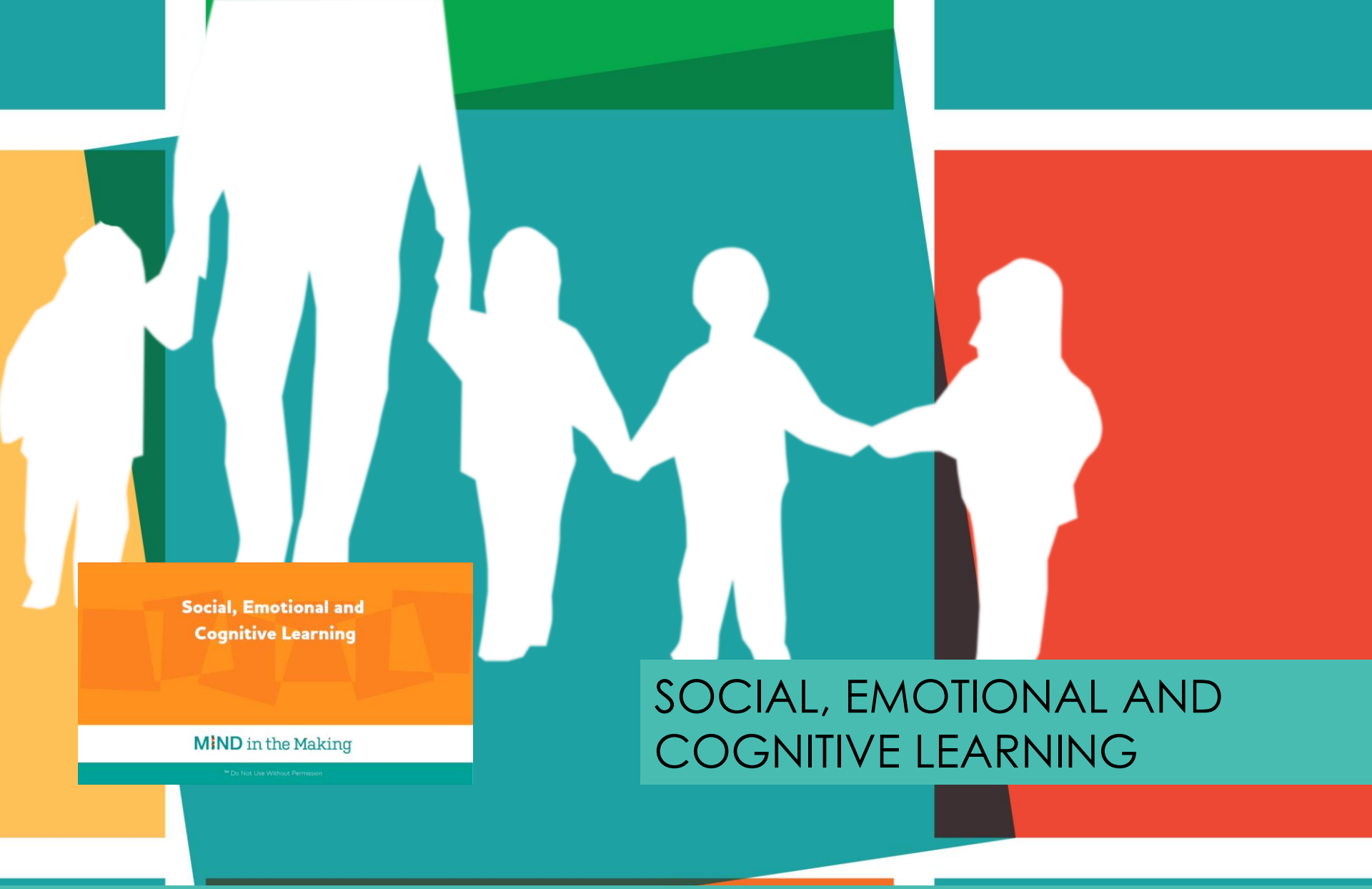
Taking on Challenges

Factors That Matter: Praising Children's Efforts and Strategies



THE POWER OF MINDSETS
CAROL DWECK

Self-Directed, Engaged Learning



SOCIAL, EMOTIONAL AND COGNITIVE LEARNING

Factors That Matter: Promoting Children's Social, Emotional, and Cognitive Learning.

