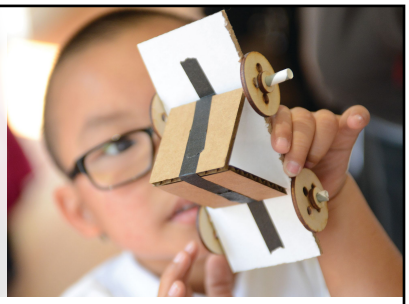
Re-Imagining School Readiness: Key Findings from Research



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Position paper

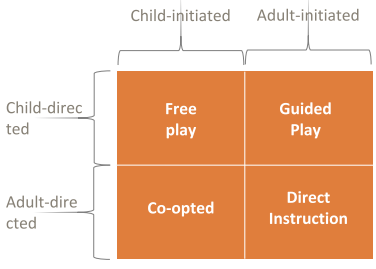
- Released in 2016
- Comprehensive literature review of cognitive and developmental psychology
- Skills and conditions that matter most for success
- Guide educators and families in design of experiences and environments

Skills	Key findings
Talk & Play	1 Quality adult-child interactions shape children's thinking skills. The conversations we have, the questions we ask, and the experiences we provide matter. Simple shifts in our approach and language boost children's learning and cognitive development. 5 Children with stronger social skills do better in school, in the workplace, and in life. Child-directed play is key to the development of social skills and need to be prioritized in early education.
Science & Math	2 Science learning is critical for the development of higher-order thinking but is missing from most early school experiences. 3 Demonstrating strong math skills at an early age is a strong indicator of developing conceptual thinking skills and predicts long-term success in school, not just in later math learning but also in later reading proficiency.
Body & Brain	4 Planning, self-awareness, and self-control – what psychologists refer to as *executive functions* – predict positive school and life outcomes. Studies show that children develop executive functions through experience. 6 Higher-order thinking, retention of information, and creativity flourish when children experience minimized stress and when their basic needs are met. While persistent stress can impede brain development, caring relationships with adults as well as programs that teach emotion regulation provide protection from risk.

Adult-child interactions

Quality adult-child interactions shape children's thinking skills.

Talk & Play



Adapted from Kathy Hirsh Pasek's "Becoming Brilliant"

Prosocial behaviors

Children with stronger social skills do better in school, in the workplace and in life.

Talk & Play

Prosocial behaviors

Reciprocal interactions trigger helpful behaviors in children Barragan and Dweck (2014)

1. In the reciprocal play condition, the child and experimenter rolled a ball back and forth.

2. In the parallel play play condition, the child and experimenter each rolled a ball on their own while next to each other.

3. After a few minutes, the experimenter "accidentally" knocked an object to the ground and clearly desired help from the child to retrieve it.

Key finding: toddlers who engaged in reciprocal play were three times more likely to help pick up objects as children who engaged in parallel play.

Implication: Altruistic behavior is strongly influenced by social interactions and can be elicited by simple and short reciprocal interactions.

Scientific reasoning

Science learning is critical for the development of higher-order thinking, but missing from most early school experiences.

Science & Math

Scientific reasoning

A powerful combination for problem solving (Legare, 2014)

Explanation

Asking children to explain how things work deepens reasoning about cause and effect.

Exploration

When children encounter something unexpected, they engage in more exploratory play to discover how things work.

Math knowledge and skills

Early math skills predict long-term success in school, not just in math learning but also in later reading proficiency.

Science & Math

Math knowledge and skills

Block talk: Spatial language during block play

Ferrara, Hirsh-Pasek, Newcombe, Golinkoff, and Lam (2011)

1. In the free play condition, parents and children played with blocks without any guidance.

2. In the guided play condition, children and parents were given numbered photographs that depicted steps to build a structure.

3. In the third condition—play with preassembled structures—children and parents were given a completed and glued-together model.

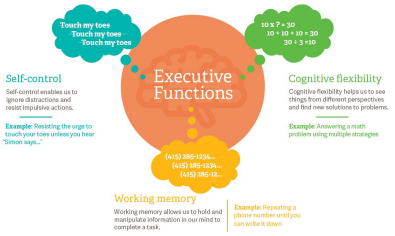
Key finding: Parents in the guided play condition produced significantly higher proportions of spatial talk than those in the other two conditions.	Implication: Play context impacts the amount of spatial vocabulary that children are exposed to, which in turn can benefit their spatial skills.

Executive function

Planning, self-awareness, and self-control—executive functions—predict positive school and life outcomes.

Body & Brain

Executive Functions



Self-control
Self-control enables us to ignore distractions and resist impulsive actions.
Example: Resisting the urge to touch your toes unless you hear "Simon says..."

Cognitive flexibility
Cognitive flexibility helps us to see things from different perspectives and find new solutions to problems.
Example: Answering a math problem using multiple strategies

Working memory
Working memory allows us to hold and manipulate information in our mind to complete a task.
Example: Repeating a phone number until you can write it down

Executive Functions and Success

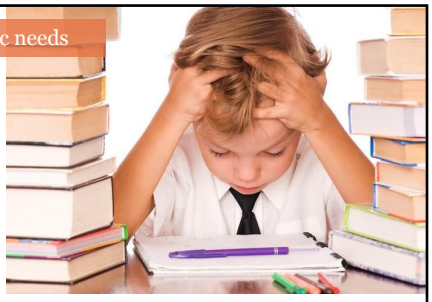
- working memory
- inhibition
- attention control

Executive functions (EFs) predict:
- Literacy and math achievement
- Higher college-going rates
- Lower incarceration rates
- Interpersonal outcomes

Stress and basic needs

Higher-order thinking, retention of information, and creativity flourish when children experience minimized stress and when their basic needs are met.


Body &
Brain



Program Example

Connections Math Program:

- ✓ Adult-child interactions
- ✓ Math knowledge and skills
- ✓ Prosocial behaviors

Resources

centerforchildhoodcreativity.org/research

Reimagining School Readiness Toolkit

http://bit.ly/CCC_toolkit

California STATE LIBRARY

Center for Childhood Creativity

Upcoming Reimagining School Readiness Webinars

Promising Practices: Thurs., Mar. 21, 2019 @ Noon Pacific

Toolkit Overview: Wed., Apr. 17, 2019 @ Noon Pacific

For more information and to register: http://bit.ly/SRWebinarSeries

Thank you for your feedback!

https://www.surveymonkey.com/r/ELFCCCWebinarEvalFeb2019