THE SCIENCE OF PLAY

What research helps us understand about play, development and learning

Play engages attention, memory, emotion, movement, imagination and social interaction. These processes matter for learning, but research does not support a simple claim that every kind of play automatically improves brain development.

SIX PROCESSES ENGAGED THROUGH PLAY

01 ATTENTION & MOTIVATION

Interest and meaningful choices can help learners sustain attention, ask questions and return to challenges. Engagement is valuable, but enjoyment alone does not guarantee learning.

02 MEMORY & MEANING

Revisiting ideas and connecting experiences with existing knowledge can support understanding. Discussion and reflection may help make those connections more visible.

03 EXECUTIVE FUNCTION

Complex play can involve planning, remembering rules, adapting strategies and managing impulses. Evidence for direct improvements in executive function remains mixed.

04 EMOTION & REGULATION

Play can involve joy, frustration, uncertainty and cooperation. Supportive relationships help learners navigate these experiences and participate safely.

05 SOCIAL UNDERSTANDING

Shared play offers opportunities to communicate, negotiate, consider perspectives and respond to others. Experiences vary according to context and support.

06 EXPLORATION & FLEXIBILITY

Open-ended experiences invite learners to test ideas, encounter unexpected results and revise approaches, drawing on knowledge and imagination.

WHAT ABOUT THE DEVELOPING BRAIN?

The brain changes through experience across the lifespan. Play is one of many experiences that engage learning-related processes. Animal studies and human neuroscience offer insights, but they do not justify claims that particular classroom activities grow specific brain regions or guarantee outcomes.

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Reflecting on research-informed teaching decisions

FROM SCIENCE TO PROFESSIONAL PRACTICE

Use these questions to examine the experiences available to learners across the school years. They are prompts for professional inquiry, not a checklist for judging children or teachers.

ENGAGEMENT	What interests are learners pursuing? When do they sustain attention or return to a challenge?
AGENCY	Where can learners choose, plan, test possibilities or influence what happens next?
DEPTH	Is there time to revisit ideas, refine thinking and build on previous discoveries?
RELATIONSHIPS	How do adult support and peer interactions enable different learners to participate?
CHALLENGE	Can learners encounter manageable uncertainty, try again and receive support when needed?
TEACHING	When would modelling, explanation or explicit instruction deepen the learning?

LOOK CAREFULLY AT THE CLAIMS WE MAKE

Instead of: “Play rewires children’s brains.”

Try: “Play engages processes involved in learning and development.”

Instead of: “Play automatically develops executive function.”

Try: “Some play experiences offer opportunities to practise planning and flexibility.”

Instead of: “Children learn best when everything is playful.”

Try: “Different goals benefit from play, guided exploration and explicit teaching.”

OUR PROFESSIONAL REFLECTION

One aspect of play we now understand more deeply:

The science helps us understand why play deserves attention. Professional judgement helps us decide how to protect and support it.

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