The **LEGO** Foundation

Playful Learning and Joyful Parenting

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Contents

Key messages

1

Science confirms the powerful role parents play in shaping their child's short- and long-term success and well-being.

There is no doubt that normal, everyday parent–child interactions help shape a child's life trajectory. From infancy, early parent–child engagements build a child's brain architecture. The experience of a sensitive and responsive parent throughout childhood positively impacts a child's achievement and social-emotional competencies through adolescence, and even into adulthood.

2

The current moment represents an urgent opportunity to inspire more joyful parenting by giving parents permission to let their children play.

Parents have been told how to parent for centuries. The parenting industry has created a culture of *hurried parenting* in more recent years – a culture where parents feel constant pressure to prepare their child for the future, rather than enjoy and nurture them in the present. The stressors of COVID-19 have only exacerbated demands on parents. Throughout all of this, a key piece of what makes parenting so powerful is missing – joy. It is time to bring joy to parenting by illuminating how something as seemingly simple and fun as play can prepare children for the 21st century.

3

Parents can use the characteristics of playful learning to bring joy and learning into daily interactions and routines.

This paper consolidates research findings to offer 15 behaviours and actions that can be nested into normal parent–child interactions to foster the five characteristics of learning through play in spaces and activities that make up an average day in the life of families. The menu of approaches is not another 'how-to book' or 'manual' for parents to pore over and follow meticulously. Rather, it is a toolbox that brings the science of learning and development to life for parents in a manageable and meaningful way.

4

Programmes can empower parents across different cultures and contexts to engage in playful learning.

Parents can change the lens on how they view everyday interactions with their child when they are supported to understand how play connects to the science of learning and how playful learning can contribute to their desired outcomes. Programmes should engage parents as partners to better understand and appreciate how playful learning comes to life in unique and culturally varied contexts. Programmes can consider an array of conduits to promote accessibility and the inclusion of *all* parents.

Parenting today

Parents* are the most important people in a child's life

Parents are a child's first teachers, brain builders, the social navigators and the foundation for children's emotional well-being. If we look beneath the surface of parent–child actions, we begin to see the richness of learning and social growth embedded in the recesses of every interaction. A mother soothing her crying infant offers a live demonstration of how to create a safe space – a chance to reinforce calm in what might seem like chaos to the young child. When a father builds a sandcastle with his sons, he is 'just playing' to some, but to the trained eye he is modelling sharing, a beautifully timed back-and-forth engagement that is a bedrock for learning. Parents travel through these mini engagements multiple times per hour, rarely mindful of the lasting impact that they are having on their child's life trajectories. A sensitive and joyful parent is a critical piece of a child's ecosystem. The better we understand the components that help parents interact with their children in positive ways, the more we find that joyful, responsive parenting supports children's development. This paper illuminates the behavioural jewels often naturally occurring in parent–child engagements. It uses the latest and best science to make the case that encouraging small nuggets of change in everyday moments can enrich the experience of being a parent while helping every child reach their full potential.

*We define a parent as any family member, caregiver or guardian who plays a lead role in caring for a child.

A reality check: Parents are inundated with a tsunami of information about how to parent

Parenting gurus are not new. The first known book with parenting advice dates back to 1544 when author Thomas Phaer urged new mothers to use pigeon blood to stop a baby's crying and rub rabbit brains on the gums of their teething infant. This advice would hardly be considered sane today. More recently, the iconic Dr Spock warned parents to avoid turning on the vacuum cleaner lest it scare the child. The advice keeps coming and parents are left wondering which titbits should be treasured and which trashed. Since Phaer's 'The Boke of Chyldren,' hundreds of millions of books brimming with sound and well-worn advice for parents have been published. Today, a simple Google search of 'parenting books' yields over 200 million results! And that count does not even include the handouts, blogs, newsletters, advice columns and parenting sections in newspapers, among others. Indeed, telling parents what to do has become a multibillion-dollar industry, with investors 'capitalizing' on the 'economic opportunity' offered by millennial parents (Bossi, 2020; Klich, 2019).

While scientific research finds a strong connection between the time a child spends in unstructured activities and better self-directed learning skills, like making and working towards their own goals (Barker et al., 2014) the parenting industry provides a laundry list of structured activities that parents '*must*' provide if they want their child to succeed (Paul, 2008). The result is what psychologist David Elkind calls the 'hurried child' syndrome (Elkind, 1981, 2006). Behind every 'hurried child' we find a *hurried parent* trying to sort out which advice to heed (Hirsh-Pasek, Golinkoff & Eyer, 2004). The culture of hurried parenting creates a climate in which parents are pressured to prepare their children to 'win at the starting line', rather than enjoy and nurture their children in the present (Li & Chen, 2017, p. 1474). For many, childhood has started to feel like a race rather than a destination in and of itself.