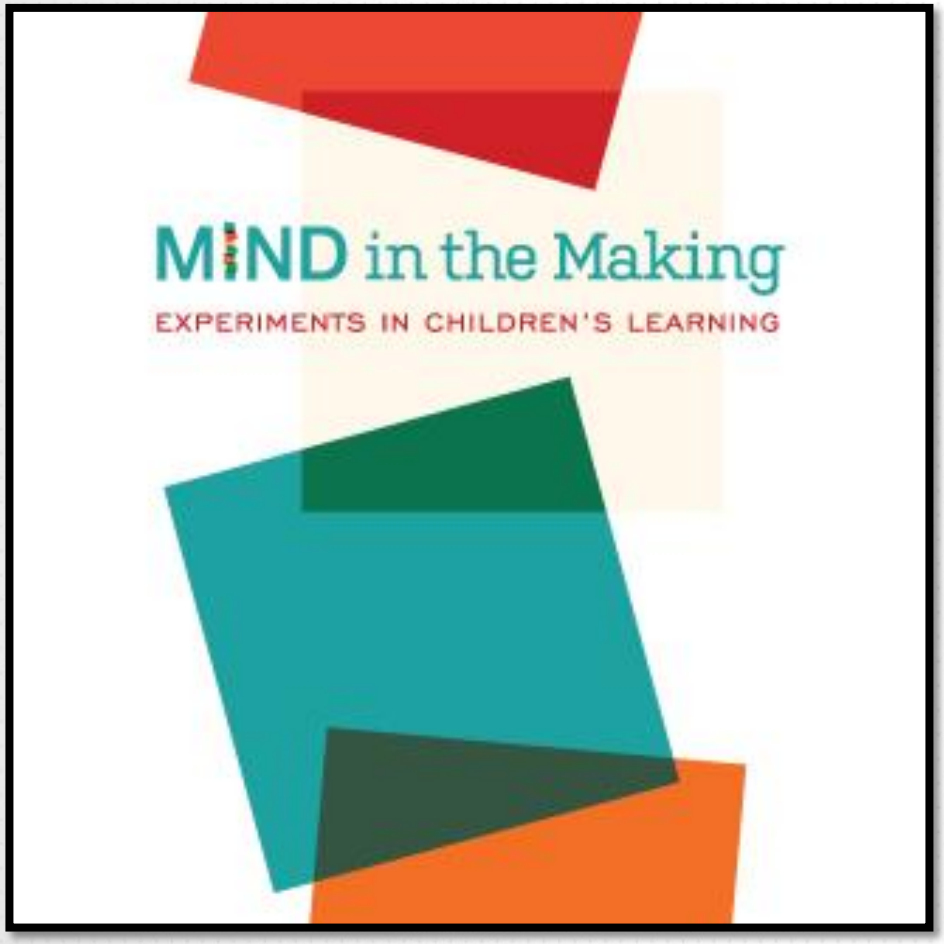
Surround Strategy

EXECUTIVE FUNCTION LIFE SKILLS

All focused on relationships

- COMMUNITY LEADERS
- PARENTS
- EDUCATORS BIRTH – EIGHT
- HEALTH CARE
- MUSEUMS AND LIBRARIES
- MEDIA

MIND IN THE MAKING RESOURCES

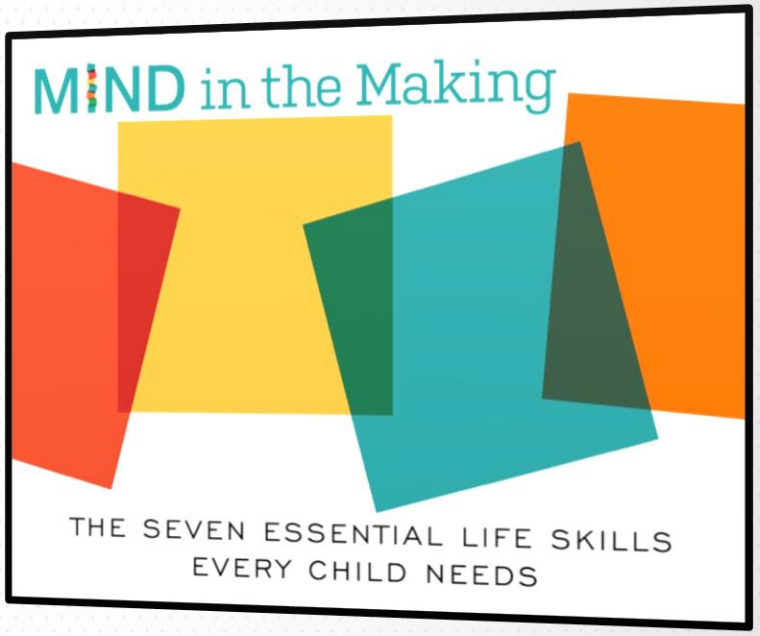


MIND IN THE MAKING
EXPERIMENTS IN CHILDREN'S LEARNING DVD

Seven Essential Life Skills Modules for Families And Professionals provide new approach to learning and teaching.

The Eight Modules:

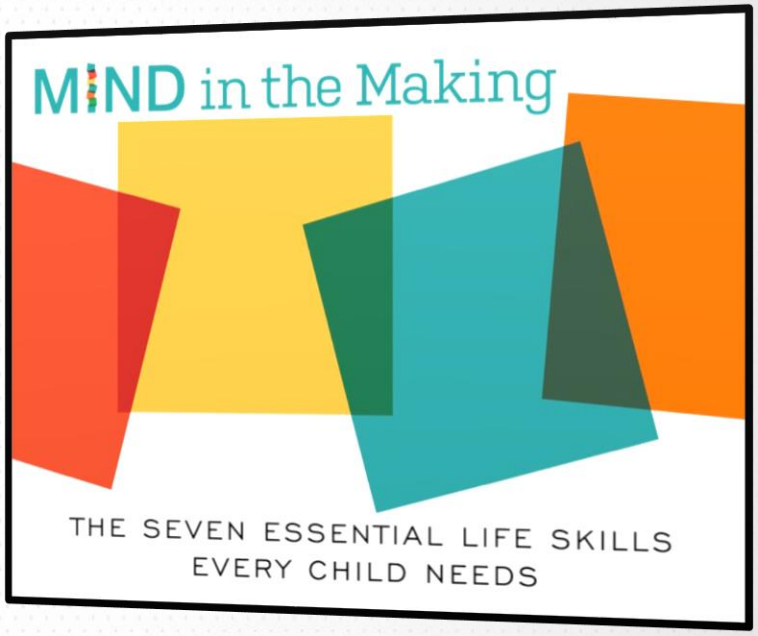
- Promote Executive Function Life Skills for children by promoting them first for adults.
- Provide adults with first-hand experience with child development research.
- Use the language of science
- Tie action to research.



Funded by the W. K Kellogg Foundation and the Marks Family Foundation.

The Eight Modules (continued):

- Reframe adults' approach to children's behavior away from managing children's behavior to providing opportunities to teach life skills.
- Foster goal setting among adults.
- Use an evidence-based theory of teaching and learning.
- Create linkages and alignments among systems in the 0-8 systems.
- Redefine family engagement.



