

A dark blue silhouette of a child sitting and reading a book, positioned in the upper left background. The child's head is tilted down towards the book.

MAINE DEPARTMENT  
OF EDUCATION

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# Understanding the Role of Play in Early Elementary Grades

**Presented by:** The Early Learning Team



Our Team

# Presenter Information



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# Audience Introductions

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Classroom Teachers  
Principals  
Curriculum Directors  
Special Education Teachers  
Support Staff  
Other?



What's this all about?

## Learning Objectives/Session Overview

Today's learning objectives and session goals

- Identify the cognitive, social and emotional benefits of play
- Review the research and long-term positive impacts on interactions and developmental outcomes

### ✓ Part 1

The "Why" of Play-Based Learning

### ✓ Part 2

Research on Play

# Part 1: The “Why” of Play-Based Learning

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# Playful Learning Stories

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- Think of a moment when you experienced being a playful learner.
- Represent that experience using playful materials available to you.
- Share with a partner what that experience felt like.
- Use this link to enter a word or a phrase to describe what your playful experience felt like.



# Why Playful Learning?

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- During play children...
  - Are engaged, relaxed, and challenged
  - Seek and gain new information
  - Experiment and test understandings and hypotheses
- Play offers powerful ways for children to develop their cognitive, social, emotional, and physical development
- Children play to actively learn





# The Learning Opportunities Play Affords

- Social Problem-Solving
- Extended Conversations
- Regulating Emotions and Behavior
- Cooperation and Communication
- Negotiating Skills
- Perspective Taking
- Agency and Decision Making
- Experimentation and Risk Taking
- Content Knowledge and Skill Building

**Play is a strategy for learning**, not a set of activities teachers need to make time for.



- Susan MacKay

Sources: Play Today Handbook and Project Zero





<https://youtu.be/14oLKlJ-vfs>

3:01

As you watch:

- 1) Notice something you see or hear to which you can **connect/relate**.
- 2) Notice something you see or hear that **intrigues, inspires** or perhaps **worries** you!

36 weeks  
gestation

Newborn

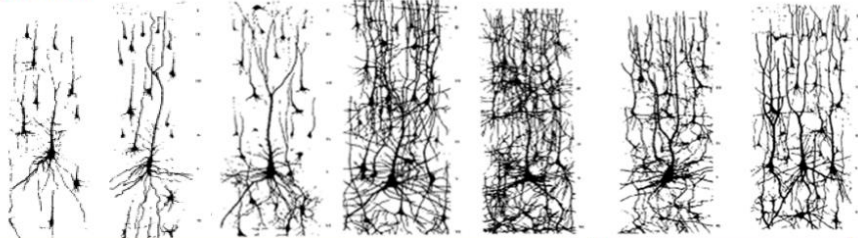
3 months

6 months

2 years

4 years

6 years



Synapse formation

Synapse pruning



Newborn



1 Month



9 Months



2 Years



Adult

Source: Corel, J.L. *The postnatal development of the human cerebral cortex*. Cambridge, MA: Harvard University Press; 1975.

Best Practices

## Cognitive Benefits

Play-based learning offers significant cognitive benefits for young children, as it supports how they *naturally* learn and develop!

- **Executive Function Development-** working memory, cognitive flexibility and self-control
- **Language and Communication Skills-** Practice vocabulary and sentence structure, engage in storytelling and conversation, learn the social rules of communication (taking turns, listening)
- **Problem Solving and Critical Thinking-** Try out ideas and test hypotheses, make decisions and analyze outcomes, engage in trial and error
- **Pre-Literacy Skills-** use signs, symbols, and make meaning through role-play
- **Mathematical Thinking-** Sorting, counting, measuring, and pattern recognition
- **Creativity and Imagination-** Encourages divergent thinking (many solutions to a problem) children generate ideas, stories, and inventions
- **Knowledge Construction-** Connecting new experiences with what they already know



Playful learning is not "just play"—it's a powerful, brain-building activity that supports cognitive development across multiple domains. It's developmentally appropriate, engaging, and essential for lifelong learning.

# Benefits of Play on Emotional intelligence

The science: Emotional intelligence developed by age five supports emotional well-being, school success, and healthy relationships later in life.

