Today's Skills Start with Early Learning

Wednesday, October 22, 2014
11:00am-12:00pm
Capitol Visitors Center,
Congressional Meeting Room North
(CVC 268)

Partnership for 21st Century Skills

Welcome!

Helen Soulé, Ph.D.
Executive Director
Partnership for 21st Century Skills

Sarah Rittling
National Director
First Five Years Fund

Thank You to Our Sponsors!

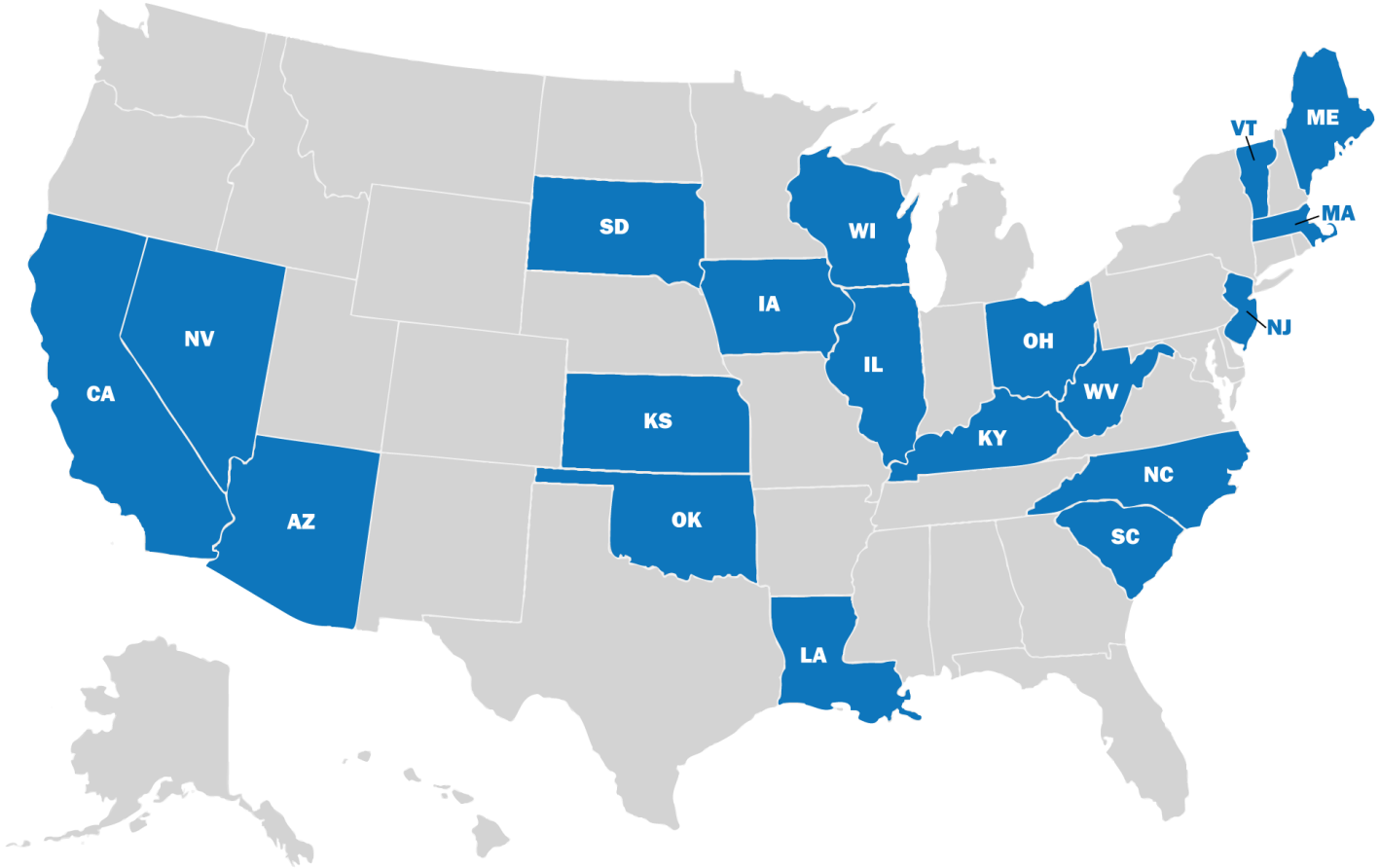
P21 Mission

Serve as a catalyst to position 21st Century Skills at the center of U.S. K-12 education by building collaborative partnerships among education, business, community and government leaders.

Partnership for 21st Century Skills

P21 State Leadership Initiative

- Arizona
- California
- Illinois
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Massachusetts
- Nevada
- New Jersey
- North Carolina
- Ohio
- Oklahoma
- South Carolina
- South Dakota
- Vermont
- West Virginia
- Wisconsin



Partnership for 21st Century Skills

P21 Members

Apple Inc.

Ford Motor Company Fund
and Community Services

The Walt Disney Company

Partnership for
21st Century Skills

Panel Introductions

Kathleen Kremer, Ph.D.