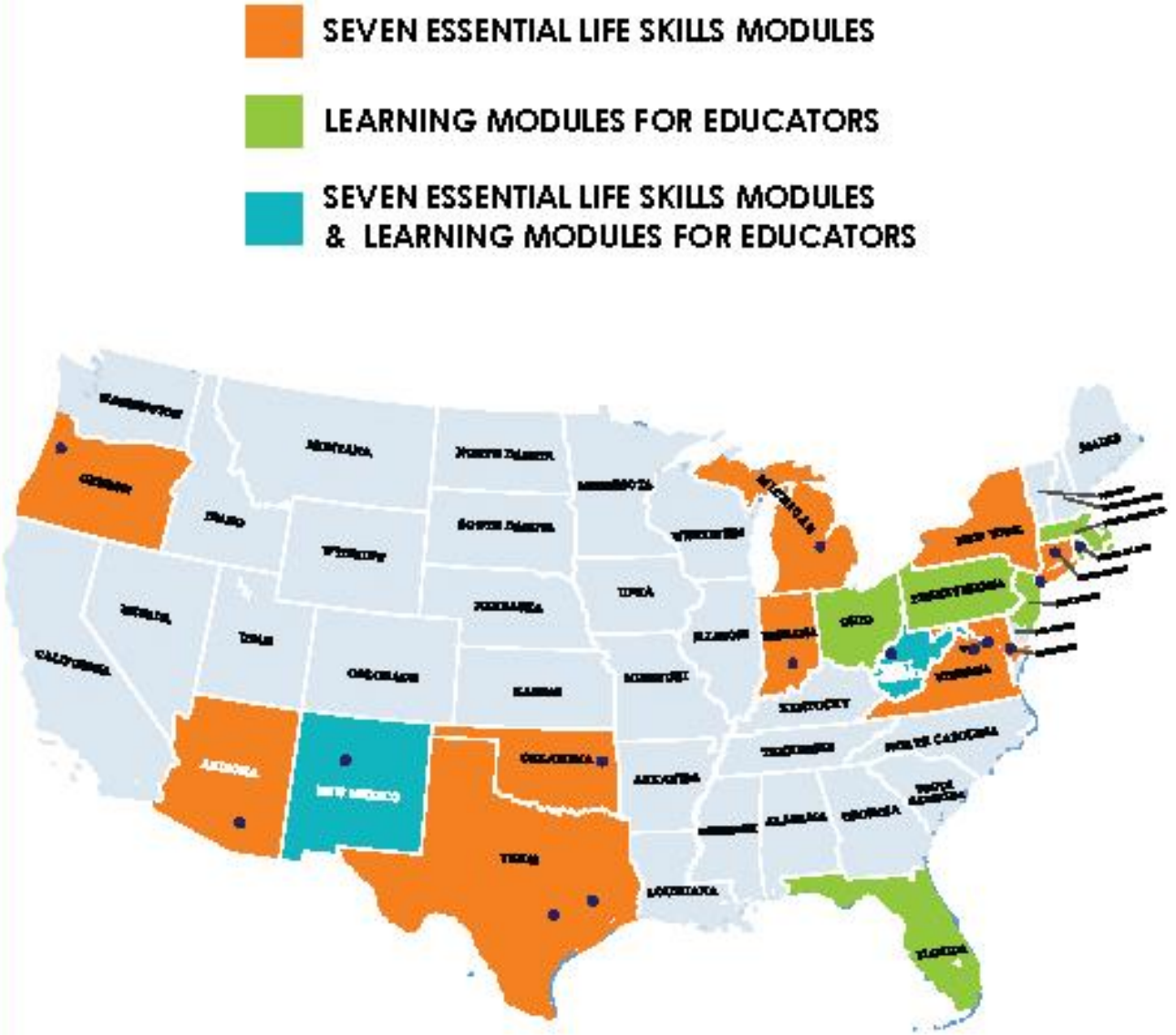
Funded by the W. K Kellogg Foundation and the Marks Family Foundation.

SEVEN ESSENTIAL LIFE SKILLS MODULES

- Albuquerque and other communities in New Mexico
- Arlington, Virginia
- Austin, Texas
- Baltimore, Maryland
- Detroit, Michigan
- Evansville, Indiana
- Fairfax County, Virginia
- Hartford, Connecticut
- Houston, Texas
- New York City, New York—Children's Aid Society
- Multnomah County, Oregon
- Providence, Rhode Island
- Tucson and other communities in Arizona
- Tulsa and other communities in Oklahoma
- Charleston and other communities in West Virginia