- Play allows children to build self-regulation by following social rules and staying focused, even when excited or frustrated
- Play helps children learn how to create, adapt, and follow rules.
- Through play, children gain the chance to practice choosing when to take charge and when to follow others' lead.







# Benefits of Play on Language Development

- Language and Play “intertwined”
- Play builds representational skills (cardboard box can be anything: a house, a rocket ship, etc.)
- Those skills support language skills of using words to represent thoughts and items.
- Play is a safe space that children can practice expanding language skills they are learning.



# Benefits of Play on Language Development



- Play promotes and is associated with
  - Greater vocabulary development
  - Increased oral narrative skills, such as telling and retelling stories and recounting events
  - Higher receptive vocabulary skills
- **Guided Play** (asking questions, modeling play and language, facilitating opportunities for peer interactions, etc.)
  - is associated with higher receptive and expressive language

# Benefits of Play on Executive Function



## Play Enhances Core Executive Functions

- Executive functions include working memory, cognitive flexibility, and inhibitory control.
- Research shows pretend play and rule-based games improve these skills by requiring children to plan, shift attention, and follow rules (Barker et al., 2014; Diamond & Lee, 2011).

## Pretend Play Strengthens Cognitive Flexibility

- In imaginative play, children switch roles, invent scenarios, and adapt to new rules—directly exercising mental flexibility.
- Studies find a strong link between complex socio-dramatic play and higher performance on flexibility tasks.

## Rule-Based Play Develops Inhibitory Control

- Games like “Simon Says” or board games teach children to pause, wait their turn, or suppress impulsive reactions, improving self-regulation.

# Benefits of Play on Executive Function



## Working Memory is Practiced Through Play

- Keeping track of evolving play rules or remembering character roles helps children develop working memory.
- In sustained pretend play, children hold multiple ideas and actions in mind at once.

## Child-Led Play Builds Planning and Goal-Setting

- When kids direct their own play, they set goals ("Let's build a fort") and organize steps to achieve them, reinforcing planning and task management.

# Can *PLAY* be Defined in More Than One Way?

## Free Play

“Free play is uninhibited, unfettered play time. It happens alone or with peers. It’s **exploring, discovering, and imagining** at will.”



## Guided Play

Guided play is “free play with gentle, unobtrusive guidance from an adult or another child who **steers the play** but not the outcome.”



## Teacher Directed Play

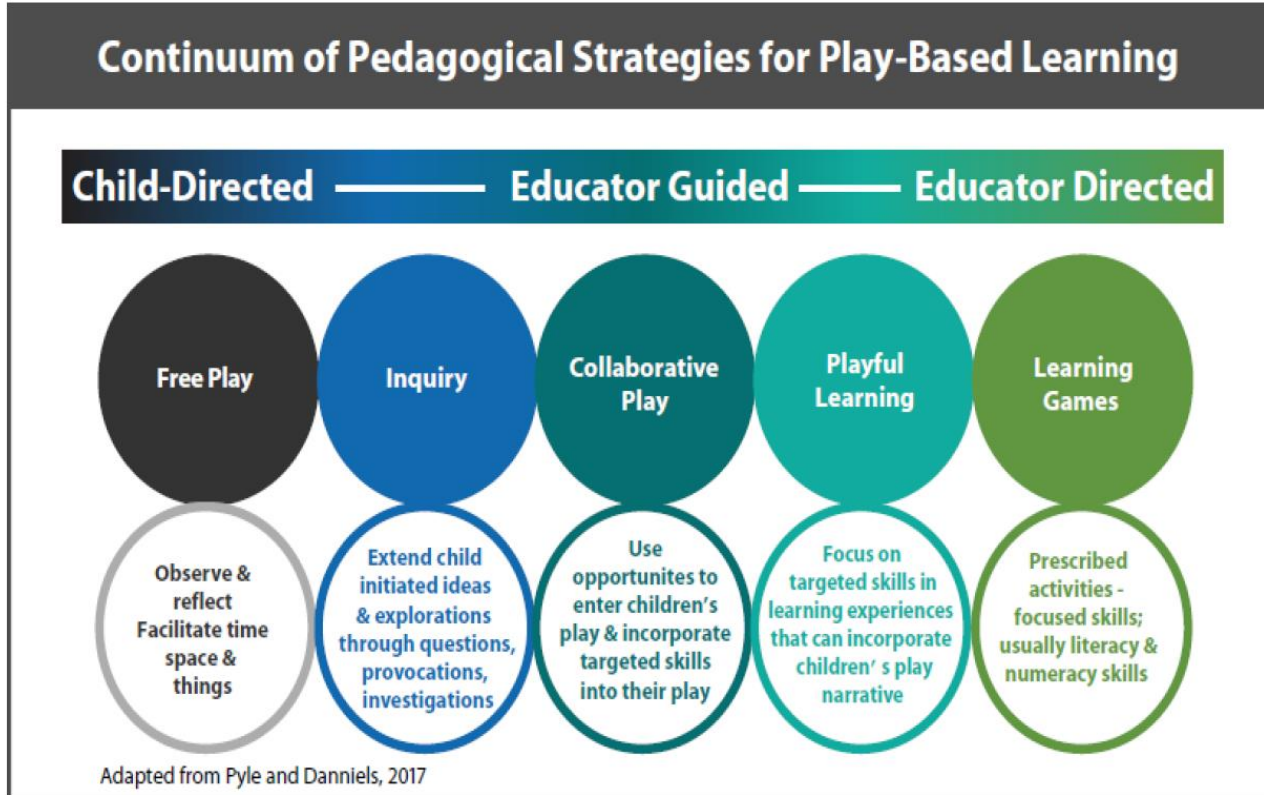
Teacher directed play is “a **prescribed activity** with a set outcome, directed by an adult or other authority (such as game rules).”