Hurried child, hurried parent: A global challenge

Both academic studies and popular media have documented the *hurried child, hurried parent* syndrome. From Nigeria (Ogundare, 2021) to South Korea (Shin, Jahng & Kim, 2019) to Canada (Hennig, 2017) to Britain (Kirkova, 2014) evidence of the overscheduling of children and concern about the pressure parents feel to give their child an academic edge are rising. Increases in parents' investment of time and money in their children, particularly among middle- and upper-class families, present evidence of shifting parenting norms (Gauthier & de Jong, 2021; Kornrich & Furstenberg, 2012). The concept that parents should invest a substantial amount of time and money to set their child up for success has become normalized around the world (Faircloth, 2014; Gauthier et al., 2021; Shin, Jahng & Kim, 2019; Sjödin & Roman, 2018). Many parents who do not have the financial means to enroll their children in many activities still believe this is something they *should* be doing (Bennett, Lutz & Jayaram, 2012; Chin & Phillips, 2004; Ishizuka, 2019).

COVID-19: The ultimate parent stressor

Stressors for modern-day parents were only exacerbated by the COVID-19 pandemic (Adams et al., 2021; Brown et al., 2020; Kurata et al., 2021). Parents had children at home 24/7 as schools and public services closed and went into lockdown. They were told that they needed to avert learning loss, support their children to manage emotional strain, and help their child stay safe from a deadly virus. The avalanche of advice columns and news items aimed at parents during COVID-19 was suffocating. How could a parent allay fears, explain why children were not able to see their friends, and keep them glued to remote learning, all while trying to cope themselves and keep up with their own responsibilities (Bennett, 2020; Cooney, 2020)? Put simply, parents needed some recess themselves to manage constant demands and stressors (Freisthler et al., 2021).

Bringing joy to parenting through playful learning

Parenting has always required hard work, but perhaps the current storm of stressors makes this a perfect time to start a movement for playful learning and joyful parenting. Although the parenting industry may tell parents otherwise, science indicates that parents need not stress over buying expensive toys, downloading the latest educational app, or filling their child's schedule with structured activities to accelerate their learning. Rather, a considerable amount of current research suggests that children can develop the skills they need for the 21st century *and* parents can find joy from something more natural – playful learning.

Opportunities for playful learning are right before our eyes if we only know where to look. A walk through the park sparks experimentation with shadows, a ride on the bus is an opportunity to incorporate a search for different shapes in the road signs, a trip to the laundromat could finish with a race to make pairs of socks. Looking beneath the surface allows parents to change the lens on how they view the everyday experiences in their life. It highlights how parents can enrich and populate these moments in ways that support playful learning and, in turn, foster joyful parenting and happy, social, thinking children.

Parent engagement in playful learning across a spectrum

Play is historically hard to define (e.g., Bergen, 1988; Gray, 2017; Sutton-Smith, 1997). Today, most agree that play is best conceptualized across a spectrum reflecting varying degrees of child and adult involvement in the experience, including choice and structure and the presence of a learning goal (Figure 1; see Zosh et al., 2017, 2018; 2022). The spectrum of play begins with **free play** which is child-initiated and child-directed. Next is **guided play** where children maintain autonomy while adults guide them towards a targeted learning goal through scaffolding and pre-preparation of the environment (Weisberg, Hirsh-Pasek et al., 2016). **Games** have set rules and constraints for play embedded within their structure (see Hassinger-Das et al., 2017). The spectrum ends with **direct instruction**, which is adult-designed and controlled. Direct instruction is no longer playful learning but rather can be 'chocolate covered broccoli' (Habgood & Ainsworth, 2011, p. 172), meaning it may be disguised as play (for example, when a parent instructs their child to write letters in soap suds during bath time), but it remains direct instruction.

If children are overscheduled, they no longer have time for free play. Yet, **free play** is fundamental to a child's well-being (Milteer et al., 2012). Experiences of free play in toddlerhood and the preschool years predict a child's ability to focus, to remember, and to think flexibly (in other words, their executive function skills) (Colliver et al., 2022; White et al., 2021). In some instances, like learning set procedures, children benefit from **direct instruction** (Klahr & Nigam, 2004, but see Dean & Kuhn, 2007), but **guided play** is the sweet spot for achieving a learning goal (Alfieri et al., 2011; Skene et al., 2022; Weisberg et al., 2016). A recent meta-analysis showed that guided play pedagogies often did better than direct instruction (Skene et al., 2022). At worst, the approach was equal to the outcomes produced by direct instruction. The bottom line is that for most, if not all, skills, guided play is the best way to support early learning.