Head of Preschool Research,

Fisher-Price

Kathy Hirsh-Pasek, Ph.D.

Stanley and Debra Lefkowitz Faculty Fellow,

Temple University

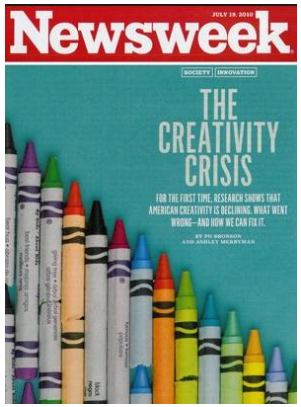
Lessons from the sandbox for the boardroom:
Realizing the promise of high quality preschool

Partnership for 21st Century Skills

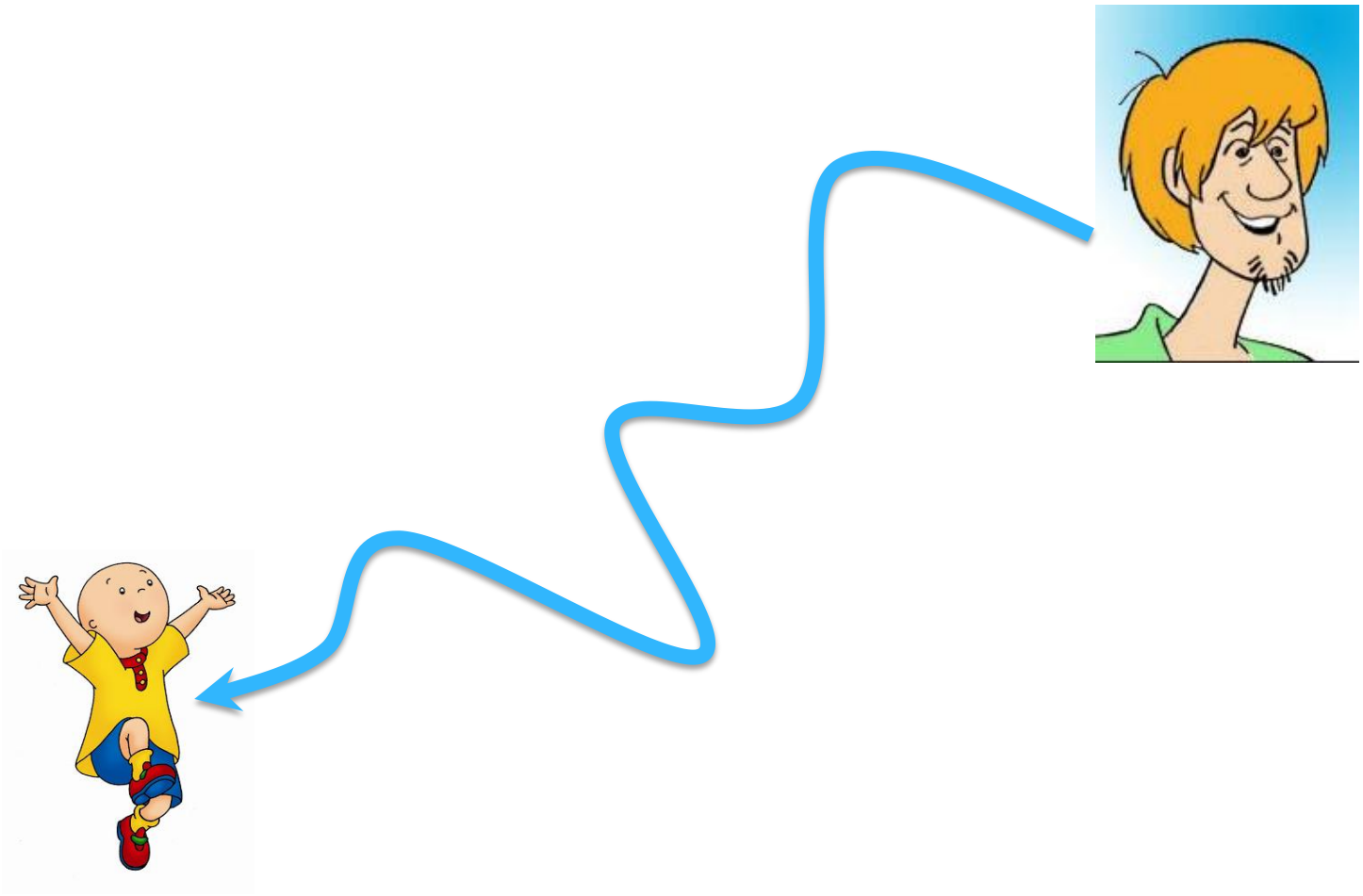
The "education" problem
Oft cited facts:

- America is falling behind in the international rankings (PISA)
  - 17th in reading behind Finland, Poland, Japan
  - 30th in math, a full 13 slots behind Slovenia
  - 23rd in science
  - 50% of our inner city students do not graduate high school
  - The US is 12th in the % of citizens with college degrees
- A group of 500 CEOs surveyed say our graduates are not prepared for the workforce
- The Military suggests our educational status is a national security problem
- *Newsweek* decries our "creativity crisis." We are not training students for the jobs of tomorrow

OECD PISA



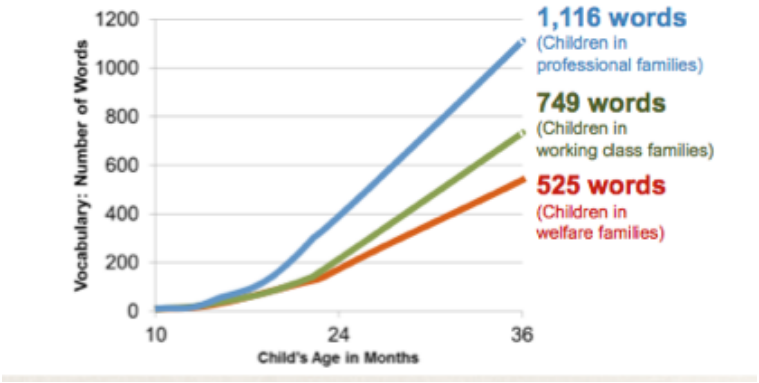
Less recognized is that…



By age 3, there are gaps in children's ability in…

- **Language:**

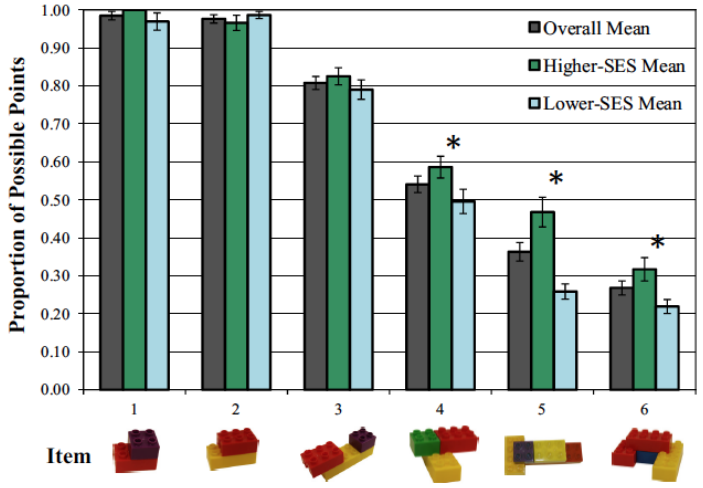
  These differences translate to lower language scores at age 9-10 and lower reading comprehension scores throughout school.



From Hart and Risley 1995

- **Spatial skills:**

  In children's ability to copy a block design with appropriate number and orientation



From Verdine et al. 2014

And by Pre-K, in

- Numeracy:

Math knowledge in kindergarten predicts math achievement through elementary and even high school. Gaps between low and higher resource children get larger over time (Rathbun &West, 2004). Gaps in standardized tests Starkey et al. 2004; math activities (Clements & Sarama, 2005; Levine et al., 2010).

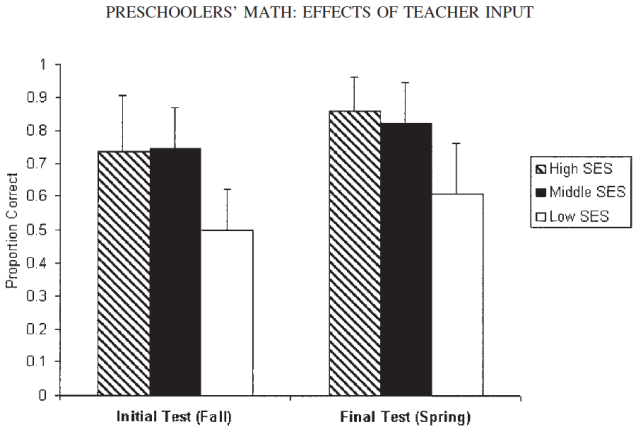


Figure 1. Proportion correct on math assessment for the three socioeconomic status (SES) groups (high, middle, and low) in the fall and the spring of the 4-year-old preschool year.

From Klibanoff et al., 2006

What's a nation to do?

How do we remedy the inequities?

The traditional answer:
FILL THE GAP

Mandate preschool programs that stuff content into the "empty" heads of young children – reading, math….

But filling children with content will only go so far….

- Kids are not empty vessels
- The world is changing – facts are at our fingertips
  - **Business leaders suggest that information doubles every 2.5 years!**
- Schools cannot do it alone
  - **Children spend only 20% of their waking time in school. What should we do with the other 80%?**

A new way to conceptualize early childhood learning:

Building a foundation for HIGH QUALITY learning at home and school

Where a high quality foundation for learning must include….