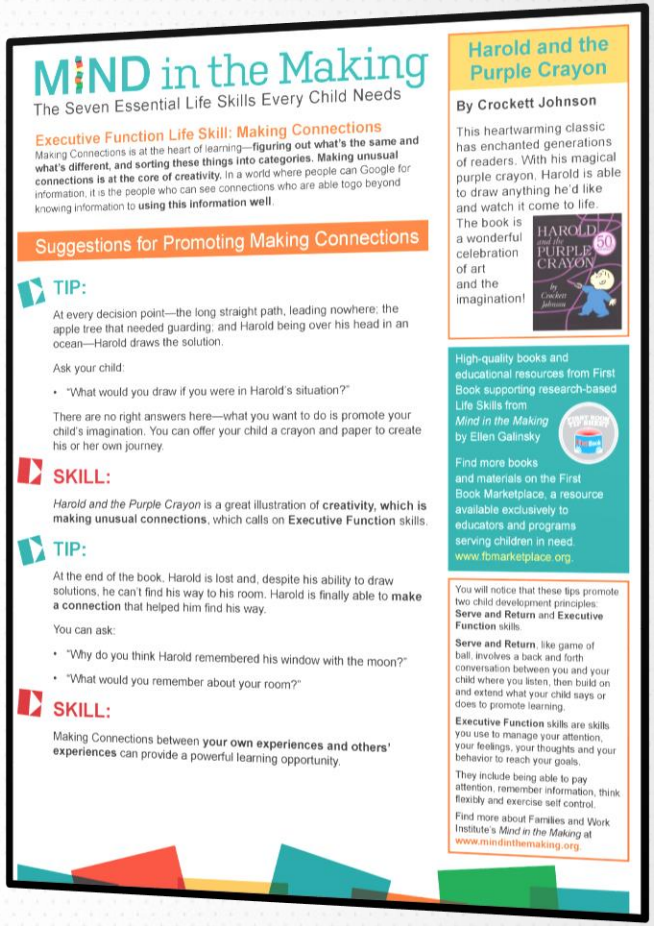
LEARNING MODULES FOR EDUCATORS

- Florida
- New Jersey
- New Mexico
- Ohio
- Pennsylvania
- Rhode Island
- West Virginia



MIND IN THE MAKING
LIBRARY OF CHILDREN'S BOOKS, GAMES, AND FREE TIP SHEETS

- Selected library of 98 books for infant-toddlers, preschoolers and school-age children that promote
- First Book makes these books available at greatly reduced prices for programs serving low-income children.
- ***Mind in the Making*** created free tips sheets showing how to promote Executive Functions—256,231 downloads since September 2013—164,955 in English and 91,276 in Spanish: **http://mindinthemaking.org/firstbook/**.


MIND in the Making
The Seven Essential Life Skills Every Child Needs

Executive Function Life Skill: Making Connections
Making Connections is at the heart of learning—**figuring out what's the same and what's different, and sorting these things into categories. Making unusual connections is at the core of creativity.** In a world where people can Google for information, it is the people who can see connections who are able togo beyond knowing information to **using this information well**.

Suggestions for Promoting Making Connections

TIP:
At every decision point—the long straight path, leading nowhere; the apple tree that needed guarding; and Harold being over his head in an ocean—Harold draws the solution.

Ask your child:
- "What would you draw if you were in Harold's situation?"

There are no right answers here—what you want to do is promote your child's imagination. You can offer your child a crayon and paper to create his or her own journey.

SKILL:
Harold and the Purple Crayon is a great illustration of **creativity, which is making unusual connections**, which calls on **Executive Function** skills.

TIP:
At the end of the book, Harold is lost and, despite his ability to draw solutions, he can't find his way to his room. Harold is finally able to **make a connection** that helped him find his way.

You can ask:
- "Why do you think Harold remembered his window with the moon?"
- "What would you remember about your room?"

SKILL:
Making Connections between **your own experiences and others' experiences** can provide a powerful learning opportunity.

Harold and the Purple Crayon
By Crockett Johnson
This heartwarming classic has enchanted generations of readers. With his magical purple crayon, Harold is able to draw anything he'd like and watch it come to life. The book is a wonderful celebration of art and the imagination!

High-quality books and educational resources from First Book supporting research-based Life Skills from *Mind in the Making* by Ellen Galinsky
Find more books and materials on the First Book Marketplace, a resource available exclusively to educators and programs serving children in need.
www.fbmarketplace.org

You will notice that these tips promote two child development principles: **Serve and Return** and **Executive Function** skills.

Serve and Return, like game of ball, involves a back and forth conversation between you and your child where you listen, then build on and extend what your child says or does to promote learning.

Executive Function skills are skills you use to manage your attention, your feelings, your thoughts and your behavior to reach your goals.