PLAYFUL LEARNING

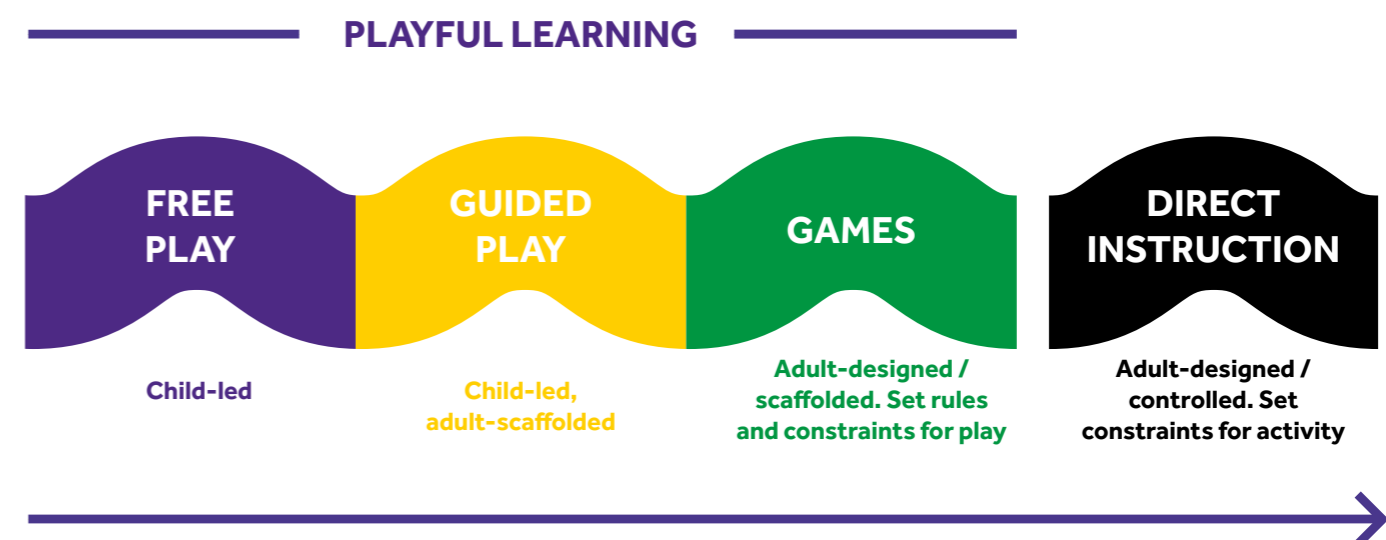| FREE PLAY	GUIDED PLAY	GAMES	DIRECT INSTRUCTION
Child-led	Child-led, adult-scaffolded	Adult-designed / scaffolded. Set rules and constraints for play	Adult-designed / controlled. Set constraints for activity

Figure 1. The play spectrum (as seen in Zosh et al., 2017)

What does this look like in practice?

Imagine a parent who wants to teach their child about shapes (all examples adapted from Hassinger-Das et al., 2017, p. 193). The manner in which the parent can encourage their child to learn about shapes would be different depending on whether they take a free play, guided play, games or direct instruction approach.

Imagine a mother gives her daughter blocks of different shapes and sizes, and the child chooses to build a castle with the blocks: that is **free play**. Now imagine the mother gives her child different shapes and says that she received a message from the child's 'Queen' toy that they must find out secret to what makes a 'real' triangle. The mother supports her daughter as she manipulates the materials to make triangles and non-triangles. The mother asks questions to guide a discussion about what makes a triangle 'real' before they report back to the 'Queen.' That is **guided play**. If the mother supports her daughter to play a game with a goal to identify all the triangles and fit them together to make a castle, this experience falls under **games**. What if the mother shows her daughter pictures of different shapes, points out the triangles, and then shows her a video about triangles? That is **direct instruction** and does not fall under the umbrella of playful learning. Research suggests that if the mother teaches her daughter about shapes via the guided play scenario, her daughter would likely be more engaged, show more exploratory behaviours and develop better shape knowledge than if her mother used the free play or direct instruction approach (Fisher et al., 2013).
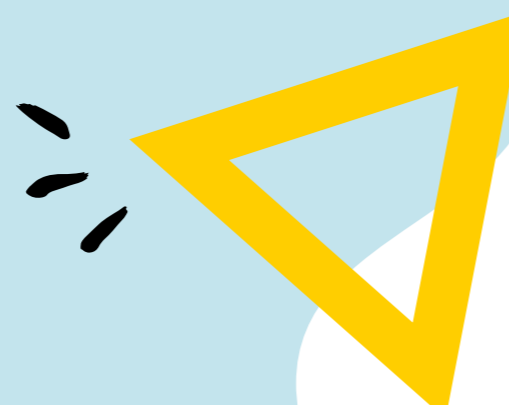
Parent roles across the play spectrum

Free play

During free play, children have complete choice and control. They set their own goals and follow their own interests. Imagine a child playing dress-up with their dolls. Or a group of children going on an 'adventure' to find treasure in the park. Or a child building a fort with materials they find around the house. These are all examples of free play because the child has free rein over what they do. The children in these examples develop social-emotional and learning-to-learn skills as they play freely (Colliver et al., 2022; White et al., 2021). During free play, a parent steps back and lets their child fully take the lead. The parent may observe their child, but they give their child space and time needed to have complete agency over their play and step in to support them only when necessary.

Guided play

Parents support children to achieve learning goals within the context of play during what is called guided play. Within guided play, a child maintains autonomy within a well-curated environment and/or with adult scaffolding (Weisberg et al., 2016). Parents can intentionally set up the environment or activities for the child to explore or can be the 'guide on the side' who gently reinforces and asks questions to move the learning along. A father saying to his son, "I wonder if we can build a tall, strong tower with these blocks of different sizes," encourages guided play. The father follows his son's lead as his son tries to build the tower, prompting his thinking by saying things like, "Hmmm, I notice our tower keeps falling when we put the small blue block on the bottom…" and "Why is our tower staying steady when the big red block is on the bottom, but not when the small blue block is on the bottom?" to support him along the way. Accumulated research suggests that guided play can lead to gains in literacy, math, and social skills (Fisher et al., 2013; Han et al., 2010; Nicolopoulou et al., 2015; Toub et al., 2018; Skene et al., 2022) and develops complex problem-solving behaviours in children (Hollenstein et al., 2022).