- Content – a strong curricular component (3Rs)

- Along with learning-to-learn skills such as:
  - Collaboration
  - Communication
  - Critical Thinking
  - Creative Innovation
  - Confidence (and grit) in the face of intellectual risks

In preschools, HIGH Quality occurs in environments where…

Teachers are trained in early childhood, small group sized, targeted learning, & warm and engaging teachers…

And where the pedagogical approach is developmentally appropriate – playful learning.

Playful Learning contains time for both free and guided play:

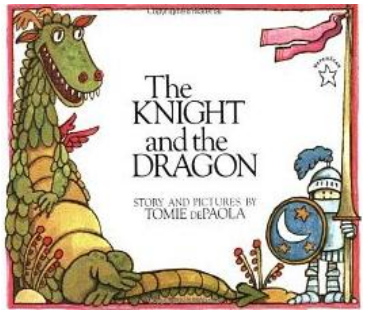
Directed by \ Initiated by	child	adult
child	 Free Play	Guided Play
adult	 Co-opted Play	Direct Instruction 

Jacob Habgood

Guided play has been studied in a number of learning areas yielding both content knowledge and the 4Cs

Building a foundation in **language and literacy**

Several studies point to the increase in vocabulary when low-income children read and then play to reinforce the words they learned.



Free play	No focus, dialogue; No meaning-making; child initiated and directed
Directed play	Targeted focus with more closed questions; adult initiated and directed, meaning-making
Guided play	Targeted focus with more open ended questions; adult initiated, child directed, meaning-making

From Dickinson, Golinkoff & Hirsh-Pasek, in progress; see also Han Vulkelich and Buell (2011)

IMPORTANTLY GUIDED, NOT FREE PLAY > **COMMUNICATION** SKILLS IN THESE TASKS

Guided play in a game also increases vocabulary

How to Play: Teacher says, "First, spin the spinner and move to the first square that is the same color. Then, I am going to read you the word that you landed on and a question about that word. Next, your neighbor gets a turn. Let's play Snakes & Ladders!"

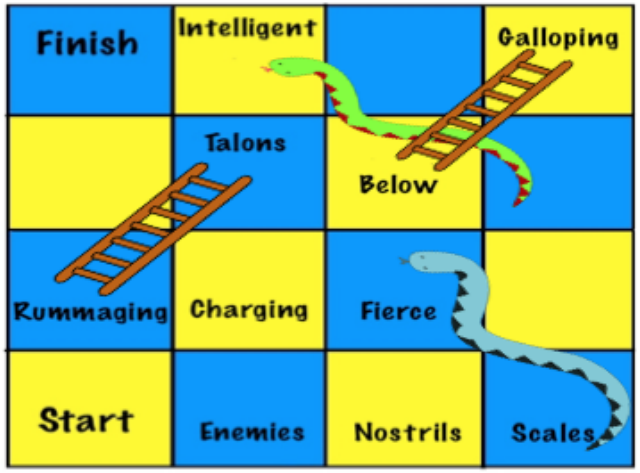
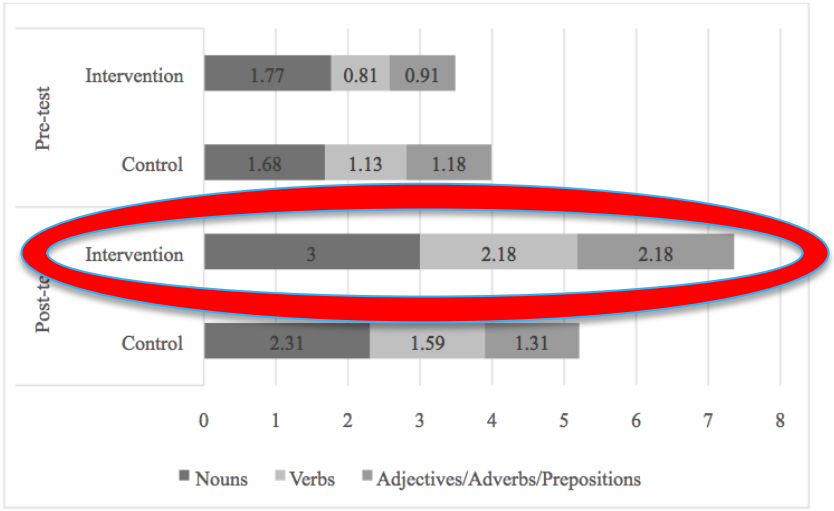


Figure B3. Sample *Snakes & Ladders* game board

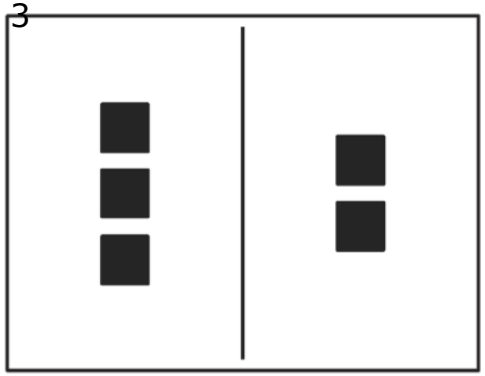


Hassinger-Das, Ridge, Golinkoff & Hirsh-Pasek, in progress

Building a foundation in math and STEM

At Home

Parents who use more number words with 14-30 mo. olds have children who are better at number at age 3

