


Why We Need Playful Learning More than Ever: Life Beyond Covid

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ready a five™

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2020: It's been a tough year!

- By last May, 95% of teachers were doing on-line learning
- Three quarters of the teachers say students are less engaged
- By September, students were already projected to fall behind a 1/3 of a year in reading and 2/3rds of a grade in math

Quality level of remote instruction, % of K-12 students


	Average and above-average remote instruction ¹	Low-quality remote instruction ¹	No instruction
Overall	32	48	20
White	38	52	10
Black	14	45	40
Hispanic	21	49	30
Low income	60	40	

Black, Hispanic, and low-income students are at higher risk of not receiving remote instruction of average or above-average quality ...

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What are young children like when they encounter online instruction?



WHAT TO DO DURING A CLASSROOM ZOOM MEETING ACCORDING TO KIDS

- Start talking about your cat and don't stop.
- Put your eyeball up to the camera, then make silly faces.
- If the teacher is on mute, point that out! Loudly!
- Hold random items up for everyone to appreciate.
- Give a tour of your entire house.
- Don't concern yourself with "staying on topic."
- Got a pet? Show it off!
- Ask the same question at least three times.
- If needed, pick your nose.

We finally found some toilet paper!


diennee Hedger www.hedgerturner.com

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2020: And what happened to preschool enrollment?

- Down 25%
- In-person education decreased even more.
- Sharp decline in parent at-home support for book reading and other learning activities. Why?
- Children—especially from disadvantaged homes - missed a lot: Social, emotional, cognitive, executive function.
- Higher-than-normal rates of mental health problems.



— Some say: Let's outfit them all with tablets and give them apps!
"Unfortunately, most apps parents find under the 'educational' category in app stores have no such evidence of efficacy." -American Academy of Pediatrics

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Are we creating a COVID generation?

- Of continual COVID slump?
- Of social misfits?
- Of children who will never catch up?



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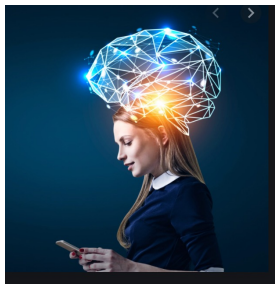
NO! This could be precisely the opportunity we have needed to reimagine education.

- The Science of Learning has discovered much about HOW children learn!
- We also know quite a bit about WHAT children need to learn to thrive in the 21st Century!

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- Today we ask you to ponder what would happen if we taught in the ways that human brains learn!



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As noted in the

Detroit Free Press

Nolan Finley, May 31, 2018

Today's students learn very much the way their parents and grandparents did –sitting in rows in front of a teacher who delivers subject content until a bell rings and they shuffle to the next class. That worked in an economy that needed factory and office workers equipped to do rote jobs.....

But that world no longer exists

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It is time to change the way we



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

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Some interesting facts

- We are entering a new era, a knowledge age, in which information is doubling every 12 months soon to be every 12 hours (Schilling, 2013).
- We are leaving the information age, where getting the “factoids” was enough...
- Integrating information and innovation is key.

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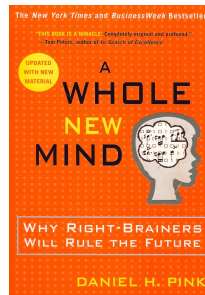


Author Daniel Pink writes...

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



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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 the traditional approach has largely failed us

- 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.
- Pisa scores have not improved



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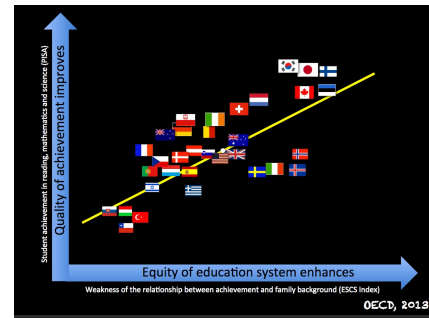
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Finnish scientist, Pasi Sahlberg, reminds us our laser focus on a narrow view of success has NOT produced results. Note the US 2013 PISA scores from students who spent their entire academic career under NCLB. In 2019 looked about the same.