They include being able to pay attention, remember information, think flexibly and exercise self control.

Find more about Families and Work Institute's *Mind in the Making* at www.mindinthemaking.org.

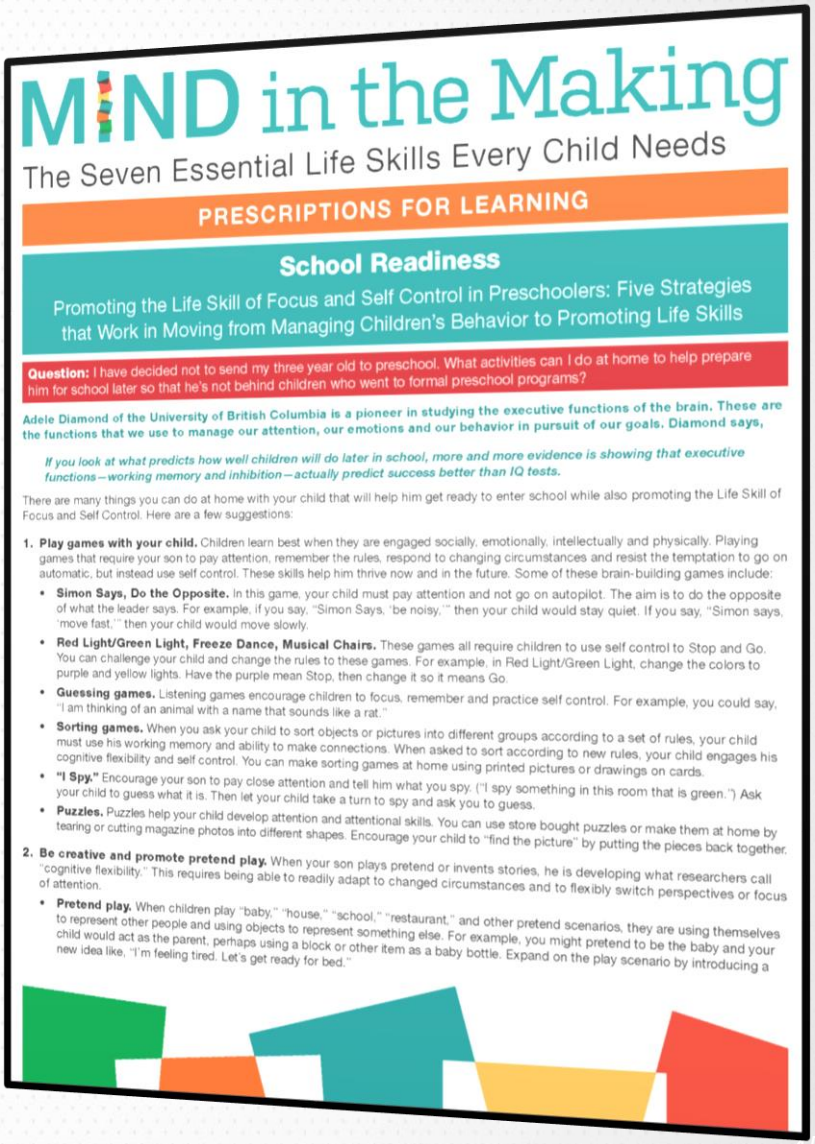
Collaboration between First Book and Mind in the Making funded by the Popplestone Foundation.

MIND IN THE MAKING
FREE PRESCRIPTIONS FOR LEARNING

- Tips sheets take frequently asked questions by parents, and offer strategies that work in moving from managing children's behavior to promoting Life Skills.

http://www.mindinthemaking.org/prescriptions-for-learning/

Funded by the Popplestone Foundation.



MIND in the Making

The Seven Essential Life Skills Every Child Needs

PRESCRIPTIONS FOR LEARNING

School Readiness

Promoting the Life Skill of Focus and Self Control in Preschoolers: Five Strategies that Work in Moving from Managing Children's Behavior to Promoting Life Skills

Question: I have decided not to send my three year old to preschool. What activities can I do at home to help prepare him for school later so that he's not behind children who went to formal preschool programs?

