



## The Power of Playful Learning in the Early Childhood Setting

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Play versus learning represents a false dichotomy in education (e.g., Hirsh-Pasek & Golinkoff 2008). In part, the persistent belief that learning must be rigid and teacher directed—the opposite of play—is motivated by the lack of a clear definition of what constitutes playful learning (Zosh et al. 2018). And, in part, it is motivated by older perceptions of play and learning. Newer research, however, allows us to reframe the debate as learning via play—as playful learning.

This piece, which is an excerpt from Chapter 5 in *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth Through Age 8*, Fourth Edition (NAEYC 2022), suggests that defining play on a spectrum (Zosh et al. 2018, an idea first introduced by Bergen 1988) helps to resolve old divisions and provides a powerful framework that puts *playful learning*—rich curriculum coupled with a playful pedagogy—front and center as a model for all early childhood educators. (See below for a discussion of play on a spectrum.)

This excerpt also illustrates the ways in which play and learning mutually support one another and how teachers connect learning goals to children's play. Whether solitary, dramatic, parallel, social, cooperative, onlooker, object, fantasy, physical, constructive, or games with rules, play, in all of its forms, is a teaching practice that optimally facilitates young children's development and learning. By maximizing children's choice, promoting wonder and enthusiasm for learning, and leveraging joy, playful learning pedagogies support development across domains and content areas and increase learning relative to more didactic methods (Alfieri et al. 2011; Bonawitz et al. 2011; Sim & Xu 2015).

# Playful Learning: A Powerful Teaching Tool

Despite its efficacy in supporting learning, play in early childhood settings has often suffered a bad reputation. Historical changes in educational philosophy tell a story of play that was excised from early childhood classrooms. The 1990s, for example, brought a dramatic change as free play and center time were replaced with rigid, skills-focused, highly teacher-scripted curricula, targeted to children in schools in underserved communities. By the turn of the millennium, the No Child Left Behind Act of 2001 was enacted to address the so-called gap in school achievement between children from communities with more advantages and resources and those from less-resourced communities. With a recognition that early childhood is key to later academic achievement, early reading and math were heavily emphasized in the primary grades (Pedulla et al. 2003; Hannaway & Hamilton 2008) and accountability and high-stakes testing increased (Ravitch 2010). Rigid teaching practices soon trickled down into preschool and kindergarten classrooms, replacing playful, child-initiated activities with more time at desks with pencil-and-paper tasks and resulting in kindergarten looking more like “the new first grade” (Miller & Almon 2009; Bassok, Latham, & Rorem 2016, 2). Kindergarten teachers found themselves becoming less like relationship builders and more like what Erica Christakis (2016) called “carnival barkers” spitting out prescribed lessons.



This narrowing of the curriculum and high-stakes assessment practices (such as paper-and-pencil tests for kindergartners) increased stress on educators, children, and families but failed to deliver on the promise of narrowing—let alone closing—the gap. *All* children need well-thought-out curricula, including reading and STEM experiences and an emphasis on executive function skills such as attention, impulse control, and memory (Duncan et al. 2007). But to promote happy, successful, lifelong learners, children must be immersed in developmentally appropriate practice and rich curricular learning that is culturally relevant (NAEYC 2020). Playful learning is a vehicle for achieving this. Schools must also address the inequitable access to play afforded to children (see “Both/And: Early Childhood Education Needs Both Play and Equity,” by Ijumaa Jordan.) All children should be afforded opportunities to play, regardless of their racial group, socioeconomic class, and disability if they have been diagnosed with one. We second the call of Maria Souto-Manning (2017): “Although play has traditionally been positioned as a privilege, it must be (re)positioned as a right, as outlined by the *United Nations Convention on the Rights of the Child*, Article 31” (785).

# What Is Playful Learning?

Playful learning describes a learning context in which children learn content while playing freely (free play or self-directed play), with teacher guidance (guided play), or in a structured game. By harnessing children's natural curiosity and their proclivities to experiment, explore, problem solve, and stay engaged in meaningful activities—especially when doing so with others—teachers maximize learning while individualizing learning goals. Central to this concept is the idea that teachers act more as the Socratic “guide at the side” than a “sage on the stage” (e.g., King 1993, 30; Smith 1993, 35). Rather than view children as empty vessels receiving information, teachers see children as active explorers and discoverers who bring their prior knowledge into the learning experience and construct an understanding of, for example, words such as *forecast* and *low pressure* as they explore weather patterns and the science behind them. In other words, teachers support children as active learners.