Games

Games offer an interesting case of guided play because to a great extent a game directs the activity of the participants. Rules, structure, and level of child choice built into the game become the 'rules' the players live by. The game itself determines the child's goal and naturally scaffolds the child's actions (Hassinger-Das et al., 2017). Games include physical games like tag, board games and card games, as well as digital games. High-quality games have been found to contribute to gains in literacy, numeracy, and social skills (Cavanaugh et al., 2017; Gibb et al., 2021; Ramani & Siegler, 2008; Scalise, Daubert & Ramani, 2018). On the other hand, there are excellent games that have no learning goal and so-called 'educational' games that are not optimal for learning, as is the case with many digital apps (Hassinger-Das et al., 2021; Meyer et al., 2021). Parents support their children by helping their child select a high-quality game, setting up the game for them, playing games alongside them and scaffolding along the way, or by reinforcing the roles of the players as the children learn to execute the rules of the game.

Direct instruction

Child agency is largely absent during direct instruction. Therefore, it does not fall under the umbrella of playful learning. We recognize that play is not the only way for parents to support children's learning. Parents can think about the complexity of the task at hand to distinguish when they should directly instruct their child from when they should support their child's playful learning. For example, take learning how to tie your shoelaces. Children can experiment for months by themselves and may not ever derive a good plan for learning to tie their shoelaces without direct instruction. When using the direct instruction approach to learning, parents can teach through modeling and concrete examples to help make it more meaningful for their child (Lee & Anderson, 2013).

More than one way to play

As illustrated by the play spectrum, there is more than one way for parents to support their children's playful learning. Parents offer different levels of support according to which type of playful learning approach is taken. Parents can consider the purpose of the activity and whether the activity has a learning goal when deciding just how to approach a given activity. Child agency is the common thread throughout all types of playful learning. To encourage agency, parents can provide the time and space necessary for their child to play freely, curate the environment to encourage rich playful learning experiences, or scaffold their child's exploration through intentional questioning and prompting while they play (Jensen et al., 2019; Weisberg, Hirsh-Pasek et al., 2013, 2016; Zosh et al., 2017, 2018).
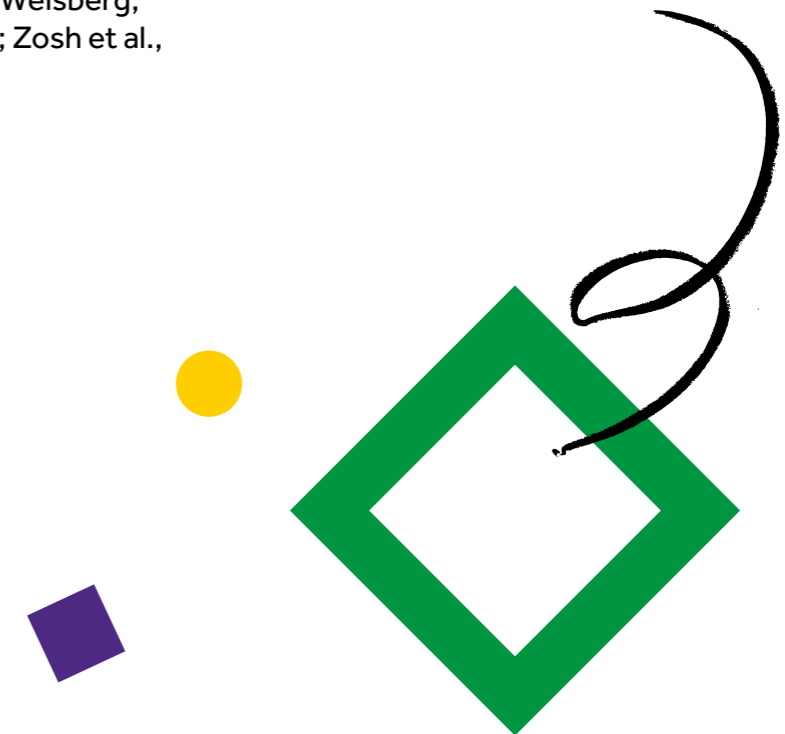
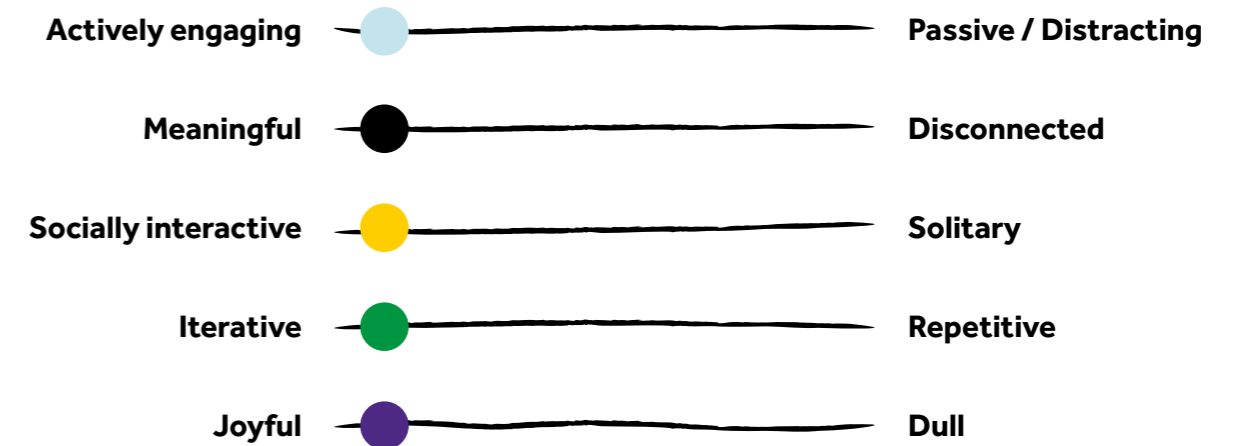# The five characteristics of learning through play