Adele Diamond of the University of British Columbia is a pioneer in studying the executive functions of the brain. These are the functions that we use to manage our attention, our emotions and our behavior in pursuit of our goals. Diamond says,

If you look at what predicts how well children will do later in school, more and more evidence is showing that executive functions—working memory and inhibition—actually predict success better than IQ tests.

There are many things you can do at home with your child that will help him get ready to enter school while also promoting the Life Skill of Focus and Self Control. Here are a few suggestions:

1. **Play games with your child.** Children learn best when they are engaged socially, emotionally, intellectually and physically. Playing games that require your son to pay attention, remember the rules, respond to changing circumstances and resist the temptation to go on automatic, but instead use self control. These skills help him thrive now and in the future. Some of these brain-building games include:
   - **Simon Says, Do the Opposite.** In this game, your child must pay attention and not go on autopilot. The aim is to do the opposite of what the leader says. For example, if you say, "Simon Says, 'be noisy,'" then your child would stay quiet. If you say, "Simon says, 'move fast,'" then your child would move slowly.
   - **Red Light/Green Light, Freeze Dance, Musical Chairs.** These games all require children to use self control to Stop and Go. You can challenge your child and change the rules to these games. For example, in Red Light/Green Light, change the colors to purple and yellow lights. Have the purple mean Stop, then change it so it means Go.
   - **Guessing games.** Listening games encourage children to focus, remember and practice self control. For example, you could say, "I am thinking of an animal with a name that sounds like a rat."
   - **Sorting games.** When you ask your child to sort objects or pictures into different groups according to a set of rules, your child must use his working memory and ability to make connections. When asked to sort according to new rules, your child engages his cognitive flexibility and self control. You can make sorting games at home using printed pictures or drawings on cards.
   - **"I Spy."** Encourage your son to pay close attention and tell him what you spy. ("I spy something in this room that is green.") Ask your child to guess what it is. Then let your child take a turn to spy and ask you to guess.
   - **Puzzles.** Puzzles help your child develop attention and attentional skills. You can use store bought puzzles or make them at home by tearing or cutting magazine photos into different shapes. Encourage your child to "find the picture" by putting the pieces back together.
2. **Be creative and promote pretend play.** When your son plays pretend or invents stories, he is developing what researchers call "cognitive flexibility." This requires being able to readily adapt to changed circumstances and to flexibly switch perspectives or focus of attention.
   - **Pretend play.** When children play "baby," "house," "school," "restaurant," and other pretend scenarios, they are using themselves to represent other people and using objects to represent something else. For example, you might pretend to be the baby and your child would act as the parent, perhaps using a block or other item as a baby bottle. Expand on the play scenario by introducing a new idea like, "I'm feeling tired. Let's get ready for bed."

45

vroom
Brain building moments

We have been working with the Bezos Family Foundation to create materials for an initiative called Vroom. Vroom was born out of a need for creative tools and materials that inspire families to turn everyday moments into brain building moments. It was developed with thoughtful input from parents, early childhood experts, neuroscientists, and community leaders in order to share the science of early brain development in new ways so that all children have the chance to become thriving adults. The Bezos Family Foundation provided funding, and a lot of passion, because they believe that all parents have the potential to create a bright future for their children.

http://www.joinvroom.org

MiND in the Making

EVERYONE CAN PROMOTE THESE SKILLS AND EVERYONE CAN LEARN THESE SKILLS.

IT DOES NOT TAKE EXPENSIVE TOYS OR MATERIALS.

DOING EVERYDAY THINGS IN NEW WAYS.

Families and **Work** Institute

MIND in the Making

FROM RESEARCH TO ACTION

Ellen Galinsky | Mind in the Making | Families and Work Institute

InvestiGator Club | May, 2015

MIND in the Making

FROM RESEARCH TO ACTION

Find resources at **MindInTheMaking.org** and **FamiliesAndWork.org**

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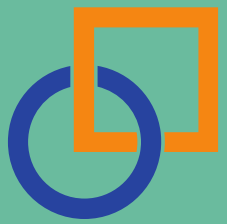
LinkedIn.com/company/families-and-work-institute

@EllenGalinsky | Facebook.com/Mindinthemaking | @mitm_fwi



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