Importantly, playful learning pedagogies naturally align with the characteristics that research in the science of learning suggests help humans learn. Playful learning leverages the power of active (minds-on), engaging (not distracting), meaningful, socially interactive, and iterative thinking and learning (Zosh et al. 2018) in powerful ways that lead to increased learning.

Free play lets children explore and express themselves—to be the captains of their own ship. While free play is important, if a teacher has a learning goal, guided play and games are the road to successful outcomes for children (see Weisberg, Hirsh-Pasek, & Golinkoff 2013 for a review). Playful learning in the form of guided play, in which the teacher builds in the learning as part of a fun context such as a weather report, keeps the child's agency but adds an intentional component to the play that helps children learn more from the experience. In fact, when researchers compared children's skill development during free play in comparison to guided play, they found that children learned more vocabulary (Toub et al. 2018) and spatial skills (Fisher et al. 2013) in guided play than in free play.

## Self-Directed Play, Free Play

NAEYC's 2020 position statement on developmentally appropriate practice uses the term *self-directed play* to refer to play that is initiated and directed by children. Such play is termed *free play* in the larger works of the authors of this excerpt; therefore, free play is the primary term used in this article, with occasional references to self-directed play, the term used in the rest of the DAP book.

Imagine an everyday block corner. The children are immersed in play with each other—some trying to build high towers and others creating a tunnel for the small toy cars on the nearby shelves. But what if there were a few model pictures on the wall of what children could strive to make as they collaborated in that block corner? Might they rotate certain pieces purposely? Might they communicate with one another that the rectangle needs to go on top of the square? Again, a simple insertion of a design that children can try to copy turns a play situation into one ripe with spatial learning. Play is a particularly effective way to engage children with specific content learning when there is a learning goal.

## Why Playful Learning Is Critical

Teachers play a crucial role in creating places and spaces where they can introduce playful learning to help all children master not only content but also the skills they will need for future success. The science of learning literature (e.g., Fisher et al. 2013; Weisberg, Hirsh-Pasek, & Golinkoff 2013; Zosh et al. 2018) suggests that playful learning can change the “old equation” for learning, which posited that direct, teacher-led instruction, such as lectures and worksheets, was the way to achieve rich content learning. This “new equation” moves beyond a sole focus on content and instead views playful learning as a way to support a breadth of skills while embracing developmentally appropriate practice guidelines (see Hirsh-Pasek et al. 2020).

Using a playful learning pedagogical approach leverages the skill sets of today's educators and enhances their ability to help children attain curricular goals. It engages what has been termed active learning that is also developmentally appropriate and offers a more equitable way of engaging children by increasing access to participation. When topics are important and culturally relevant to children, they can better identify with the subject and the learning becomes more seamless.

While educators of younger children are already well versed in creating playful and joyful experiences to support social goals (e.g., taking turns and resolving conflicts), they can use this same skill set to support more content-focused curricular goals (e.g., mathematics and literacy). Similarly, while teachers of older children have plenty of experience determining concrete content-based learning goals (e.g., attaining Common Core Standards), they can build upon this set of skills and use playful learning as a pedagogy to meet those goals.

## Learning Through Play: A Play Spectrum

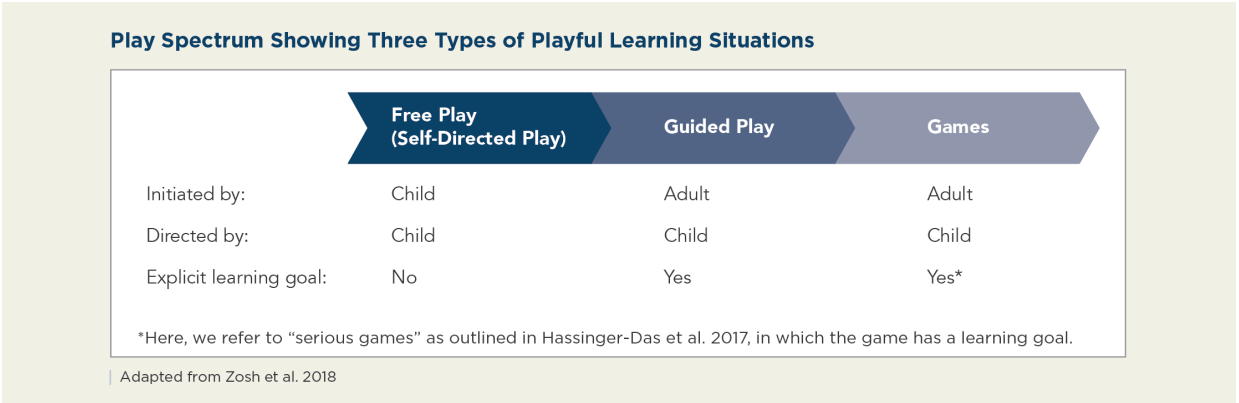
As noted previously, play can be thought of as lying on a spectrum that includes free play (or self-directed play), guided play, games, playful instruction, and direct instruction (Bergen 1988; Zosh et al. 2018). For the purposes of this piece, we use a spectrum that includes the first three of these aspects of playful learning, as illustrated in “Play Spectrum Showing Three Types of Playful Learning Situations” below.

