



# What do you hear?



B Center for Universal Education at BROOKINGS SHILLS FOR A CHANGING WORLD 98/2017



### Now change the lens



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## What's going on here?

From America to Zanzibar exhibit



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N6/2017



## Change the lens!



#### And what could we possibly make of this artwork?



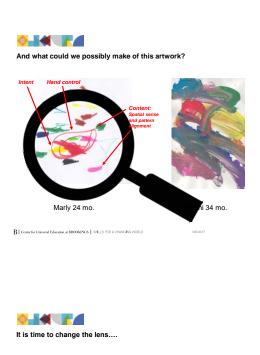
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- On the way we think about learning and education – in and out of school
- On the way that parents and policy makers think about the social and academic value of an integrated education fostered through play and active learning!

Some interesting facts

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- 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.

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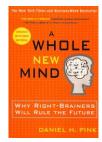


#### Author Daniel Pink writes...

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, stoytellers, caregivers, consolers, big picture thinkers - will now reap society's richest rewards...



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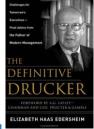




#### Business leaders tell us...

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.





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#### 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

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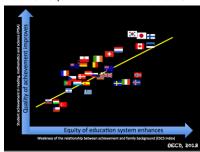


And this traditional approach to achieving success

- · 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.

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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



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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 21  $^{\rm st}$  Century

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Achieving that success will requir skills that take us from the sandbo of learning.			,		
The 6 C's					
Collaboration	Communication	Content			
Critical Thinking	Creative Innovation	Confidence			
7			•		
3   Center for Universal Education at BROOKINGS   SHILLS FOR A C	HANGING WORLD	9/6/2017 16	6		
			•	-	
And in early education- in and	l out of school-child	tren can master these skills			
in part, through					
		1)			
7 1 1 6 1 1	بالنظ ا				
3   Center for Universal Education at BROOKINGS   SELLS FOR A C	HANGING WORLD	9/6/2017 17	7		
Play and playful learni	na has aone oi	ıt of fashion hut in			
this talk, I hope to dem	onstrate why d	liscovery-based			
playful learning – activ breadth of skills we wa	e learning wil int to instill in y	oung children			
			,		
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#### 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

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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??

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



 That play -- in all its forms, but especially open-ended childinitiated play, is now a minor activity in most kindergartens, if not completely eliminated

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

- 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%.



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

 Bassok et al., (2016) find that!

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- 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



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# 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, 2009; Hirsh-Pasek & Golinkoff, in press; Weisberg, Hirsh & Pasek & Golinkoff, 2015; Weisberg et al., 2016

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We have conceptualized play this way...



Initiated by child

Free Play

Guided Play

Free Play

Co-opted Play

Direct Instruction

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A tale of two Spocks – on Collaboration and social skills	
A tale of two opocks – oil collaboration and social skills	
Dr. Benjamin Spock got it all along: social and emotional regulation matters a lot	
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Collaboration – teamwork, getting along with others, social bonds, include social-emotional-regulation	
<ul> <li>Impulse and emotion control</li> <li>Self-guidance of thought and behavior (private speech)</li> </ul>	
Planning Self-reliance	
Socially responsible behavior	
Bronson, 2001; Kopp, 1991; Rothbart & Bates, 2006; Galinsky, 2005	
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And measures of self-regulation predict?	
persistence (Grit, Confidence)     task mastery     academic achievement (Communication; Content)	
<ul> <li>social Collaboration</li> <li>moral maturity (concern about wrongdoing, willingness to apologize)</li> <li>sharing and helpfulness</li> </ul>	

Eisenberg, 2010; Harris et al., 2007; Kochanska & Asksan, 2006; Posner & Rothbart, 2007; Zhou, Lengua, & Wang, 2009; Berk & Meyers, 2014; and many others.

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The shocking finding??
Children with social emotional control do better in school...





Mischel et.al., (1989) for a review

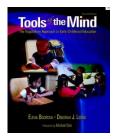
Guess what happened over time!!!!!
Those who waited scored over 200 points better on their SATs?