Connell, G. McCarthy C. (2014) [A Moving Child Is a Learning Child.](#)



# A Play Continuum



From: Appetite to Play, 2023.

# Paradoxes Between Play and School

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- In play children are in charge. At school, the agenda is set by adults.
- Play involves risks. In school children should be safe.
- Play is timeless. School is time tabled.
- Play can be chaotic, messy, and loud. Schools strive to be places of order.





Let's  
Take  
A  
Break



## Part 2: Research Insights

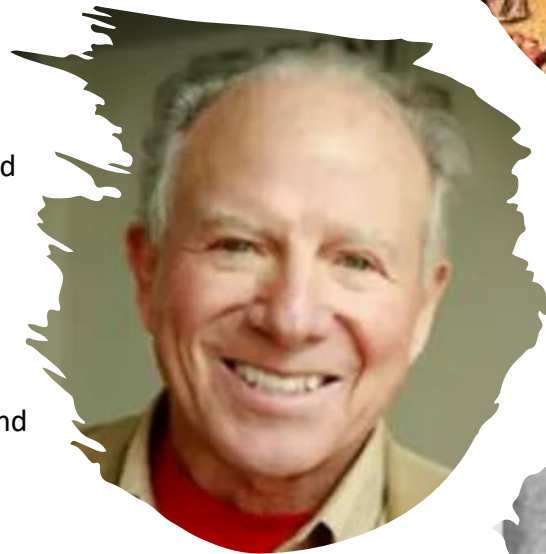
Recent research underscores the significance of play, explores how it nurtures positive interactions between children and their environment, and addresses its impact on long-term developmental outcomes.





# The Study of Play

- Dr. Stuart Brown
- (<https://www.npr.org/2015/03/27/395065944/how-does-play-shape-our-development>)
- Dr. Brown was researching the lives of murderers.
- He discovered a lack of play during childhood as a common theme.
- Began studying play and determined that children need play in order to learn. They learn about the world through play.
- Founder of the **National Institute for Play**:  
<https://www.playcore.com/drstuartbrown>
  - <http://www.nifplay.org/>
- Unusual Story in Manitoba: Impact of play on brains and relationships
- “Think about a life without play”