The following variables determine the degree to which an activity can be considered playful learning:

- level of adult involvement
- extent to which the child is directing the learning
- presence of a learning goal

Toward the left end of the spectrum are activities with more child agency, less adult involvement, and loosely defined or no particular learning goals. Further to the right, adults are more involved, but children still direct the activity or interaction.

Developmentally appropriate practice does not mean primarily that children play without a planned learning environment or learn mostly through direct instruction (NAEYC 2020). Educators in high-quality early childhood programs offer a range of learning experiences that fall all along this spectrum. By thinking of play as a spectrum, educators can more easily assess where their learning activities and lessons fall on this spectrum by considering the components and intentions of the lesson. Using their professional knowledge of how children develop and learn, their knowledge of individual children, and their understanding of social and cultural contexts, educators can then begin to think strategically about how to target playful learning (especially guided play and games) to leverage how children naturally learn. This more nuanced view of play and playful learning can be used to both meet age-appropriate learning objectives and support engaged, meaningful learning.



## Free Play

In the kindergarten classroom in the following vignette, children have ample time for play and exploration in centers, where they decide what to play with and what they want to create. These play centers are the focus of the room and the main tool for developing social and emotional as well as academic skills; they reflect and support what the children are learning through whole-group discussions, lessons, and skills-focused stations. In the vignette, the teacher embeds guided play opportunities within the children’s free play.

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### Studying Bears: Self-Directed Play that Extends What Kindergartners Are Learning

While studying the habits of animals in winter, the class is taking a deeper dive into the lives of American black bears, animals that make their homes in their region. In the block center, one small group of children uses short lengths and cross-sections of real tree branches as blocks along with construction paper to create a forest habitat for black bear figurines. They enlist their friends in the art center to assist in making trees and bushes. Two children are in the writing center. Hearing that their friends are looking for help to create a habitat, they look around and decide a hole punch and blue paper are the perfect tools for making blueberries—a snack black bears love to eat! Now multiple centers and groups of children are involved in making the block center become a black bear habitat.

In the dramatic play center, some of the children pretend to be bear biologists, using stethoscopes, scales, and magnifying glasses to study the health of a couple of plush black bears. When these checkups are complete, the teacher suggests the children could describe the bears' health in a written "report," thus embedding guided play within their free play. A few children at the easels in the art center are painting pictures of black bears.

*Contributed by Amy Blessing*

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Free play, or self-directed play, is often heralded as the gold standard of play. It encourages children's initiative, independence, and problem solving and has been linked to benefits in social and emotional development (e.g., Singer & Singer 1990; Pagani et al. 2010; Romano et al. 2010; Gray 2013) and language and literacy (e.g., Neuman & Roskos 1992). Through play, children explore and make sense of their world, develop imaginative and symbolic thinking, and develop physical competence. The kindergarten children in the example above were developing their fine motor and collaboration skills, displaying their understanding of science concepts (such as the needs of animals and living things), and exercising their literacy and writing skills. Such benefits are precisely why free play has an important role in developmentally appropriate practice. To maximize learning, teachers also provide guided play experiences.

## Guided Play

While free play has great value for children, empirical evidence suggests that it is not always sufficient *when there is a pedagogical goal at stake* (Smith & Pellegrini 2008; Alfieri et al. 2011; Fisher et al. 2013; Lillard 2013; Weisberg, Hirsh-Pasek, & Golinkoff 2013; Toub et al. 2018). This is where guided play comes in.