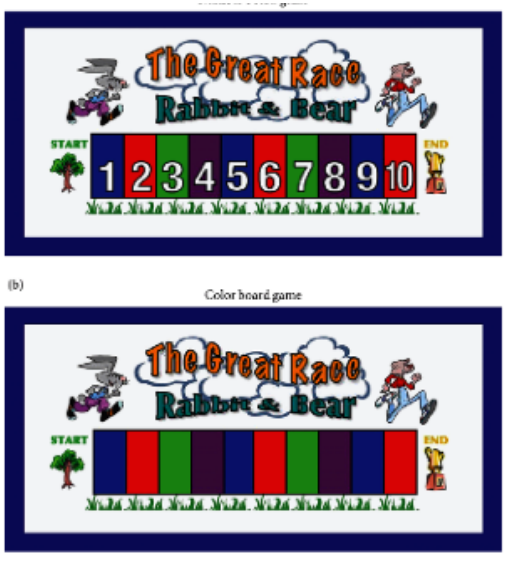


"Point to three"

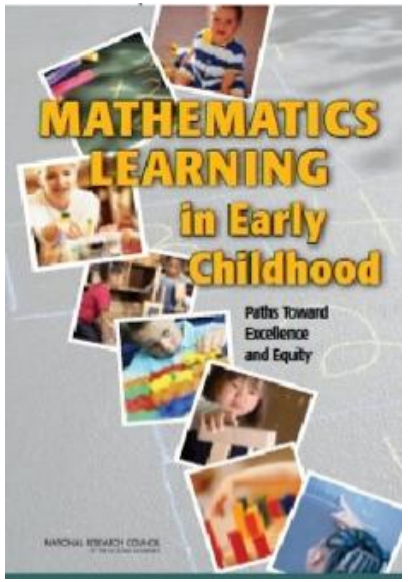
From Levine, Surivakham, Rowe, Huttenlocher & Gunderson, 2010

At School

Children who are better at a game using line estimation have better math skills



From Siegler and Ramani, 2008



Critical thinking and problem solving

Building a foundation in spatial skills (STEM)

At Home

- Parental talk about spatial knowledge is stronger in block play and puzzle play.
  - Ferrara, Hirsh-Pasek, Newcombe & Golinkoff, 2012; Levine, Ratliff, Huttenlocher & Cannon, 2011)

At School

- The ability to copy spatial designs with blocks is related to later spatial and math ability.

  Verdine, Golinkoff, Hirsh-Pasek, Newcombe, Filipowicz & Chang, 2014

SILC

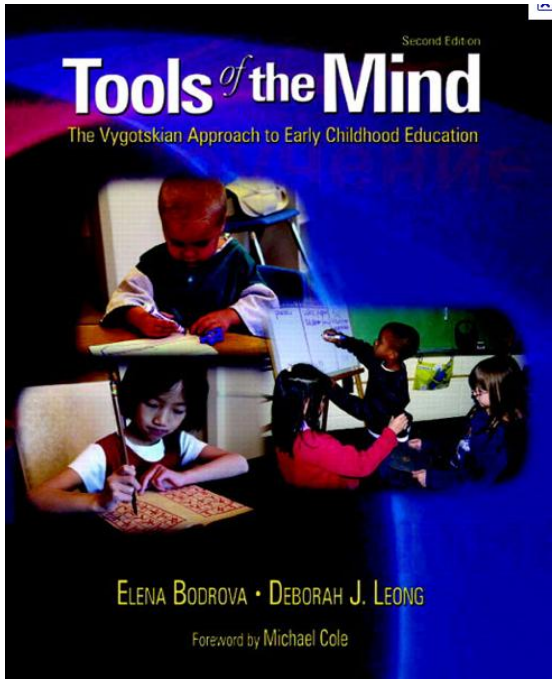
More problem solving and critical thinking