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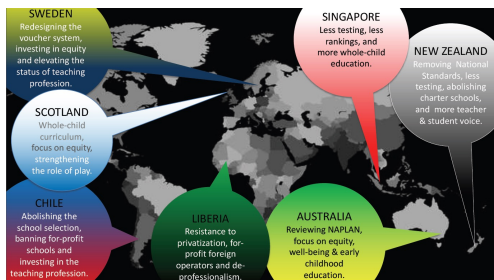
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And in many countries Pasi tells us that high stakes testing is being dropped!



PBSQ NEWS HOUR
Record number of colleges stop requiring the SAT and ACT amid questions of fairness

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In our book: *Becoming Brilliant* and our recent *BIG Ideas Report for Brookings*




We ask parents, educators and policy makers to change the lens on how we define success for children growing up in the 21st Century

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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

The 6 C's

Collaboration 	Communication 	Content 
Critical Thinking 	Creative Innovation 	Confidence 

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We chose this set because


- These skills or competencies are grounded in the science of learning
- They are all malleable
- They are all measurable (some to a greater degree than others)

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Importantly, we present this today as a framework




Using work in early education as our examples because –
as you know- and as the research shows -- the early
years really matter!

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We make the argument that in early education– in and out of school–children master the 6Cs, in part, through...



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If we can prevail, play and playful learning might come back! This talk, hopes to demonstrate **why playful learning – active learning--** will groom just the breadth of skills we want to instill in young children

How play is making a comeback in kindergarten classrooms
A Washington state district made an entire school just for kindergartners where joy and play are the focus.

Play allows all children to develop the suite of skills that make them school ready!



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IIIIIIII.... We can resist the urge to drill and kill in the face of the pandemic and kids having missed so much school!

- Especially after the pandemic, kids need less of this and more of ----->






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Even pediatrician know this! Our recent paper, prior to the pandemic, spearheaded by Dr. Michael Yogman, calls on pediatricians to issue Prescriptions for Play!

Pediatrics
September 2018, VOLUME 142 / ISSUE 3
From the American Academy of Pediatrics
Clinical Report

The Power of Play: A Pediatric Role in Enhancing Development in Young Children
Michael Yogman, Andrew Garner, Jeffrey Hutchinson, Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, COMMITTEE ON PSYCHOSOCIAL ASPECTS OF CHILD AND FAMILY HEALTH, COUNCIL ON COMMUNICATIONS AND MEDIA

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A talk in 3 parts

- Defining play**
 - Free play and guided play
- The advantages of play**
 - Play and coping
 - Play and social learning (executive function)
 - Play and cognition
- How can we foster play for school readiness?**
 - Playing at school
 - Playing in the community

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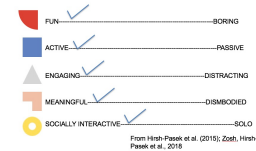


Defining play

Playful Learning: HOW children learn

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

(Hirsh-Pasek et al., 2009; Garvey, 1977; Hirsh-Pasek & Golinkoff, 2003; Christie & Johnsen, 1983; Zosh et al., 2018;



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And Guided Play



Explore

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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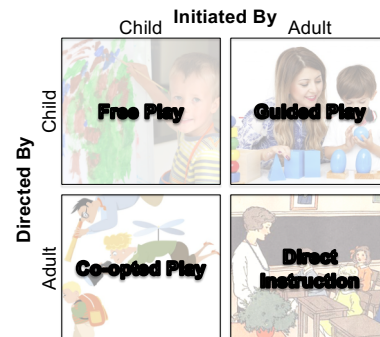
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Playful Learning




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Our recent paper suggests that play might lie on a spectrum....


