Guided Play in Early Education: Becoming Brilliant
Kathy Hirsh-Pasek, Ph. D.

What do you hear?

Repeat after me

Now change the lens

Collaboration (Following others)

Repeat after me
What's going on here?
From America to Zanzibar exhibit

Change the lens!
Communication
Collaboration
Perspective taking
Context learning to learn
Note: Meaning

And what could we possibly make of this artwork?

Marly 24 mo.
D’Hani 34 mo.
And what could we possibly make of this artwork?

Marly 24 mo.

D’Hani 34 mo.

Intent

Hand control

Content:

Spatial

sense and pattern

alignment

It is time to change the lens…

• On the way we think about learning and education – in and out of school

• On the way that parents and policy makers think about the social and academic value of an integrated education fostered through play and active learning!

Some interesting facts

• We are entering a new era, a knowledge age, in which information is doubling every 2.5 years.

• We are leaving the information age, where getting the “factoids” was enough…

• Integrating information and innovation is key.
The past few decades have belonged to a certain kind of person with a certain kind of mind—computer programmers who could crank code, lawyers who could craft contracts, MBAs who could crunch numbers.

But the keys to the kingdom are changing hands. The future belongs to a very different kind of person with a very different kind of mind—creators and empathizers, pattern recognizers, and meaning makers. These people—artists, inventors, designers, storytellers, caregivers, consolers, big picture thinkers—will now reap society’s richest rewards.

Author Daniel Pink writes...

Business leaders tell us...

America’s institutions—even our economy and our mind set—are designed for the individualism of an industrial economy, not a Lego world (p. 38, Edersheim).

In Lego world, successful businesses function by having content areas and specializations that can be rearranged to help build new structures on a moment’s notice.

Are we preparing children for the workplace of tomorrow?

NO—our current model of education (and parenting) is founded on the idea that mastery of content is the key to success in life, but what counts as success has undergone a revolution in a Google and Wiki world where facts are at our fingertips.

The Traditional Way
Preparing Children in Just:
Reading
Writing
Math

The 21st Century Way
Supporting Children to Include but Go Beyond Content to Be:
Happy, healthy, thinking, caring, and social so they become collaborative, creative, competent, and responsible citizens tomorrow
And this traditional approach to achieving success

- Created test driven high stress educational systems
- Even led to what some in the military call a national security risk because students know narrow facts but cannot think critically or strategically, let alone navigate socially.

Indeed, the famous Finnish scientist and author, Pasi Sahlberg reminds us our laser focus on a narrow view of success has NOT produced results. Note the US 2013 PISA scores from students who spent their entire academic career under NCLB

In our new book: *Becoming Brilliant: What science tells us about raising successful children*

We ask parents, educators and policy makers to change the lens on how we define success for children growing up in the 21st Century.
Achieving that success will require nurturing a breadth of skills that we call The 6Cs – skills that take us from the sandbox to the boardroom – skills grounded in the science of learning.

The 6 Cs

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<th>Collaboration</th>
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And in early education—in and out of school—children can master these skills in part, through...

Play and playful learning has gone out of fashion but in this talk, I hope to demonstrate why discovery-based playful learning—active learning—will groom just the breadth of skills we want to instill in young children.
A talk in 5 parts:

- The current state of play in early education
- Defining playful learning
- Playful learning and the 6Cs
  - Social skills
  - Cognitive skills
- An integrative model
- The 6Cs at home, school and in the community

Whatever happened to play?

In 1981, a typical school-age child in the United States had 40% of her time open for play. By 1997, the time for play had shrunk to 25%.

What percentage is it down to now??
That play -- in all its forms, but especially open-ended child-initiated play, is now a minor activity in most kindergartens, if not completely eliminated.

One report from the Alliance for Childhood Survey in New York and LA (April 2009) showed...

• 25% of the teachers in the Los Angeles sample reported having no time whatsoever in their classrooms for children’s free play.
• 61% of the teachers in the New York sample reported having 30 minutes or less of daily choice time. (In Los Angeles, the figure was 81%.)
• 79% of the New York teachers reported spending time every day in testing or test preparation. In Los Angeles, it was 82%.

Direct observation of 142 NY classrooms and 112 LA classrooms revealed that:

And several recent pieces suggest that Kindergarten has become the new first grade

• Bassok et al., (2016) find that!
  – 80% of teachers say K-garten children should be reading – up 50% from 1998
  – Time for arts? Down 16%
  – Testing? Up. 29% test children at least once a month
This narrow view of success even pervades our everyday activities:

Check out how modern day kids can now learn during potty training!

And our new favorite.....

We are wearing out our youngest children by Engaging in "drill-and-kill" and Testing for "factoids" in our assessments rather than real learning

These issues and more prompted reports from the American Academy of Pediatricians in October 2006 and again in 2012! They wrote...