NIH National Institutes of Health
Turning Discovery Into Health

NSF National Science Foundation
WHERE DISCOVERIES BEGIN

Partnership for 21st Century Skills

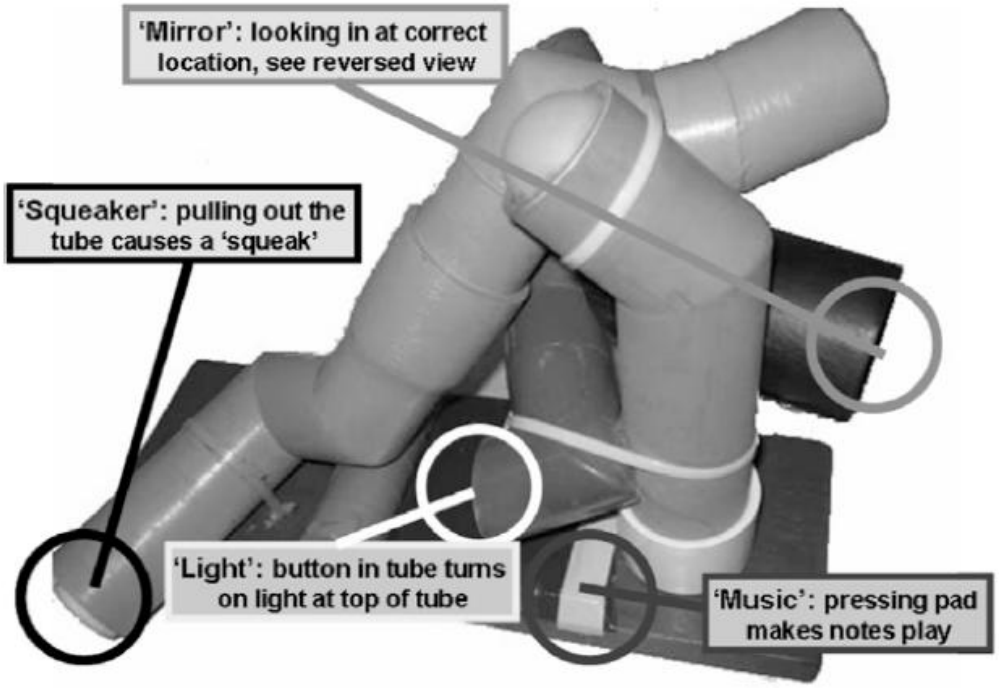
Building a foundation in social emotional control for children in preschool



Important skills for later reading, math and collaboration!

(Bodrova & Leong, 2006, Blair & Raver, 2014 but see Thal, 2012 ,Lillard et al., 2012)

And in critical thinking and creativity



Bonowitz, Shafto, Gweon,Goodman, Spelke & Schultz (2010)

Summary

- High quality education begins even before preschool
- Achieving high quality demands that we move from ***filling a gap*** to ***building a foundation*** at *both* home and school
- Playful learning (when targeted through guided play) can become a key pedagogy for learning the basics (3Rs)
- Playful learning also offers support for learning to learn through collaboration, communication, critical thinking and creativity (4Cs)
- **In the reviewed research, guided play trumped direct instruction (filling the gap) and free play without targeted learning goals. It offers a new direction for helping all children become ready to learn.**

- Skills learned in the sandbox

- Are those that the nations business leaders want to see in the boardroom.

And we know how to put them into our high quality schools today!

N.Y. / REGION | BIG CITY 14 COMMENTS

As Prekindergarten Expands in New York City, Guiding Guided Play

By GINIA BELLAFANTE SEPT. 4, 2014

Dr. John Holland

National Board Certified

Head Start Teacher

A Transformed Learning Ecology

- In the past 20 years the learning ecology of the classroom has been permanently transformed.

- This transformation necessitates a new approach to teaching and learning.

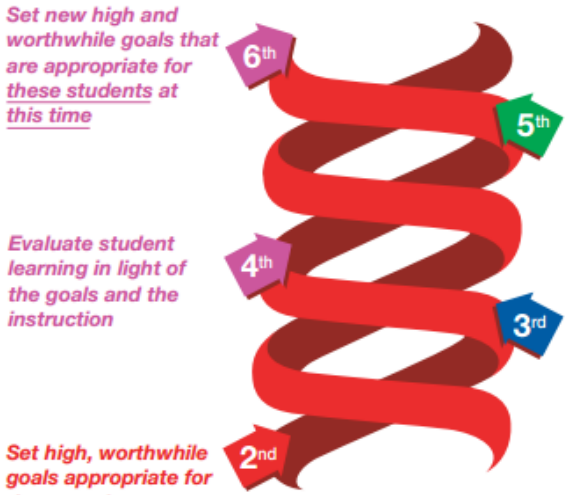
- Communication
- Collaboration
- Critical Thinking
- Creative Problem Solving

Brain research and learning

- Within the transformed learning ecology accomplished teaching is child centered, brain-based, and relational.

- There is no development without relationships. - Jack Shonkoff (Mind in the Making)

The Architecture of Accomplished Teaching:
What is underneath the surface?