	Free Play	Guided Play	Games	Direct Instruction
Initiated by:	Child	Adult	Adult	Adult
Directed by:	Child	Child	Child	Adult
Explicit learning goal:	No	Yes	Yes	Yes

Games! Simon Says! Chutes and Ladders! The Great Race!
Research backs their utility for learning!

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Zosh, Hirsh-Pasek et al., 2018

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And research suggests that play and playful learning enhances **coping skills**, **social regulation** (collaboration); **language and literacy** (communication); and **STEM** (content learning), and **hypothesis testing** (critical thinking), and even **creativity**, among others

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In fact, a report from Phillips et al. (2017) suggests that even our preschool classrooms should “teach” using a playful learning approach



The Current State of Scientific Knowledge on Pre-Kindergarten Effects

- 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

And Fuller et al., 2017 adds:
If you can combine creative play with rich language, formal conversations and math concepts, that’s more likely to yield the cognitive gains we observed

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A talk in 3 parts

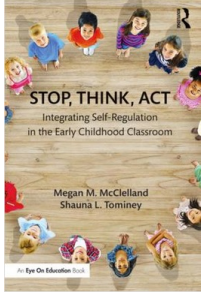

- Defining play
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Megan McClelland's classroom games for social regulation get similar results

- 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

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Playful learning and cognitive skills: Literacy



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

A now classic paper by Lillard et al. (2012) suggests language and reading outcomes are the strongest examples of where even free play encourages development

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ies INSTITUTE OF EDUCATION SCIENCES

Our research (with Dickinson and Hirsh-Pasek) asks how **playful learning** can increase vocabulary in low-income children.



Photo from Sheryl Ann Crawford

Adult reads children a book like *I Knight and the Dragon* while highlighting new words (e.g., galloping, shield)



Free play
 No focus, dialogue; child initiated and directed

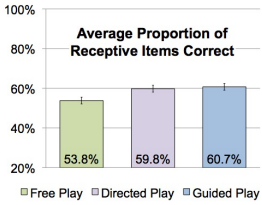
Directed play
 Targeted focus with more closed questions; adult initiated and directed.

Guided play
 Targeted focus with more open-ended questions; adult initiated, child directed.

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Results?



Play Type	Average Proportion of Receptive Items Correct
Free Play	53.8%
Directed Play	59.8%
Guided Play	60.7%

Effects lasted 4.5 mos!

Weisberg et al., 2015; Toub et al., in press

Children comprehended more words after the intervention *in all conditions*

Adult supported play was better than free play *in all conditions!*

Book reading + adult supported play was also better than *book reading plus fun flash cards!*

Bottom line? When there is a learning goal – adult supported play (guided or directed) helps children learn!

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Our most recent findings

- We used different play activities – singing, large and small group games, act-out story, and a digital game.
- Our kids learned target vocabulary as well in the play conditions as they did in the read condition!
- Word meanings picked up incidentally in the context of fun activities!**



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Then we asked whether game play might help readers learn vocabulary better than flashcards and – it did!

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!"

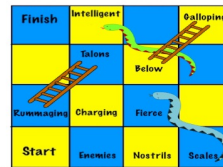
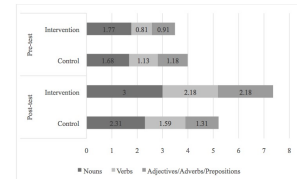


Figure B3. Sample Snakes & Ladders game board

SNAKES & LADDERS



Hassinger-Das, Ridge, Golinkoff & Hirsh-Pasek, 2016

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In our research, we studied **Block Play** to ask if it might build better spatial language and math outcomes

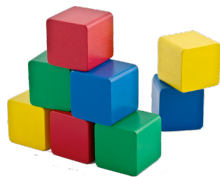
Our questions:

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

Result: YES in non-block play contexts, parents use only 3 to 6% of spatial terms

Do we talk more about space in certain play situations over others? (using words like above, on top of, beside...)