Guided play allows teachers to focus children's play around specific learning goals (e.g., standards-based goals), which can be applied to a variety of topics, from learning place value in math to identifying rhyming words in literacy activities. Note, however, that the teacher does not take over the play activity or even direct it. Instead, she asks probing questions that guide the next level of child-directed exploration. This is a perfect example of how a teacher can initiate a context for learning while still leaving the child in charge. In the previous kindergarten vignette, the teacher guided the children in developing their literacy skills as she embedded writing activities within the free play at the centers.

### Facilitating Guided Play

Skilled teachers set up environments and facilitate development and learning throughout the early childhood years, such as in the following:

- Ms. Taglieri notices what 4-month-old Anthony looks at and shows interest in. Following his interest and attention, she plays Peekaboo, adjusting her actions (where she places the blanket and peeks out at him) to maintain engagement.
- Ms. Eberhard notices that 22-month-old Abe knows the color yellow. She prepares her environment based on this observation, placing a few yellow objects along with a few red ones on a small table. Abe immediately goes to the table, picking up each yellow item and verbally labeling them ("Lellow!").
- Mr. Gorga creates intrigue and participation by inviting his preschool class to "be shape detectives" and to "discover the secret of shapes." As the children explore the shapes, Mr. Gorga offers questions and prompts to guide children to answer the question "What makes them the same kind of shapes?"

An analogy for facilitating guided play is bumper bowling. If bumpers are in place, most children are more likely than not to knock down some pins when they throw the ball down the lane. That is different than teaching children exactly how to throw it (although some children, such as those who have disabilities or who become frustrated if they feel a challenge is too great, may require that level of support or instruction). Guided play is not a one-size-fits-all prescriptive pedagogical technique. Instead, teachers match the level of support they give in guided play to the children in front of them.

Critically, many teachers already implement these kinds of playful activities. When the children are excited by the birds they have seen outside of their window for the past couple of days, the teachers may capitalize on this interest and provide children with materials for a set of playful activities about bird names, diets, habitats, and songs. Asking children to use their hands to mimic an elephant's trunk when learning vocabulary can promote learning through playful instruction that involves movement. Similarly, embedding vocabulary in stories



that are culturally relevant promotes language and early literacy development (García-Alvarado, Arreguín, & Ruiz-Escalante 2020). For example, a teacher who has several children in his class with Mexican heritage decides to read aloud *Too Many Tamales* (by Gary Soto, illus. Ed Martinez) and have the children reenact scenes from it, learning about different literary themes and concepts through play. The children learn more vocabulary, have a better comprehension of the text, and see themselves and their experiences reflected. The teacher also adds some of the ingredients and props for making tamales into the sociodramatic play center (Salinas-González, Arreguín-Anderson, & Alanís 2018) and invites families to share stories about family *tamaladas* (tamale-making parties).

### **Evidence Supporting Guided Play as a Powerful Pedagogical Tool**

Evidence from the science of learning suggests that discovery-based guided play actually results in increased learning for all children relative to both free play and direct instruction (see Alferi et al. 2011). These effects hold across content areas including spatial learning (Fisher et al. 2013), literacy (Han et al. 2010; Nicolopoulou et al. 2015; Hassinger-Das et al. 2016; Cavanaugh et al. 2017; Toub et al. 2018; Moedt & Holmes 2020), and mathematics (Zosh et al. 2016).

There are several possible reasons for guided play's effectiveness. First, it harnesses the joy that is critical to creativity and learning (e.g., Isen, Daubman, & Nowicki 1987; Resnick 2007). Second, during guided play, the adults help “set the stage for thought and action” by essentially limiting the number of possible outcomes for the children so that the learning goal is discoverable, but children still direct the activity (Weisberg et al. 2014, 276). Teachers work to provide high-quality materials, eliminate distractions, and prepare the space, but then, critically, they let the child play the active role of construction. Third, in guided play, the teacher points the way toward a positive outcome and hence lessens the ambiguity (the degrees of freedom) without directing children to an answer or limiting children to a single discovery (e.g., Bonawitz et al. 2011). And finally, guided play provides the opportunity for new information to be integrated with existing knowledge and updated as children explore.