Play is essential to the social, emotional, cognitive, and physical well-being of children beginning in early childhood. It is a natural tool for children to develop resiliency as they learn to cooperate, overcome challenges, and negotiate with others. Play also allows children to be creative. It provides time for parents to be fully engaged with their children, to bond with their children, and to see the world from the perspective of their child.

Regina M. Milteer et al., 2012
between the desire to enrich children’s lives and the need to foster play as a foundation for learning skills like collaboration, communication, content, critical thinking, and creative innovation and confidence.

The challenge is to strike a balance…

Where content is 1 – but only 1 of the 6Cs

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Defining play

FREE PLAY

whether with objects, fantasy and make believe, or physical, is 1) fun, 2) active 3) has no extrinsic goals, 4) interactive, 5) meaningful, 6) often, though not always, socially interactive, 7) can contain a certain element of make-believe

(Hirsch-Pasek et al., 2003; Garvey, 1977; Hirsch-Pasek & 2003; Christie & Johnsen, 1983; LEGO, 2017)
And Guided play

A planned play environment, enriched with objects/toys that provide experiential learning opportunities, infused with curricular content (Berger, 2008), Think Museums or Montessori classrooms.

Adults enhancing children’s exploration and learning through:
- co-playing with children
- asking open-ended questions
- suggesting ways to explore materials

Fisher et al., 2011; Hirsh-Pasek et al, 2006; Hirsh-Pasek & Golinkoff, in press; Weisberg, Hirsh & Pasek & Golinkoff, 2015; Weisberg et al., 2014

We have conceptualized play this way...

<table>
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<tr>
<th>Initiated by</th>
<th>adult</th>
<th>child</th>
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<tr>
<td>Directed by</td>
<td>adult</td>
<td>adult</td>
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Free Play  Guided Play
Co-opted Play Direct Instruction

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A tale of two Spocks – on Collaboration and social skills

Dr. Benjamin Spock got it all along: social and emotional regulation matters – a lot

Mr. Spock did not

Collaboration – teamwork, getting along with others, social bonds, include… social-emotional-regulation

- Impulse and emotion control
- Self-guidance of thought and behavior (private speech)
- Planning
- Self-reliance
- Socially responsible behavior

Bronson, 2001; Kopp, 1991; Rothbart & Bates, 2006; Galiński, 2005

And measures of self-regulation predict?

- persistence (Grit, Confidence)
- task mastery
- academic achievement (Communication; Content)
- social Collaboration
- moral maturity (concern about wrongdoing, willingness to apologize)
- sharing and helpfulness

Eisenberg, 2010; Harris et al., 2007; Kopp, 1991; Rothbart & Bates, 2006; Posner & Rothbart, 2007; Zhou, Lengua, & Wong, 2005; Berk & Meyers, 2014; and many others.
The shocking finding??
Children with social emotional control do better in school...

Mischel et al., (1989) for a review

Guess what happened over time!!!!!!
Those who waited scored over 200 points better on their SATs?

Eigsti, et al., 2006

Further, some research suggests that we can teach emotional control through guided play

(Bodrova & Leong, 2006; Blair & Raver, 2015; but see Thal, 2012; Lillard et al., 2012)

Megan McClelland's classroom games for social regulation

- Conducting an Orchestra
  Every child use a musical instrument. The circle leader used a drum stick as a conducting baton. When the conductor waved the baton, children played their instruments. When the conductor put the baton down, children stopped.

- Drum Beats
  Teachers used drum beats to represent different actions that children can do while sitting (e.g., clapping or stomping) or while moving around the room (e.g., walking or dancing). For example, children walked quickly to fast drumming, slowly to slow drumming, and froze when the drumming stopped.
• Collaboration is a foundation for skills in communication, content, creative innovation, confidence– and you can get it all through guided play!

Bottom Line?

A talk in 5 parts:

• The current state of play in early education
• Defining playful learning
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  • Cognitive skills
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Focus on reading...

Telling stories
Word play
(what rhymes with "hat"?)
Singing songs
Dialogical reading
Reading product labels
Engaging conversations
Dramatic play (Roskos & Christie, 2013)

A recent paper by Lillard et al., 2012 suggests language and reading outcomes are the strongest examples of where even free play encourages development
And, focused game play helped readers learn Communication in the form of vocabulary

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

What about Content and Communication in STEM??

• Finding patterns
• Dividing candy and sharing  
  – Squire & Bryant, 2002
• Sorting trail mix
• “I spy”
• Noticing more and less  
  (“She got more ice cream”)  
• Playing with blocks, trains and puzzles
• Playing board games  
  – Ramani & Siegler, 2008; Ramani, Siegler & Hitti, 2012

We actually studied Block Play to ask if it might build better spatial language and math outcomes

Our questions:

Do we talk more about space when we play with blocks?