Result: YES there is more spatial language in guided play than in free play



Ferrara, Hirsh-Pasek, Newcombe & Golinkoff, 2011; Bower et al., 2021

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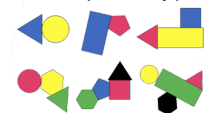


Why should we care?

Because spatial language and spatial play relate...

- to spatial ability!
- and math ability!

2-D Test of Spatial Ability (TOSA)



3-D Test of Spatial Ability (TOSA)



Verdine, B., Golinkoff, R., Hirsh-Pasek, K., Newcombe, N., Filipowicz, A. & Chang, A. (2014); Verdine, Golinkoff, Hirsh-Pasek & Newcombe, 2017

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Why might playful learning support learning? Some hypotheses

Big Idea 1: It involves "active, engaged, meaningful and socially interactive learning" and that is how humans learn best! (Chi, 2009; Hirsh-Pasek et al., 2015)

Big Idea 2: Guided play is like "constrained tinkering" that lessens the "noise" and prioritizes some hypotheses over others. Offers a chance for hypothesis testing. (Parish-Morris et al., 2014; Tare et al., 2010; Uttal et al., 1997)

Big Idea 3: Guided play creates a *mise en place* or positive disposition for learning and exploration (Weisberg, Hirsh-Pasek, Golinkoff & McCandless, 2014; Weisberg, Hirsh-Pasek et al., 2016).

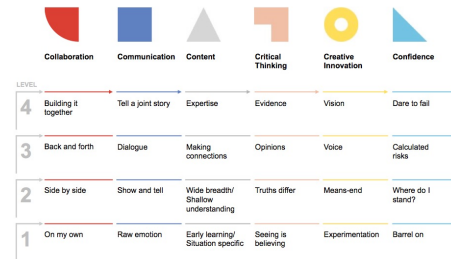
Big Idea 4: Playful learning is joyful and positive emotions help children learn!

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Big Idea 6: Play allows us to develop the suite of skills we need to be school ready – the 6Cs



Golinkoff, R. M. & Hirsh-Pasek, K. (2016). *Becoming brilliant: What science tells us about raising successful children*. Washington, D.C.: American Psychological Association Press. (Translated into Russian, Japanese, Korean, and Portuguese)

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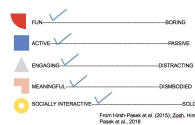
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Hmmmm.....

The HOW

If play helps children learn.....



From Hirsh-Pasek et al. (2015), Zuck, Hirsh-Pasek et al., 2016



The WHAT

A suite of skills that take you from cradle to career.....



Maybe I could use these two grids to create classrooms and informal learning spaces that support children and their families in playful learning! Maybe I can redefine education for the 21st Century!

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In school: 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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Using the grids, classrooms are using project-based learning and evaluating how the theme “grows” certain skills

The HOW

The WHAT

An arts mural project?

Putting on a show from a book the class read?

Figuring out what birds live in the area?

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An example using theme-based learning

- West Chester kindergartens

Fairy Tales

The Doctors

Explorers

Very preliminary findings?

- > reading at grade level
- > math at grade level
- < in referrals for OT
- < 79% referrals for special education
- + teachers are happier

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Playful Learning can also provide opportunities in communities?

Did you know that children spend only 20% of their waking time in school?

What are they doing with the other 80%? Can we create playful learning opportunities to leapfrog learning and promote school readiness???

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Asks how we can transform everyday spaces into fun learning spaces – and does so where the families live – in their own homes and neighborhoods!



We started by asking, when is a bench not a bench?




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Example 1: Urban Thinkscape

RESULTS


- The number of families with 6 or more conversation turns increased 39% from pre to posttest.
- 35% more families at Urban Thinkscape had 6 or more conversation turns than families at the control playground.
- The number of families using number, spatial, color, or letter language increased by 34% from pre to posttest.
- Adults' following children's focus increased by 62% from pre to posttest.
- Group Total Interaction at Urban Thinkscape increased 24% from pre to posttest, and Group Total Language scores increased 27% from pre to posttest.