Eigsti, et al., 2006

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

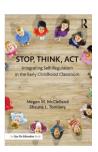


(Bodrova & Leong, 2006, Blair & Raver, 2015; but see Thal, 2012, Lillard et al., 2012)

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Megan McClelland's classroom games for social regulation



Conducting an Orchestra 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 leachers 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

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Bottom Line?	
<ul> <li>Collaboration is a foundation for skills in communication, content, creative innovation, confidence— and you can get it all through guided play!</li> </ul>	
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A talk in 5 parts:  • The current state of play in early education	
Playful learning and the 6Cs Social skills Cognitive skills An integrative model The 6Cs at home, school and in the community	
B   Control to Universal Education at BIDOUNINGS   SUBLES FOR A CHANGING MOPILO 8002217 41	
Focus on reading	
Telling stories Word play (what rhymes with "hat"?) Singing songs Dialogical reading Reading product labels Engaging conversations Dramatic play (Roakoa & Christile, 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	
Has to Play Trade says, "Tirst, upin the spinsor and more to the first spans that is the same entir." Then, it apprings may have sever that you handle on and a question about the word.  Nax, your resighting may not. Lar Eye's prisant a Labour."  Finish.  Intelligence  Outpring  Outpring	
Start Emmiss Neutrils Emales   *Neutrils ** **Application Addition pass based **Application Addition	
Hassinger-Das, Ridge, Golinkoff & Hirsh-Pasek, in press	
B   Conner for Universal Education at BIRODANNS   SHELLS COR A CHANGER ON WORLD SECTION SEC	
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 & Hittl 2012  Brittle 2012	
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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!



3-D Test of Spatial Ability (TOSA)



Verdine, B., Golinkoff, R., Hirsh-Pasek, K, Newcombe, N., Filipowicz, A. & Chang, A. (2014)

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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....

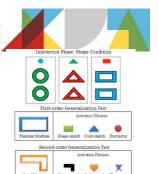


Note that in these studies and related studies (Fisher et al., 2014) free play and direct instruction were not as predictive of later success as was guided play! See also Hirsh-Pasek et al., (2015) for a review of why.

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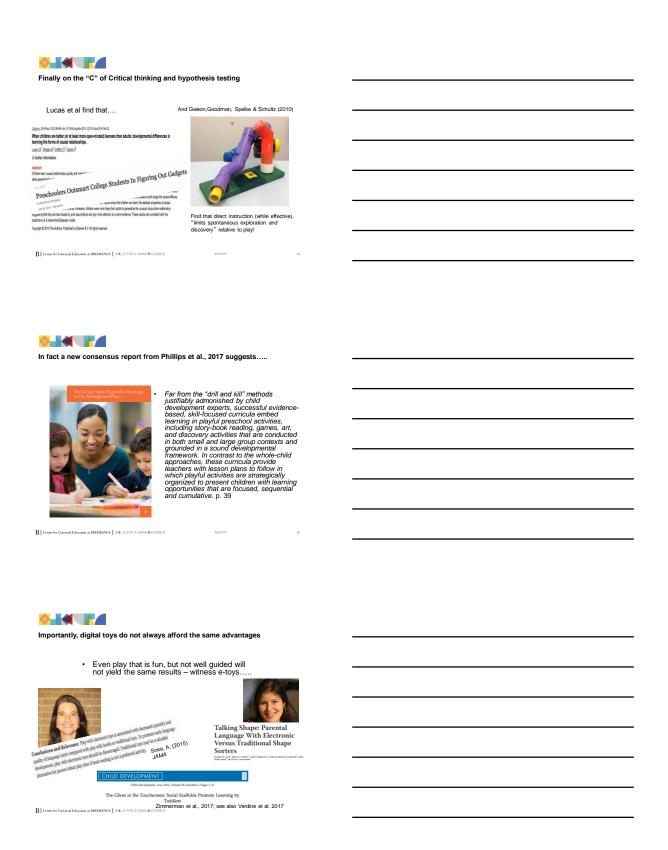
# And playful learning supports science learning re understanding causes