Figure 2. The five characteristics of learning through play

Playful learning is a relatively new field that embodies all the fundamental characteristics of learning experiences that best suit what we know about how brains learn. To stimulate learning, the experience should be **actively engaging**; that is, it requires the learner to not only be hands-on but also 'minds-on' (Hirsh-Pasek et al., 2015, p. 8). It should be **meaningful** for children by giving them opportunities to make connections between new and prior knowledge and contribute to something that matters to them. Learning can take place when the child is alone, but research tells us that when learning is **socially interactive** children build deeper understanding of content and stronger relationships. When experiences involve **iterative** processes – testing and trying out different hypotheses to get closer to solving a problem – it also leads to deeper learning for children. Children are more motivated to learn when experiences are fun, so learning experiences should also be **joyful**.

These characteristics – **actively engaging, meaningful, socially interactive, iterative, and joyful** – are reinforced in numerous articles throughout the literature on the science of learning. Taken in tandem, they overlap almost entirely with definitions of play. These characteristics promote deep, transferable learning that is retained over time and build the 21st- century skills children need to thrive (Golinkoff & Hirsh-Pasek, 2016; Hirsh-Pasek & Golinkoff, 2022; Hirsh-Pasek et al., 2020).

Fifteen approaches to bring the characteristics to life

What if we could promote these five characteristics in everyday parent–child interactions? Consolidating the research findings, we find 15 approaches that can be nested into normal routines to foster the five characteristics in spaces and activities that make up an average day in the life of families (see Figure 3). Our menu of approaches is not another 'how-to' or 'manual' to be heaped atop the modern parents-can-do-better offerings. The 15 approaches are not meant to be studied and applied in every parent–child interaction. Rather, the approaches are tools for parents to consider in whatever way makes sense for them. The collection of approaches brings the science of learning and development to life for parents in a manageable and meaningful way.

A note about contextual and cultural variation

Parenting approaches, as well as conceptualizations of and opportunities for play and learning, are deeply personal and dependent on a family's unique context and culture (Gaskins, 2015; Harkness et al., 2020; Rogoff, 1990; Roopnarine, 2012). Some parents may not have the discretionary time to play with their child and others may not find it appropriate to play with their child. We designed the 15 approaches to be broad and flexible so they may be incorporated into a variety of routines and moulded to be made meaningful across contexts. Parents can embed the approaches in whatever they do to stimulate joy and learning.

We appreciate that there is much more to learn about the variation in how parents and children across cultures and contexts engage in playful learning together. In the next phase of this project, we will focus our investigation on the nuances of how playful learning comes to life for parents and children across diverse cultures and contexts (see Future research directions section).

This paper presents each approach as connected to one of the five characteristics of learning through play according to what research suggests is the most significant connection. This structure helps us organize the white paper. However, it is important to note that, just like the five characteristics are mutually supportive of learning through play, most approaches may support multiple, if not all, of the characteristics of learning through play.

How parents support their child's playful learning
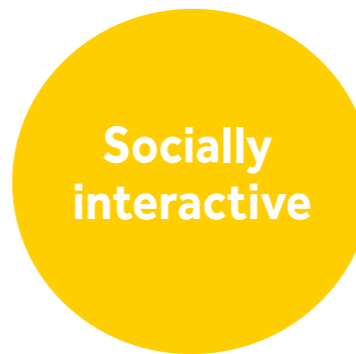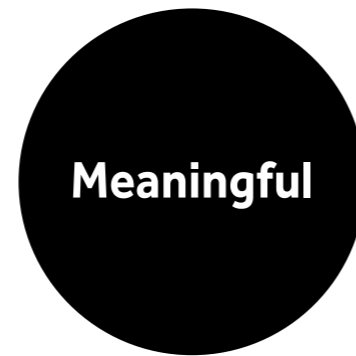
Figure 3. How parents support learning through play

CHARACTERISTICS

Actively engaging

Meaningful

Socially interactive

Iterative

Joyful

APPROACHES

1. Support their autonomy

2. Help them get to the next step

3. Create a supportive environment

4. Build on their interests

5. Let them join in daily tasks

6. Build on existing knowledge

7. Be a collaborative partner

8. Engage in two-way conversation

9. Share activities that promote social interaction

10. Embrace ambiguity and uncertainty

11. Encourage persistence

12. Praise the process

13. Share positive emotions

14. Find the fun

15. Share interests and leisure activities

Actively engaging

Joyful

Socially interactive

Actively engaging

Meaningful

Iterative

During an actively engaging experience, children are both hands-on and 'minds-on,' immersed and involved in the learning process themselves, rather than acting as receptacles for information (Chi, 2009; Hirsh-Pasek et al., 2015, p.8; Yannier et al., 2021). Actively engaging learning encourages more exploratory behaviours and engagement (Bonawitz et al., 2011), builds more spatial (Frick & Wang, 2014), math (Ferrara et al., 2011;

Fisher et al., 2013), and literacy competencies (Han et al., 2010; Zosh et al., 2013) and activates related parts of the brain (Kersey & James, 2013) more than passive learning does. Parents promote actively engaging learning experiences for their children by **supporting their child's autonomy**, **helping their child get to the next step**, and **creating a supportive environment**.