# The Study of Play



**A  
“Play Ballet”-  
An altered  
state of play**





## NASA's Study on Children, Creativity, and Schooling

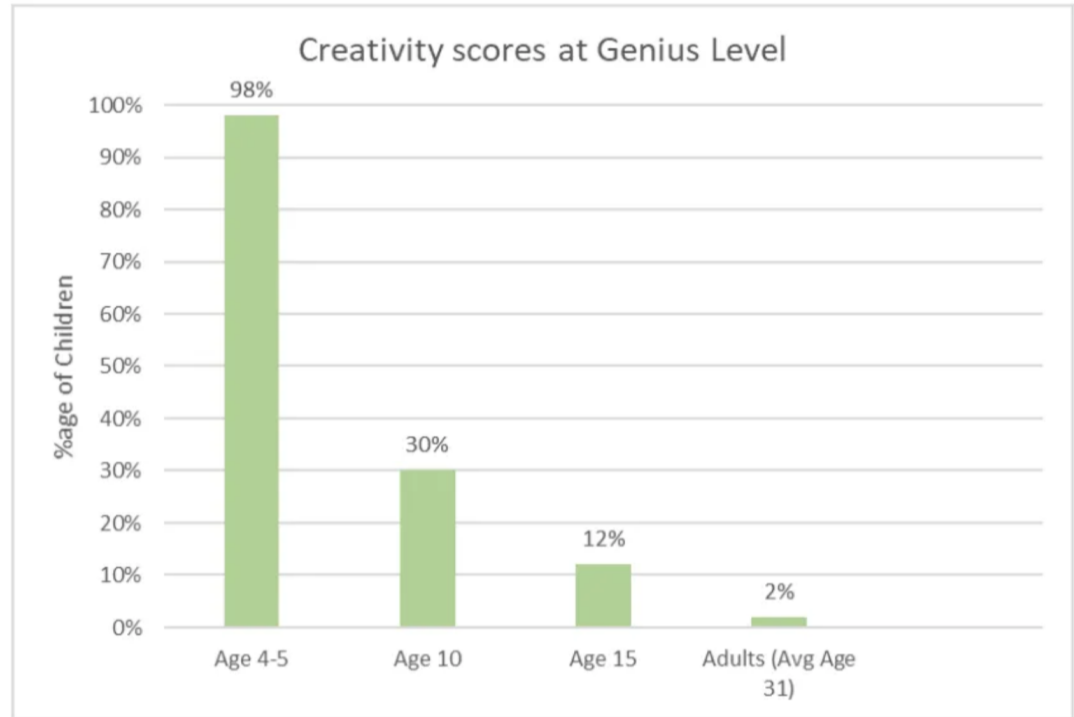


# Dr. George Land: NASA's Creativity Study

- In the late 1960s, NASA had a heightened focus on hiring innovative minds and commissioned a study led by Dr. George Land, designer of the NASA creativity test.
- The study focused on young children, ages 3 to 5.
- 1,600 children who were enrolled in a Head Start program were administered a creativity test that was initially developed to recruit NASA staff.
- Scientists were left with a few questions:
  - Where does creativity come from?
  - Are some people born with it or is it learned?
    - or, does it come from our experience?



# Dr. George Land- NASA's Creativity Study



Reference: Professor George Land, designer of NASA creativity test



## Dr. George Land: NASA's Creativity Study

- Dr. George Land's findings highlight a concerning decline in creative genius from childhood to adulthood.
- The traditional educational model emerged as a potential culprit.
- Resulting Question: How can schools foster divergent thinking in an effort to spark innate creativity?

# Dr. Peter Gray- Studies how humans learn



**Play is social and educational:** It supports emotional regulation, moral reasoning, language acquisition, and creative thinking.



**Imagination** is a key link between play and creativity, enabling children to explore hypothetical situations and new ways of being.



**Adults play a vital role** by creating environments that protect and nurture curiosity and play, especially as modern life restricts these natural learning processes.

*“There’s two aspects of education, knowledge and skills. Curiosity is how children acquire knowledge, play is how they acquire skills.” - Peter Gray*



# ***The Role of Adults in Childhood Play and Creativity***

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- Creativity is natural, not taught—but can be suppressed by limiting play, curiosity, and social interaction.
- Modern schooling often stifles creativity by prioritizing efficiency, productivity, and standardized academic achievement.
- Research shows a decline in creative thinking among U.S. children since the 1980s (Kim, 2011), especially in early grades.
- Children's lives are increasingly structured around achievement rather than open-ended exploration—limiting creativity and affecting mental health.
- Current educational priorities may overlook the needs of childhood, shifting focus away from imagination and play toward pressure and performance outcomes.