- 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

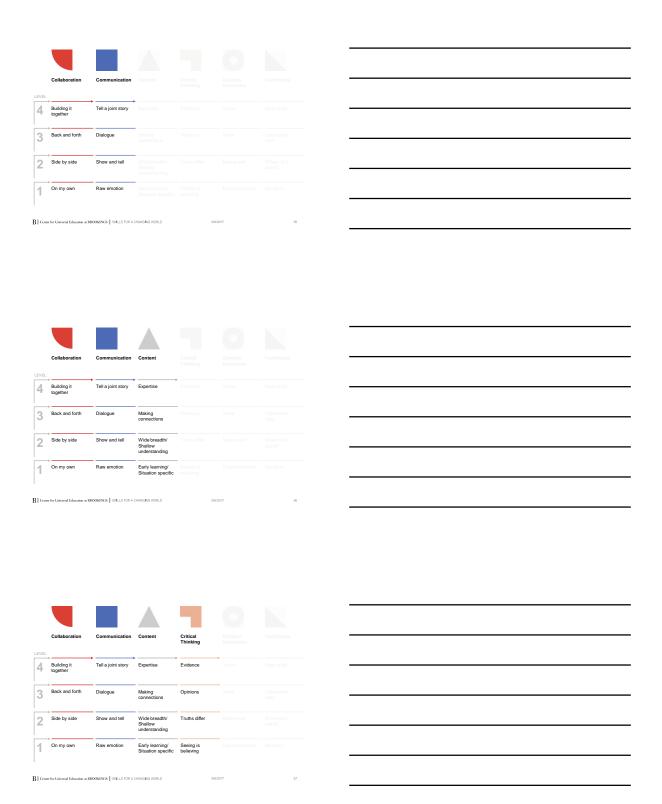


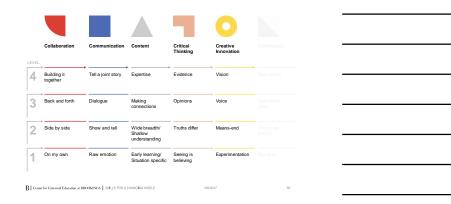
Sim & Xu, 2014, Sim & Xu,

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A talk in 5 n						
A talk in 5 p	oarts:					
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ASS.		Defining playf	ul learning			
	•P	Playful learning	and the 6Cs			
		•Cognitive s	kills			
		An integrative				
	• T	The 6Cs at ho	me, school	and in the co	mmunity	
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Of course, though	a cach of the	a skille oon b	o aroomed t	brough play	those skills	
do not act solo - l	but build on	one another	e groomea t	ili ougii piay,	triese skills	
Dia						
B   Center for Universal Education at BRO	JOHNGS   SHILLS FOR A	CHANGING WURLD	96	9/2017	53	
Collaboration						
4 Building it together						
LEVEL						
3 Back and forth						
2 Side by side						
On my own						
						-





	Collaboration	Communication	Content	Critical Thinking	Creative Innovation	Confidence
EL		<del>-</del>			<b>-</b>	
	Building it together	Tell a joint story	Expertise	Evidence	Vision	Dare to fail
)	Back and forth	Dialogue	Making connections	Opinions	Voice	Calculated risks
)	Side by side	Show and tell	Wide breadth/ Shallow understanding	Truths differ	Means-end	Where do I stand?
_	On my own	Raw emotion	Early learning/ Situation specific	Seeing is believing	Experimentation	Barrel on

#### 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.

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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	
Dealild Rulli S Levels	
$B \mid \text{Conner for Universal Enhances on BHOOMINGS} \mid \text{SPILLS FOR A CHANGE OF MORED} \right. \\ + 0.00000000000000000000000000000000$	
Each of these skills is malleable!	
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<b>———</b>	
We can change outcomes on the 6Cs with positive experiences	
$B \mid \text{Center for Universal Education at BEOONINGS} \mid \text{SMLLS FOR A D-HANGING WORLD}$ 98/2917	
And the 6Cs allow us to re-imagine what education could be – giving us a kind of report card for the 21st century	
Cultaboration Cummunication Content Critical Creative Confidence	
Communication Content Charles Constant	
Where do our children	
Where does our school	
stand?	
\ \ \ \	
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#### A talk in 5 parts:



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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?





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One way we are using the 6Cs to change communities is through:







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Parkopoly: Note dice that encourage the learning of fractions	
	-
314	-
	-
B   Center for Universal Education at BBOOMANGS   SHULE FOR A CHANGED WORLD 9802017	70
What changes could we make in in our communities or classrooms t	o
augment learning? Use the grid	
Celtaboration Communication Content Critical Cristal Description Confidence C	
4 Building 1 Tell a joint story Expertise Evidence Valor Dark to fell Putting on a	show?
3 Book and forth Datague Making Opinions Vices Calculated A mini maker solve a problem	
2 Side by side Show and led Wife breath? Truths differ Means-end When 01 to make the door to 1 stand? open more easily??)	the outside
On my own Raw emotion Early learning Seeing is Experimentation Service on Studies specific believing	
<ul> <li>How might each of these activities help grow the 6Cs? How might teach them to help parents change the lens?</li> </ul>	ers use ——————————————————————————————————
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?  B   Center for Universal Education at BROOKINGS   SPILLS FOR A CHANGERS WORLD.	п
The 6C's framework helps us think differently as we prepare children for the	
challenges of today and the workforce of tomorrow.	

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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.	
$ B \left[ \text{ Conter for Universal Education at BIOCHANNOS} \right] \text{ SMLLS FOR A CHANGING WORLD}                                    $	
RE-imagining global education requires re-imagining our definition of success!	
In Becoming Brilliant, we suggest that a new BECOMING	
definition should prevail:  BRILLIANT	
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.	
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It is time	
To change the lens on the way we think about success and about learning!	
BECOMING BRILLIANT BRILLIA	
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