Hosinger-Das, B., Paltri, L., Golinkoff, R. M., & Hirsh-Pasek, K. (2020). Urban Thinkscape: Infusing public spaces with STEM conversation and interaction opportunities. *Journal of Cognition and Development*, 21(1), 125-147.

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Example 2: The Ultimate Block Party

28 science inspired activities in Central Park, NY in 2010

Over 10 million people reached; 50,000 at event itself!

Results showed increase in parents' attitudes to the play-learning connection, which is a vital component in public awareness.

Grob, R., Schlesinger, M., Pace, A., Golinkoff, R. M., & Hirsh-Pasek, K. (2017). Playing wiideas: Evaluating the impact of the Ultimate Block Party, a collective experiential intervention to enrich perceptions of play. *Child Development*, 88, 1419-1434.

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Example 3: The Supermarket Study

Can the introduction of signs in a supermarket increase caregiver child language interactions?

WHY BOTHER? Language (Communication) single best predictor of school success.

RESULTS

- A 33% increase in caregiver - child language when the signs were up in low-income neighborhoods.

Ridge, K. E., Weisberg, D. S., Ilgaz, H., Hirsh-Pasek, K. A., & Golinkoff, R. M. (2015). Supermarket Speak: Increasing talk among low-socioeconomic status families. *Mind, Brain, and Education*, 9(3), 127-135

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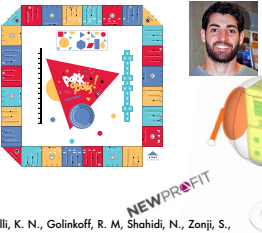
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Example 4: Parkopolis

The Human Sized Board Game for early mathematical skills and scientific reasoning.

RESULTS

- 75% more children used math language (whole numbers, fractions, measurement, patterns) in Parkopolis compared to children in the control STEM exhibit.
- 47% more adults used math language (whole numbers, fractions, measurement, patterns) in Parkopolis compared to children in the control STEM exhibit.
- 18% more parents asked questions in Parkopolis than parents in the control STEM exhibit.
- 25% more families had conversations 6 or more conversation turns than families in the control STEM exhibit.



NEWPROFIT

Bustamante, A. S., Schlesinger, M., Begolli, K. N., Golinkoff, R. M., Shohdi, N., Zonji, S., Riesen, C., Evans, N., & Hirsh-Pasek, K. (2020). More than just a game: Transforming social interaction and STEM play with Parkopolis. *Developmental Psychology*, 56, 1041-1056.

Gaudreau, C.M., Bustamante, A., Hirsh-Pasek, K., & Golinkoff, R. M. (2021). Questions in a life-sized board game: Comparing caregivers' and children's questions across STEM museum exhibits. *Mind, Brain, and Education*, 1-12.

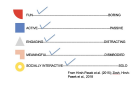
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Bringing it home

- Once you know the trick...any spaces, programs and installations can become playful learning exhibits!


The HOW



The WHAT



The story of the train at the park



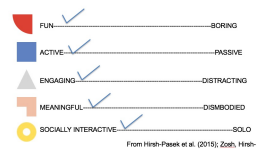
Golinkoff & Hirsh-Pasek, 2016

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Take any theme that you want to explore – or that you already do!

Add the HOW



Then add the WHAT




From Hirsh-Pasek et al. (2015); Zoh, Hirsh-Pasek et al., 2018

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Putting it all together.....you can...



And when you do you will re-imagine learning for our time....and teach in the way children learn!

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Let's get something straight:



Early childhood education is part of the infrastructure in the US we need to fix!


We know that. Now we have to spread the word and tell others!
We must get our kids



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 @kathyandro1

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