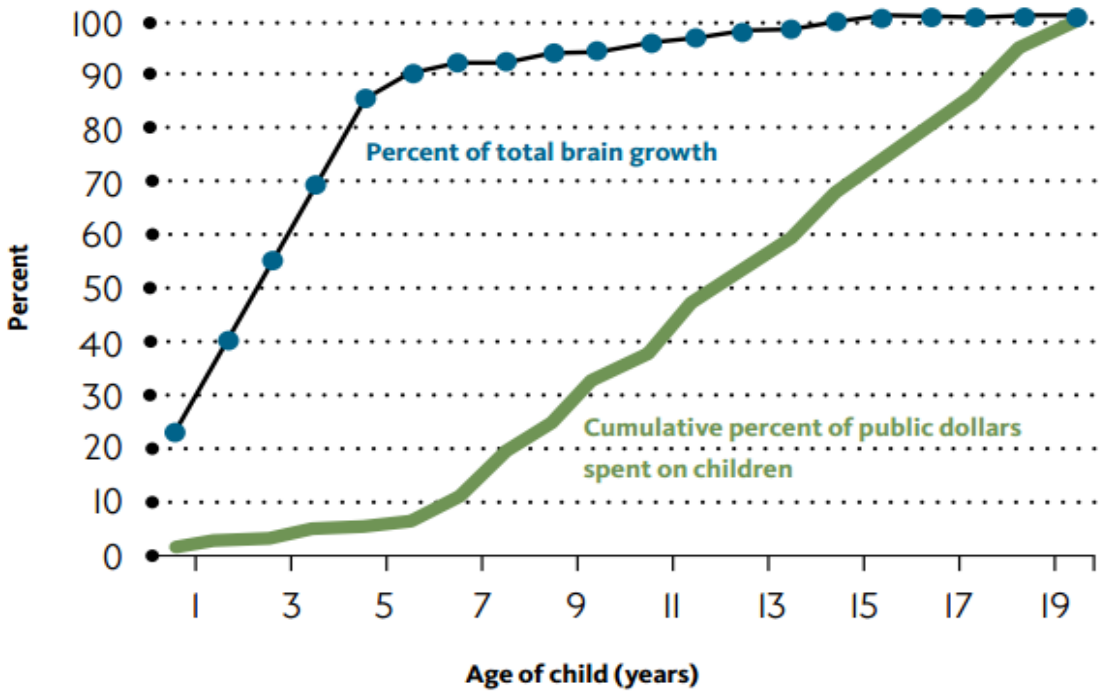
Five Core Propositions

- Teachers are committed to students and their learning
- Teachers know the subjects they teach and how to teach those subjects to students
- Teachers are responsible for managing and monitoring student learning
- Teachers think systematically about their practice and learn from experience
- Teachers are members of learning communities

Why is this important to congress?

- Leadership establishes the climate for a healthy learning ecology.
- Accountability drives instruction
- Funding drives capacity

Brain Growth Compared to Public Expenditures on Young Children



SOURCES: Public expenditures: RAND analysis of Table 1 in R. Haveman and B. Wolfe, "The Determinants of Children's Attainments: A Review of Methods and Findings," Journal of Economic Literature, Vol. 33, December 1995. Brain growth: Figure 2-0 in Purves, Body and Brain, *Harvard University Press 1998, adopted from \ . Thompson,* On Growth and Form.

From Missouri Business Leaders Summit on Early Childhood Investment:
http://www.readynation.org/uploads/20091027_EE0941letterhead.pdf

Cheri Sterman

Director of Education and Consumer Relationships, Crayola

The Power of Play

Play is Young Children's Work

Think Back to Your Childhood…

Creative Self-Expression

what you learned from play

Problem Solving
Perseverance

Social Interaction & Consequences

Play Build 21st Century Readiness

Creativity

Critical Thinking

PARTNERSHIP FOR
21ST CENTURY SKILLS

4Cs
Fundamental to Learning
Essence of Play

Collaboration

Communication

PARTNERSHIP FOR
21ST CENTURY SKILLS

What is Play?

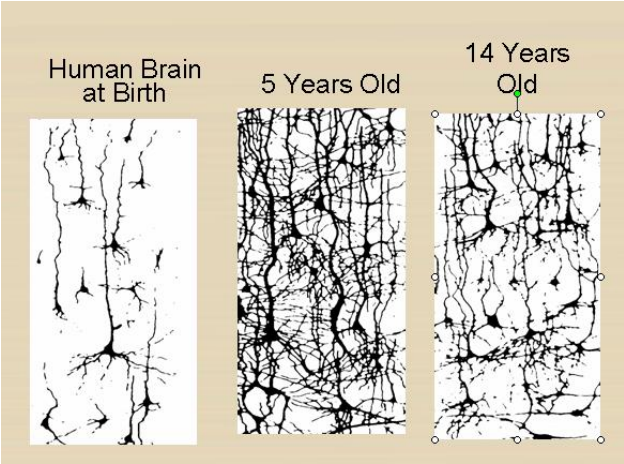
- Child directed. Highly motivating. Relevant & engaging.
- Enables child to brings together existing knowledge with new understandings
- Play provides complex choices and enables child to solve problems in innovative ways.

Wonder. Curiosity. Capability.

Brain Research: Play is How Kids Learn

Neuroscience—scans show increases brain activity during play vs. more passive forms of instruction.

1. Importance of physical, tactile experiences
2. Learning rooted in curiosity & exploration *(not sitting & listening to answers others have already figured out)*
3. Critical Period = First 5 Years



Play = How Kids Learn

"Play is essential for children's learning. Children work hard at play—yet they don't consider it work, since they chose it.
They invent scenes and stories, solve problems, and negotiate through social challenges. They play with purpose, diligence and delight.
The motivation to play comes from within so they learn the powerful lessons of being self-directed and pursing their original ideas."