1. Support their autonomy

Children show more active engagement when parents **support their autonomy** (Callanan et al., 2017; Griffith & Arnold, 2019; Griffith & Grolnick, 2014; Wei et al., 2019). Parents can support their child's autonomy by giving their child choice in what they do, allowing consistent opportunities to participate in household or community activities and decisions, and giving their child the space and time necessary to discover things on their own rather than being told exactly how to do it. Autonomy-supportive parenting predicts a wide range of positive short- and long-term child outcomes (see Joussemet et al., 2005 and Vasquez et al., 2016, for a review), including intrinsic motivation (wanting to do things for oneself; Bronstein, Ginsburg, & Herrera, 2005; Deci & Ryan, 2008; Gonzalez & Wolters, 2006), self-regulation (the ability to control impulses; Meuwissen & Carlson, 2019) and executive function skills (the

'learning-to-learn' skills that are the foundation for success; Bernier, Carlson & Whipple, 2010; Distefano et al., 2018). Parental provision of choice, in particular, is connected to a child's stronger executive function skills (Castelo et al., 2022). Parents themselves also benefit from autonomy-supportive parenting. A study of nearly a thousand parents found that autonomy-supportive parenting (as defined by the study as giving children choice within certain limits) was positively associated with less parental stress and more parental vitality during the COVID-19 pandemic (Neubauer et al., 2021).

Tip: Follow your child's pace when they are engaged in a task. If they get stuck, ask open-ended questions (for example, ask 'What else could you try?') to encourage them to find solutions themselves, rather than showing them what to do.
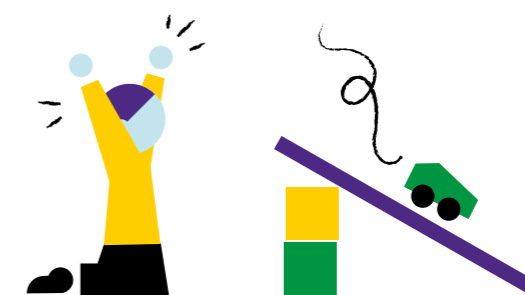
Imagine a child who is building a ramp to make his toy car go faster. His father sits nearby, folding laundry. When the child struggles and calls to his dad for help, his dad asks him questions to elicit his thinking (eg., 'What have you tried so far? Did that work? Why not?'). After a short back-and-forth discussion, the boy returns to work on his ramp independently. Now imagine if the boy's fa-

ther stepped in before his son asked for help and instructed him to put more blocks on his ramp tower to increase the ramp's slope. In the first scenario, the father supports his son's autonomy by letting his son maintain control over the activity (even when the son asks for help) while, in the second scenario, he takes the son's autonomy away by controlling the experience.

2. Help them get to the next step

While parents support their child's autonomy, they can also take note of when their child needs a little more **help to get to the next step**. Scaffolding, or building the structure that enables children to move forward, is a fundamental way adults support children's learning (Vygotsky, 1978; see Mermelshtine, 2017 for a review) without taking over. Scaffolding is best when children are given intentional constraints that guide their efforts. Like bowling with bumpers, a well-scaffolded activity allows children to exercise agency within a structured setting that both considers what they can already do and supports them to get to the next level. Parents scaffold when they control parts of the task that are beyond what their child can do, which allows their child to focus on – and succeed in – what they are capable of independently (Wood, Bruner & Ross, 1976). They break down the task into manageable steps by noticing their child's limits and providing the stepping-stones needed to reach the desired goal. Parents gradually reduce and withdraw support, yielding to the child's initiative and skill

(Carr & Pike, 2012; Wood & Middleton, 1975), and 'filter and focus' the evidence that their children encounter while they explore (Crowley et al., 2001, p. 729). Children of parents who show appropriate scaffolding behaviours during a task tend to have higher cognitive abilities (Mulvaney et al., 2006), better effortful control (Neale & Whitebread, 2019), better reasoning skills (Stright, Herr & Neitzel, 2009), executive functioning (Hammond et al., 2012), and self-monitoring behaviours (Neitzel & Stright, 2003).

Tip: Support your children by asking them questions that have more than one answer (for example, 'What happened when you tried ___?'), thinking aloud (for example, 'Hmm, well we already know __, so we could try ___.') or drawing their attention to certain features of the task at hand (for example, 'Notice ___. How does that compare to ___?'). This type of support can also be accomplished through the environment, by presenting the child with progressively more difficult tasks once they have mastered the easier one.