## **Games**

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### **Reinforcing Numeracy with a Game**

The children in Mr. Cohen's preschool class are at varying levels of understanding in early numeracy skills (e.g., cardinality, one-to-one correspondence, order irrelevance). He knows that his children need some practice with these skills but wants to make the experience joyful while also building these foundational skills. One day, he brings out a new game for them to play—The Great Race. Carla and Michael look up expectantly, and their faces light up when they realize they will be playing a game instead of completing a worksheet. The two quickly pull out the box, setting up the board and choosing their game pieces. Michael begins by flicking the spinner with his finger, landing on 2. "Nice!" Carla exclaims, as Michael moves his game piece, counting "One, two." Carla takes a turn next, spinning a 1 and promptly counting "one" as she moves her piece one space ahead. "My turn!" Michael says, eager to win the race. As he spins a 2, he pauses. "One . . . two," he says, hesitating, as he moves his piece to space 4 on the board. Carla corrects him, "I think you mean 'three, four,' right? You have to count up from where you are on the board." Michael nods, remembering the rules Mr. Cohen taught him earlier that day. "Right," he says, "three, four."

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Similar to guided play, games can be designed in ways that help support learning goals (Hassinger-Das et al. 2017). In this case, instead of adults playing the role of curating the activity, the games themselves provide this type of external scaffolding. The example with Michael and Carla shows how children can learn through games, which is supported by research. In one well-known study, playing a board game (i.e., The Great Race) in which children navigated through a linear, numerical-based game board (i.e., the game board had equally spaced game spaces that go from left to right) resulted in increased numerical development as compared to playing the same game where the numbers were replaced by colors (Siegler & Ramani 2008) or with numbers organized in a circular fashion (Siegler & Ramani 2009). Structuring experiences so that the learning goal is intertwined naturally with children's play supports their learning. A critical point with both guided play and games is that children are provided with support but still lead their own learning.

Digital educational games have become enormously popular, with tens of thousands of apps marketed as "educational," although there is no independent review of these apps. Apps and digital games may have educational value when they inspire active, engaged, meaningful, and socially interactive experiences (Hirsh-Pasek et al. 2015), but recent research suggests that many of the most downloaded educational apps do not actually align with these characteristics that lead to learning (Meyer et al. 2021). Teachers should exercise caution and evaluate any activity—digital or not—to see how well it harnesses the power of playful learning.

# Next Steps for Educators

Educators are uniquely positioned to prepare today's children for achievement today and success tomorrow. Further, the evidence is mounting that playful pedagogies appear to be an accessible, powerful tool that harnesses the pillars of learning. This approach can be used across ages and is effective in learning across domains.

By leveraging children's own interests and mindfully creating activities that let children play their way to new understanding and skills, educators can start using this powerful approach today. By harnessing the children's interests at different ages and engaging them in playful learning activities, educators can help children learn while having fun. And, importantly, educators will have more fun too when they see children happy and engaged.

As the tide begins to change in individual classrooms, educators need to acknowledge that vast inequalities (e.g., socioeconomic achievement gaps) continue to exist (Kearney & Levine 2016). The larger challenge remains in propelling a cultural shift so that administrators, families, and policymakers understand the way in which educators can support the success of all children through high-quality, playful learning experiences.

Consider the following reflection questions as you reflect how to support equitable playful learning experiences for each and every child:

- One of the best places to start is by thinking about your teaching strengths. Perhaps you are great at sparking joy and engagement. Or maybe you are able to frequently leverage children's home lives in your lessons. How can you expand practices you already use as an educator or are learning about in your courses to incorporate the playful learning described in this article?
- How can you share the information in this chapter with families, administrators, and other educators? How can you help them understand how play can engage children in deep, joyful learning?

This piece is excerpted from NAEYC's recently published book *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth Through Age 8*, Fourth Edition. For more information about the book, visit [NAEYC.org/resources/pubs/books/dap-fourth-edition](http://NAEYC.org/resources/pubs/books/dap-fourth-edition).

## Teaching Play Skills

**Pamela Brillante**

While many young children with autism spectrum disorder enjoy playing, they can have difficulty engaging in traditional play activities. They may engage in activities that do not look like ordinary play, including playing with only a few specific toys or playing in a specific, repetitive way.