Crisis in Kindergarten—Why Children Need to Play in School —Alliance for Childhood—Edward Miller, Joan Almon

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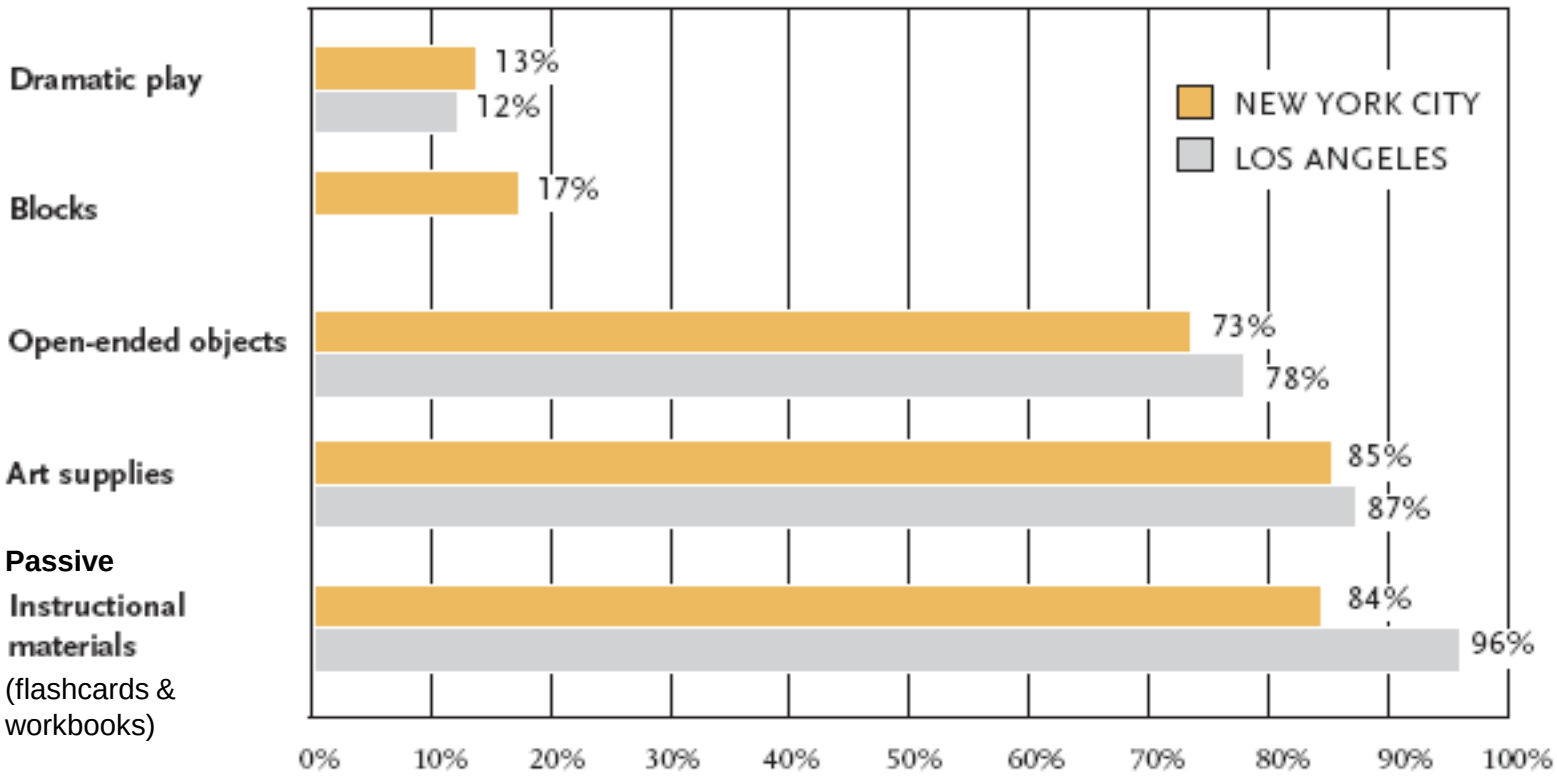
Frightening Decline in Early Childhood Classrooms

CHART B: **Classroom Materials in Two Cities** Enough materials for most or all children?



Crisis in Kindergarten—Why Children Need to Play in School —Alliance for Childhood—Edward Miller, Joan Almon

Heart of Early Childhood

If problem-solving, communication, collaboration, innovation, and creative thinking are to remain part of our legacy as a species, then play must be restored to its rightful place at the heart of childhood.

Crisis in Kindergarten—Why Children Need to Play in School —Alliance for Childhood—Edward Miller, Joan Almon

Learning = exploring possibilities
not memorizing others' answers


PUPPET Show
COMMU

Questions and Answers

Kathleen Kremer, Ph.D.
Head of Preschool Research,
Fisher-Price

Call to Action

Helen Soulé, Ph.D.
Executive Director, P21

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