Do we talk more about space in certain play situations over others? (using words like above, on top of, beside…)
Turns out that spatial talk relates to

- to later spatial ability
- and later math ability!


2-D Test of Spatial Ability (TOSA)

3-D Test of Spatial Ability (TOSA)

Children who did better at age 3 on these tasks

- Had better space and math scores at the start of formal schooling
- So did kids who heard more math talk....

Note that in these studies and related studies (Fisher et al., 2014) free play and direct instruction were not as predictive of later success as was guided play! See also Hirsh-Pasek et al., (2015) for a review of why.

And playful learning supports science learning re understanding causes

- 3-year-olds learned as well in free play (active learning) as they did in experimenter-generated play when discovering the rules that activated a toy (shape vs color).
- 19-month-olds required guided play to make the same causal inferences

Sim & Xu, 2014, Sim & Xu, 2015
Finally on the “C” of Critical thinking and hypothesis testing

Lucas et al find that….

And Gweon, Goodman, Spelke & Schultz (2010) find that direct instruction (while effective), “limits spontaneous exploration and discovery” relative to play!

Far from the “drill and kill” methods justifiably admonished by child development experts, successful evidence-based, skill-focused curricula embed learning in playful preschool activities, including story-book reading, games, art, and discovery activities that are conducted in both small and large group contexts and grounded in a sound developmental framework. In contrast to the whole-child approaches, these curricula provide teachers with lesson plans to follow in which playful activities are strategically organized to present children with learning opportunities that are focused, sequential and cumulative. p. 39

Importantly, digital toys do not always afford the same advantages

Even play that is fun, but not well guided will not yield the same results – witness e-toys…..
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Of course, though each of the skills can be groomed through play, these skills do not act solo – but build on one another
<table>
<thead>
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<th>Content</th>
<th>Critical Thinking</th>
<th>Creative Innovation</th>
<th>Confidence</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>Building it</td>
<td>Talk a joint story</td>
<td>Expertise</td>
<td>Evidence</td>
<td>Vision</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Back and forth</td>
<td>Dialogue</td>
<td>Making connections</td>
<td>Opinions</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Side by side</td>
<td>Show and tell</td>
<td>Wide breadth/ Shallow understanding</td>
<td>Truths other</td>
<td>Where do I stand?</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>On my own</td>
<td>Raw emotion</td>
<td>Early learning/ Situation specific</td>
<td>Seeing is believing</td>
<td>On my own</td>
<td>1</td>
</tr>
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Further, the model is dynamic in that we continue to revisit the 6Cs at higher and higher levels over development to create more than a linear model – but a spiral of learning.

We constantly revisit each of the skills as we gain new integrative experiences.
Importantly each of these skill areas and levels is measurable

Collaboration
Reading the Mind in the Eyes Test
The Delay of Gratification tests,
Observation (CLASS)

Communication
QUILS , PPVT, NIH Toolbox
Referential Communication,
Writing, Observation (CLASS)

Critical Thinking
Deanna Kuhn’s Levels

We can change outcomes on the 6Cs with positive experiences

And the 6Cs allow us to re-imagine what education could be – giving us a kind of report card for the 21st century

Using this grid, we can ask

- Where do we stand?
- Where do our children stand?
- Where does our school stand?
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The question for each of us then... is how we create environments to nurture each of the 6C's in and out of school where children spend 80% of their waking time?

One way we are using the 6Cs to change communities is through:
In the community, we are also creating playful environments where families can use the 6Cs to strengthen skills in everyday “trapped” spaces. In low income neighborhoods, we got a 33% increase in parent/child language when the signs were up.

And we are creating Parkopoly: The Life Size Board Game designed to develop STEM skills in math and reasoning.
Parkopoly: Note dice that encourage the learning of fractions

What changes could we make in our communities or classrooms to augment learning? Use the grid...

An arts mural project?

Putting on a show?

A mini maker’s fair to solve a problem? (how to make the door to the outside open more easily?)

• How might each of these activities help grow the 6Cs? How might teachers use them to help parents change the lens?

• What are you already doing in playful learning that can feed the 6Cs

• How can you make the link from activity to outcome more obvious?

The 6C’s framework helps us think differently as we prepare children for the challenges of today and the workforce of tomorrow.
Evidence from the science of learning supports a wider discussion of breadth in education. The 6Cs make visible the connections from the sandbox to the boardroom. And it helps us achieve this education in and out of school – through playful learning.

In Becoming Brilliant, we suggest that a new definition should prevail:

Society thrives when we craft environments, in and out of school, that support happy, healthy, thinking and social children who become collaborative, creative, competent and responsible citizens tomorrow.

It is time......

To change the lens on the way we think about success and about learning!
Thanks to our funders

- My long term collaborator Dr. Roberta Michnick Golinkoff

The most wonderful postdocs, graduate students and undergrads.

And to the families who make the research we do possible!

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