Even though most children learn play skills naturally, sometimes families and teachers have to teach children how to play. Learning how to play will help develop many other skills young children need for the future, including

- **social skills:** taking turns, sharing, and working cooperatively
- **cognitive skills:** problem-solving skills, early academic skills
- **communication skills:** responding to others, asking questions
- **physical skills:** body awareness, fine and gross motor coordination

Several evidence-based therapeutic approaches to teaching young children with autism focus on teaching play skills, including

- The Play Project: **<https://playproject.org>**
- The Greenspan Floortime approach: **<https://stanleygreenspan.com>**
- Integrated Play Group (IPG) Model: **[www.wolfberg.com](http://www.wolfberg.com)**

While many children with autism have professionals and therapists working with them, teachers and families should work collaboratively and provide multiple opportunities for children to practice new skills and engage in play at their own level. For example, focus on simple activities that promote engagement between the adult and the child as well as the child and their peers without disabilities, including playing with things such as bubbles, cause-and-effect toys, and interactive books. You can also use the child's preferred toy in the play, like having the Spider-Man figure be the one popping the bubbles.

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## References

Alfieri, L., P.J. Brooks, N.J. Aldrich, & H.R. Tenenbaum. 2011. "Does Discovery-Based Instruction Enhance Learning?" *Journal of Educational Psychology* 103 (1): 1–18.

Bassok, D., S. Latham, & A. Rorem. 2016. "Is Kindergarten the New First Grade?" *AERA Open* 2 (1): 1–31. doi.10.1177/2332858415616358.

Bergen, D., ed. 1988. *Play as a Medium for Learning and Development: A Handbook of Theory and Practice*. Portsmouth, NH: Heinemann Educational Books.

Bonawitz, E.B., P. Shafto, H. Gweon, N.D. Goodman, E.S. Spelke, & L. Schulz. 2011. "The Double-Edged Sword of Pedagogy: Instruction Limits Spontaneous Exploration and Discovery." *Cognition* 120 (3): 322–30.

Cavanaugh, D.M., K.J. Clemence, M.M. Teale, A.C. Rule, & S.E. Montgomery. 2017. "Kindergarten Scores, Storytelling, Executive Function, and Motivation Improved Through Literacy-Rich Guided Play." *Journal of Early Childhood Education* 45 (6): 1–13.

Christakis, E. 2016. *The Importance of Being Little: What Preschoolers Really Need from Grownups*. New York: Penguin Books.

Duncan, G. J., A. Claessens, A.C. Huston, L.S. Pagani, M. Engel, H. Sexton, C.J. Dowsett, K. Magnuson, P. Klebanov, L. Feinstein, J. Brooks-Gunn, K. Duckworth, & C. Japel. 2007. "School Readiness and Later Achievement." *Developmental Psychology* 43 (6): 1428–46. <https://doi.apa.org/doi/10.1037/0012-1649.43.6.1428>.

Fisher, K.R., K. Hirsh-Pasek, N. Newcombe, & R.M. Golinkoff. 2013. "Taking Shape: Supporting Preschoolers' Acquisition of Geometric Knowledge Through Guided Play." *Child Development* 84 (6): 1872–78.

García-Alvarado, S., M.G. Arreguín, & J.A. Ruiz-Escalante. 2020. "Mexican-American Preschoolers as Co-Creators of Zones of Proximal Development During Retellings of Culturally Relevant Stories: A Participatory Study." *Journal of Early Childhood Literacy*: 1–22. <https://doi.org/10.1177%2F1468798420930339>.

Gray, P. 2013. *Free to Learn: Why Unleashing the Instinct to Play Will Make Our Children Happier, More Self-Reliant, and Better Students for Life*. New York: Basic Books.

Han, M., N. Moore, C. Vukelich, & M. Buell. 2010. "Does Play Make a Difference? How Play Intervention Affects the Vocabulary Learning of At-Risk Preschoolers." *American Journal of Play* 3 (1): 82–105.

Hannaway, J., & L. Hamilton. 2008. *Accountability Policies: Implications for School and Classroom Practices*. Washington, DC: Urban Institute. <http://webarchive.urban.org/publications/411779.html>.

Hassinger-Das, B., K. Ridge, A. Parker, R.M. Golinkoff, K. Hirsh-Pasek, & D.K. Dickinson. 2016. "Building Vocabulary Knowledge in Preschoolers Through Shared Book Reading and Gameplay." *Mind, Brain, and Education* 10 (2): 71–80.  
<https://doi.org/10.1111/mbe.12103>.

Hassinger-Das, B., T.S. Toub, J.M. Zosh, J. Michnick, R. Golinkoff, & K. Hirsh-Pasek. 2017. "More Than Just Fun: A Place for Games in Playful Learning." *Infancia y aprendizaje: Journal for the Study of Education and Development* 40 (2): 191–218.  
<https://doi.org/10.1080/02103702.2017.1292684>.