3. Create a supportive environment

Parents help children succeed by **creating an environment** that minimizes distractions and inspires active engagement. The environment is a child's 'third teacher' (Strong-Wilson & Ellis, 2007). Positive outcomes from the Montessori approach, which includes an organized and predictable 'prepared environment', speak to the power of the environment to stimulate learning (Lillard, 2013). Analogously, chefs prepare a *mise en place* – prep the ingredients and tools before they start cooking – to guide the creation of a dish. Parents intentionally prepare a child's learning environment and provision the materials available to guide their child towards a learning goal (Weisberg et al., 2014). Curated environments of this sort exist in school classrooms (e.g., Higgins et al., 2005; Lillard, 2021), children's museums (e.g., Sobel & Jipson, 2016) and in built-in environments in cities (e.g., Bustamante et al., 2020; Hassinger-Das et al., 2021).

The quantity and quality of materials a child has access to is a large part of how a physical environment can promote active engagement and learning (Raikes et al., 2006; Rodriguez & Tamis-LeMonda, 2011; Rodriguez et al., 2009; Tomopulous et. al, 2006). Access to toys has been associated with positive outcomes and is often used as a measure for what makes a 'stimulating' home environment (e.g., Bradley, Caldwell & Rock, 1988; Dreyer, Mendelsohn & Tamis-LeMonda, 1996). A supportive environment, however, is more about the kinds of toys, programmes or

apps that are available than the sheer number of choices. Open-ended toys that allow for many different uses and manipulations (such as blocks) inspire active engagement and rich adult language (Verdine et al., 2014). Similarly, apps are engaging for children when they provide immediate feedback based on the child's actions, are open-ended, and have minimal distractions (such as sound effects, and animations that take a child off-task) (Hassinger-Das et al., 2020; Hirsh-Pasek et al., 2015; Meyer et al., 2021). In the case of electronic toys and books, features like sounds and lights may distract children from being fully and meaningfully engaged (Parish-Morris et al., 2013; Zosh et al., 2015). Other environmental factors, such as having a TV on in the background (Courage et al., 2010; Schmidt et al., 2008) or a parent who is distracted by their cell phone throughout the day (Gaudreau, Hirsh-Pasek & Golinkoff, 2021; Reed, Hirsh-Pasek & Golinkoff, 2017), also tend to constrain children's engagement and learning.

Tip: Just like chefs prep their food before cooking, prep your child's room or space before they start playing. Prioritize quality over quantity when thinking about what toys and materials to provide. Access to toys and materials that are open-ended (meaning your child can use them in different ways), matters more than the number of toys they have access to. Also, keep in mind that having background music or the TV on may also distract your child from learning.

Meaningful

Joyful

Socially interactive

Actively engaging

Meaningful

Iterative
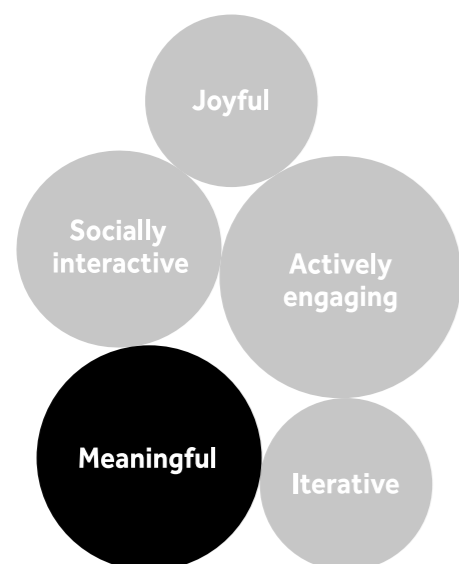
Deeper, more enduring learning happens when experiences and activities are meaningful for the child. That kind of learning allows information to be transferred to new situations and to 'stick' over time (Zosh et al., 2018). Meaningful learning can happen when content is made relevant to the child's life (Boaler, 2002; Dintersmith, 2018; Lee, 2007; Love, 2015), and when learning serves a purpose greater than just information recall (Istomina, 1977; Mistry, Rogoff & Herman, 2001). In recent years, there has been a movement to promote 'deeper learning' in

schools. Deeper learning, as defined by this movement, is meaningful because it is embedded in real-world situations or problems, making the experiences both authentic and interdisciplinary (Darling-Hammond et al., 2020; Mehta & Fine, 2019). Parents can promote deep, meaningful learning for their child by **building on their child's interests, letting their child join them in daily tasks**, and **building on their child's existing knowledge**.

4. Build on their interests

When parents **build on and expand their child's interests**, they create meaningful opportunities for their child to explore existing interests in a new way and deepen related learning (Ito et al., 2013; Takeuchi, Vaala & Ahn, 2019). Parents can build on and expand their child's interests by facilitating experiential learning related to their child's interests, providing relevant materials, and by encouraging related projects and activities (Barron, 2006; Crowley & Jacobs, 2002; Dunst, 2020; Takeuchi, Vaala & Ahn, 2019). Time for exploration, particularly through leisure activities, is key for interest development (Hofer, 2010). Thus, parents can take care to avoid overemphasizing structured and/or competitive activities related to their child's interests, at the risk of limiting self-directed and open-ended learning (Ito et al., 2013).