**Play is universal and culturally determined.**

***Roopnarine et al, 2015***

- How children play
- Where and when they play
- With whom they play
- When/if they should stop playing

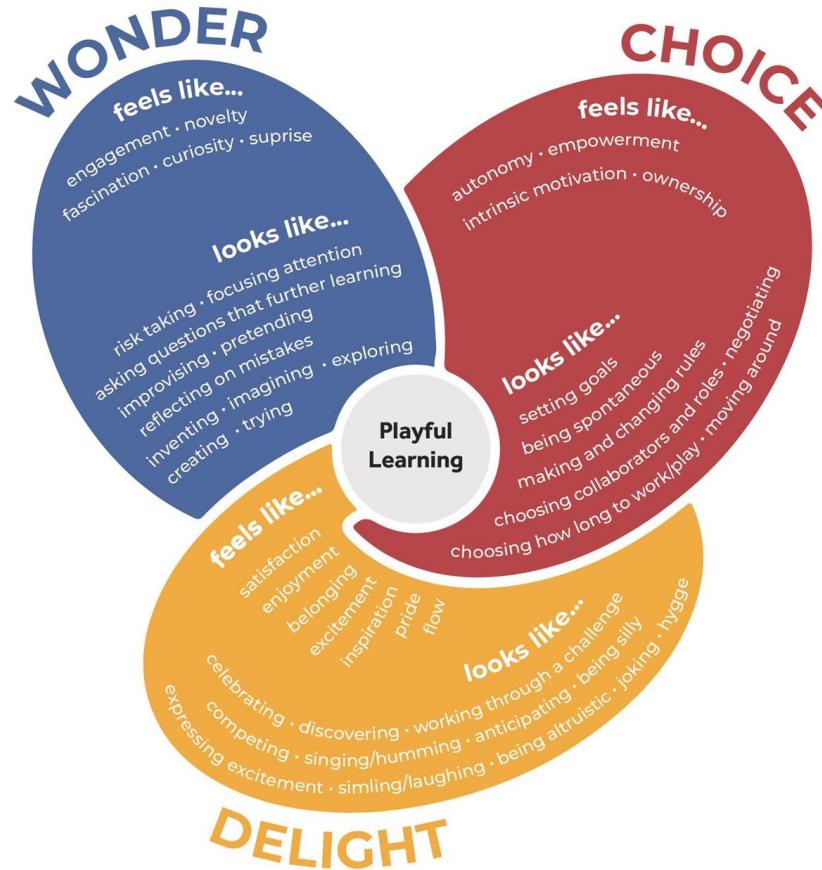
...all of these ideas are cultural constructs



# Participants and Data Sources

Context	Schools	Teachers	Grades	Observations	Teacher Intvws	School Leader Intvws	Focus & study groups
Denmark	1	40	preK-8	40	80	8	12
South Africa	3	11	preK-7	92	33	8	2
U.S.	6	22	K-9	88	40	12	1
Colombia	5	16	preK-7	92	47	15	N/A

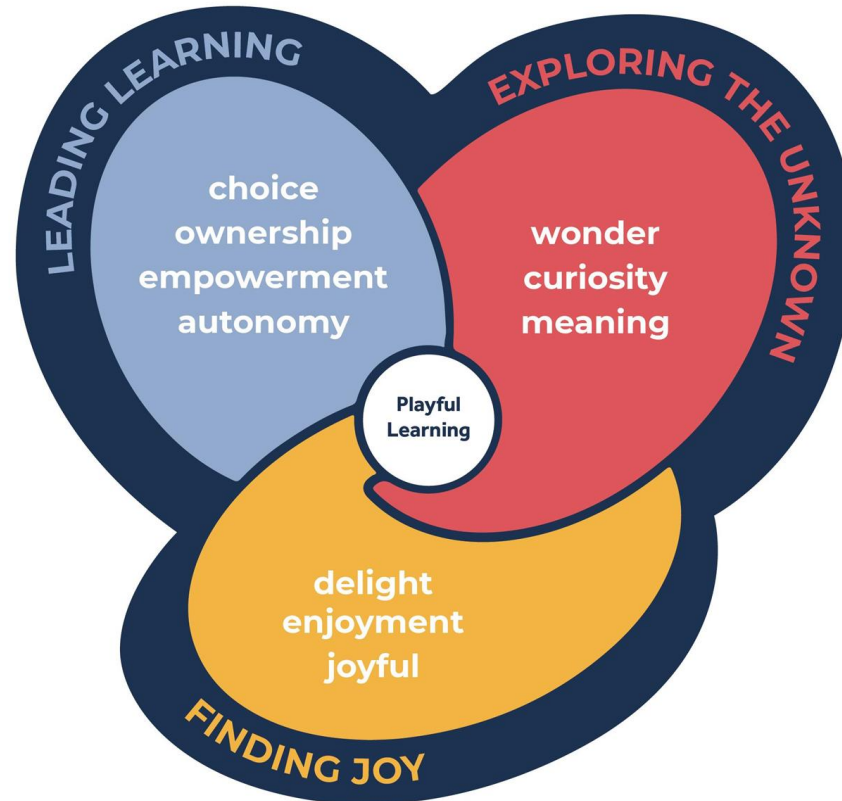
# Indicators of Playful Learning from the International School of Billund in Denmark