Hirsh-Pasek, K., & R.M. Golinkoff. 2008. "Why Play = Learning." In *Encyclopedia on Early Childhood Development* [online], eds. R.E. Tremblay, M. Boivin, & R.D. Peters, topic ed. P.K. Smith, 1–6. Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development. [www.child-encyclopedia.com/play/according-experts/why-play-learning](http://www.child-encyclopedia.com/play/according-experts/why-play-learning).

Hirsh-Pasek, K., H. S. Hadani, E. Blinkoff, & R. M. Golinkoff. 2020. *A new path to education reform: Playful learning promotes 21st-century skills in schools and beyond*. The Brookings Institution: Big Ideas Policy Report. [www.brookings.edu/policy2020/bigideas/a-new-path-to-education-reform-playful-learning-promotes-21st-century-skills-in-schools-and-beyond](http://www.brookings.edu/policy2020/bigideas/a-new-path-to-education-reform-playful-learning-promotes-21st-century-skills-in-schools-and-beyond).

Hirsh-Pasek, K., J.M. Zosh, R.M. Golinkoff, J.H. Gray, M.B. Robb, & J. Kaufman. 2015. "Putting Education in 'Educational' Apps: Lessons from the Science of Learning." *Psychological Science in the Public Interest* 16 (1): 3–34.

Isen, A.M., K.A. Daubman, & G.P. Nowicki. 1987. "Positive Affect Facilitates Creative Problem Solving." *Journal of Personality and Social Psychology* 52 (6): 1122–31.

Kearney, M.S., & P.B. Levine. (2016, Spring). *Income, Inequality, Social Mobility, and the Decision to Drop Out of High School*. Washington, DC: Brookings. [www.brookings.edu/bpea-articles/income-inequality-social-mobility-and-the-decision-to-drop-out-of-high-school](http://www.brookings.edu/bpea-articles/income-inequality-social-mobility-and-the-decision-to-drop-out-of-high-school).

King, A. 1993. "From Sage on the Stage to Guide on the Side." *College Teaching* 41 (1): 30–35.

Lillard, A.S. 2013. "Playful Learning and Montessori Education." *American Journal of Play* 5 (2): 157–86.

Meyer, M., J.M. Zosh, C. McLaren, M. Robb, R.M. Golinkoff, K. Hirsh-Pasek, & J. Radesky. 2021. "How Educational Are 'Educational' Apps for Young Children? App Store Content Analysis Using the Four Pillars of Learning Framework." *Journal of Children and Media*. Published online February 23.

Miller, E., & J. Almon. 2009. *Crisis in the Kindergarten: Why Children Need to Play in School*. College Park, MD: Alliance for Childhood. <https://files.eric.ed.gov/fulltext/ED504839.pdf>.

Moedt, K., & R.M. Holmes. 2020. "The Effects of Purposeful Play After Shared Storybook Readings on Kindergarten Children's Reading Comprehension, Creativity, and Language Skills and Abilities." *Early Child Development and Care* 190 (6): 839–54.



NAEYC. 2020. "Developmentally Appropriate Practice." Position statement. Washington, DC: NAEYC. [www.naeyc.org/resources/position-statements/dap](http://www.naeyc.org/resources/position-statements/dap).

Neuman, S.B., & K. Roskos. 1992. "Literacy Objects as Cultural Tools: Effects on Children's Literacy Behaviors in Play." *Reading Research Quarterly* 27 (3): 202–25.

Nicolopoulou, A., K.S. Cortina, H. Ilgaz, C.B. Cates, & A.B. de Sá. 2015. "Using a Narrative- and Play-Based Activity to Promote Low-Income Preschoolers' Oral Language, Emergent Literacy, and Social Competence." *Early Childhood Research Quarterly* 31 (2): 147–62.

Pagani, L.S., C. Fitzpatrick, I. Archambault, & M. Janosz. 2010. "School Readiness and Later Achievement: A French Canadian Replication and Extension." *Developmental Psychology* 46 (5): 984–94.

Pedulla, J.J., L.M. Abrams, G.F. Madaus, M.K. Russell, M.A. Ramos, & J. Miao. 2003. "Perceived Effect of State-Mandated Testing Programs on Teaching and Learning: Findings from a National Survey of Teachers" (ED481836). ERIC. <https://eric.ed.gov/?id=ED481836>.