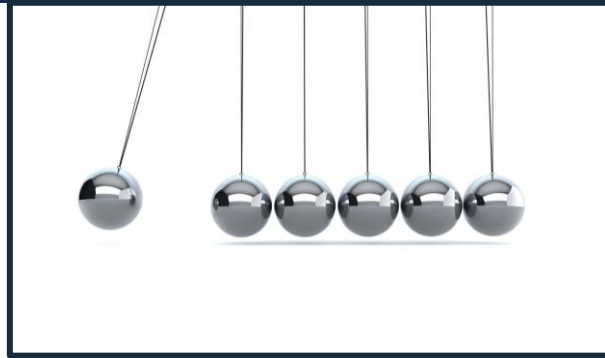


# Cross-cultural Indicators of Playful Learning

Patterns from schools in Denmark, South Africa, the U.S, and Colombia



# The Pendulum Swings Back



*"Play doesn't have to be using  
your hands, or moving around,  
we can also use our brains to  
play. If you have play in your  
heart, everything is fun."*

- 5th grader in Taiwan

# Executive Function Research



- “Less-structured time in children's daily lives predicts self-directed executive functioning” (**Barker et al. 2014**).
  - Children who engaged more frequently in socio-dramatic play demonstrated stronger inhibitory control and cognitive flexibility, key components of executive function.
    - **Implication:** Play-based experiences scaffold self-regulation skills critical for academic and lifelong success.
- “Interventions shown to aid executive function development in children 4 to 12 years old” (**Diamond & Lee 2011**).
  - Playful activities like martial arts, Tools of the Mind, and pretend play significantly improved working memory, cognitive flexibility, and inhibitory control.
    - **Implication:** Play isn’t supplemental—it’s foundational for building executive functioning.

# Social Behaviour Research



- "Play in great apes and humans." Book Chapter: In Oxford Handbook of Developmental Psychology. Pellegrini & Smith (2007)
  - Rough-and-tumble play, pretend play, and cooperative games help children learn empathy, negotiation, and perspective-taking.
    - **Implication:** Play is a natural context for social learning and emotional regulation.
- "The impact of pretend play on children's development: A review of the evidence." (Lillard et al. 2013)
  - Pretend play supports the development of social cognition, including theory of mind, self-other differentiation, and moral reasoning.
    - **Implication:** Structured and unstructured pretend play lays the groundwork for pro-social behavior.



# Cognitive Function Research



- "The importance of play." (**Whitebread et al. 2012**)
  - Play supports problem-solving, language development, and early literacy and numeracy skills.
    - **Implication:** High-quality play experiences enhance cognitive growth by encouraging experimentation and hypothesis testing.
- "The importance of play in promoting healthy child development and maintaining strong parent-child bonds." (**Ginsburg 2007**).
  - Play provides a safe and supportive context for brain development and cognitive advancement.
    - **Implication:** The absence of play may contribute to delays in cognitive and emotional development.



<https://www.youtube.com/watch?v=wJaAegok8L4>

4:48

As you watch:

- 1) How does Dr. Gray's definition of play resonate with you?
- 2) How does his definition compare to our definition and/or the play continuum?



**I used to think...**  
**Now I know...**

**Questions**

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**And**  
**Discussion**

# Upcoming EngageMEnt Sessions

**January 16, 2026:** The How of Playful Learning

**March 20, 2026:** Cultivating Playful Learning and  
Assessment Practices

Join us in between sessions for a text study using  
*A Pedagogy of Play*.

- *More details will be shared about this option in early November.*







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