Ravitch, D. 2010. "Why Public Schools Need Democratic Governance." *Phi Delta Kappan* 91 (6): 24–27.

Resnick, M. 2007. "All I Really Need to Know (About Creative Thinking) I Learned (by Studying How Children Learn) in Kindergarten." In *Proceedings of the 6th ACM SIGCHI Conference on Creativity & Cognition*, 1–6. New York: Association for Computing Machinery.

Romano, E., L. Babchishin, L.S. Pagani, & D. Kohen. 2010. "School Readiness and Later Achievement: Replication and Extension Using a Nationwide Canadian Survey." *Developmental Psychology* 46 (5): 995–1007.

- Salinas-González, I., M.G. Arreguín-Anderson, & I. Alanís. 2018. "Supporting Language: Culturally Rich Dramatic Play." *Teaching Young Children* 11 (2): 4–6.
- Siegler, R.S., & G.B. Ramani. 2008. "Playing Linear Numerical Board Games Promotes Low-Income Children's Numerical Development." *Developmental Science* 11 (5): 655–61.
- Siegler, R.S., & G.B. Ramani. 2009. "Playing Linear Number Board Games—but Not Circular Ones—Improves Low-Income Preschoolers' Numerical Understanding." *Journal of Educational Psychology* 101 (3): 545–60.
- Sim, Z., & F. Xu. 2015. "Toddlers Learn from Facilitated Play, Not Free Play." In *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, Berkeley, CA. <https://cognitivesciencesociety.org/past-conferences>.
- Singer, D.G., & J.L. Singer. 1990. *The House of Make-Believe: Children's Play and the Developing Imagination*. Cambridge, MA: Harvard University Press.
- Smith, K. 1993. "Becoming the 'Guide on the Side.'" *Educational Leadership* 51 (2): 35–37.
- Smith P.K., & A. Pellegrini. 2008. "Learning Through Play." In *Encyclopedia on Early Childhood Development* [online], eds. R.E. Tremblay, M. Boivin, & R.D. Peters, 1–6. Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development. <https://www.child-encyclopedia.com/pdf/expert/play/according-experts/learning-through-play>.
- Souto-Manning, M. 2017. "Is Play a Privilege or a Right? And What's Our Responsibility? On the Role of Play for Equity in Early Childhood Education." Foreword. *Early Child Development and Care* 187 (5–6): 785–87.  
[www.tandfonline.com/doi/full/10.1080/03004430.2016.1266588](http://www.tandfonline.com/doi/full/10.1080/03004430.2016.1266588).

Toub, T.S., B. Hassinger-Das, K.T. Nesbitt, H. Ilgaz, D.S. Weisberg, K. Hirsh-Pasek, R.M. Golinkoff, A. Nicolopoulou, & D.K. Dickinson. 2018. "The Language of Play: Developing Preschool Vocabulary Through Play Following Shared Book-Reading." *Early Childhood Research Quarterly* 45 (4): 1–17.

Weisberg, D.S., K. Hirsh-Pasek, & R.M. Golinkoff. 2013. "Guided Play: Where Curricular Goals Meet a Playful Pedagogy." *Mind, Brain, and Education* 7 (2): 104–12.

Weisberg, D.S., K. Hirsh-Pasek, R.M. Golinkoff, & B.D. McCandliss. 2014. "Mise en place: Setting the Stage for Thought and Action." *Trends in Cognitive Science* 18 (6): 276–78.

Zosh, J.M., B. Hassinger-Das, T.S. Toub, K. Hirsh-Pasek, & R. Golinkoff. 2016. "Playing with Mathematics: How Play Supports Learning and the Common Core State Standards." *Journal of Mathematics Education at Teachers College* 7 (1): 45–49. <https://doi.org/10.7916/jmetc.v7i1.787>.

Zosh, J.M., K. Hirsh-Pasek, E.J. Hopkins, H. Jensen, C. Liu, D. Neale, S.L. Solis, & D. Whitebread. 2018. "Accessing the Inaccessible: Redefining Play as a Spectrum." *Frontiers in Psychology* 9: 1–12. <https://doi.org/10.3389/fpsyg.2018.01124>.

**Audience:** *Teacher*

**Age:** *Kindergarten, Preschool*

**Topics:** *Child Development, Cognitive, Social and Emotional Development, Other Topics, Developmentally Appropriate Practice, Play, YC*

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