The experience of interest-based learning has both short- and long-term benefits for children (Hidi & Renninger, 2020; Renninger & Hidi, 2017). In the short term, children have better attention, are more engaged, show more positive affect, and are better able to consolidate information during meaningful interest-based learning experiences than those that are not connected to their interests (Renninger & Hidi, 2017). The accumulation of multiple and repetitive interest-based learning experiences has the potential to inspire a child's future education and career path in the long term (Darling-Hammond et al., 2020).

Tip: *Support your child's interest development by providing relevant materials, encouraging related projects and taking them to virtual or in-person events connected to their interests.*
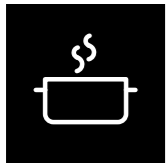
5. Let them join in daily tasks

Everyday experiences like sorting laundry, preparing dinner, and getting ready for school all provide rich opportunities for meaningful learning (Alcalá et al., 2014; Rogoff, 2003; Vandermaas-Peeler et al., 2018). Parents can **allow children join them in daily tasks** and highlight relevant knowledge and skills along the way. Children across cultures are motivated to learn knowledge and skills relevant to their family and community (Gaskins & Paradise, 2010; Rogoff, 1990, 2003). In the words of psychologist and philosopher Alison Gopnik, parents do not have to 'do special things' to teach their children relevant skills (2016, p. 112). Rather, they can 'slow down and exaggerate their own actions' and make it 'easy for their children to join in' (p. 111).

Studies find that incorporation of learning into day-to-day tasks can make a difference to how children perform academically (Colliv-er, Arguel & Parrila, 2021; LeFevre et al., 2009; Vandermaas-Peeler et al., 2018). For example, LeFevre and colleagues (2009) found a robust relation between how often children participated in informal activities with quantitative components (such as cooking and shopping) and their mathematical proficiency. Beyond academic performance, when children are purposefully involved in everyday family and community tasks, they build their *funds of knowledge*; the skills and knowledge that are particularly meaningful to their household and their culture (González, Moll & Amanti, 2006).

Tip: *Involve your child in routines like cooking, cleaning, shopping, sorting mail and taking out the rubbish. Slow down and narrate your actions and invite your child to help you in a way that meets their ability, gives choice and builds a sense of purpose.*

Imagine a father and his four-year-old daughter baking cookies from their family recipe. There is much meaningful learning to happen for his daughter in this seemingly normal task! The father helps his daughter develop concepts of print when he demonstrates how he reads the recipe from right to left to find out what ingredients they need. He supports her autonomy and confidence when he invites her to try different styles of chocolate chips and choose which ones she would like to use. Then, he supports her understanding of one-to-one correspondence when they count as they put cups of chocolate chips one-by-one into the mixing bowl. She develops her executive function skills as she learns how to follow the steps of a complex sequence and control her urge to put 'just one more' scoop of chocolate chips in the bowl! Throughout the experience, she is learning how she can contribute to a special family tradition.

6. Build on existing knowledge

Parents, experts in their child's previous experiences, can help children make meaning by **building on existing knowledge**. They do this by noting how a new experience relates to something that the child or family has already encountered (Zimmerman & McClain, 2014), by asking prompting questions to get their child to make these connections themselves (Callanan et al., 2017), and by using comparisons between what a child already understands and new information (Valle & Callanan, 2006). Analogies are a powerful vehicle for learning, particularly for learning abstract concepts (Gentner et al., 2015; Gentner, Loewenstein & Thompson, 2003; Jee et al., 2010). In fact, 7-to-12-year-old children were able to learn about evolution by natural selection - a complex topic often not taught until high school - after they engaged in an analogy-based tutorial session (Shtulman, Neal & Lindquist, 2016). When parents make analogies and help their child see relevant connections, their child tends to show more engagement, understanding, and retention of new knowledge than when parents simply explain something to them without any connections (Callanan et al., 2017; Jant et al., 2014).

Tip: *Help your child make connections between what they already know and something new by asking your child questions to guide them to make these connections for themselves (for example, "What does this remind you of?"), by modelling making these connections yourself (for example, "This reminds me of when we...", and by using comparisons between what they already understand and new information (for example, "This is a lot like ___ because___.").*
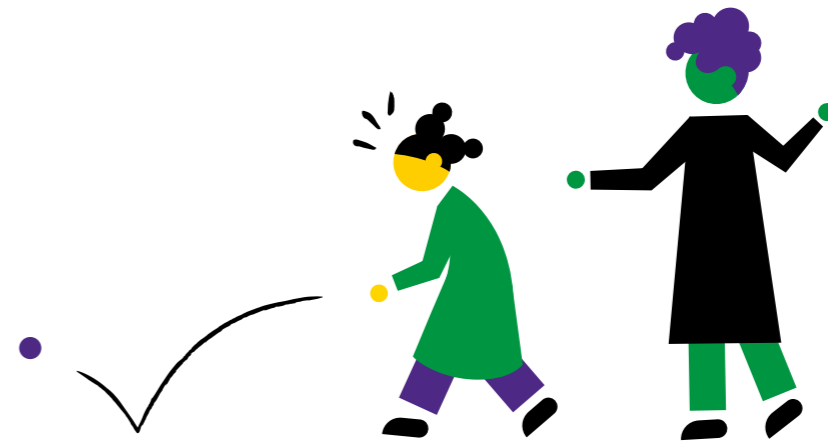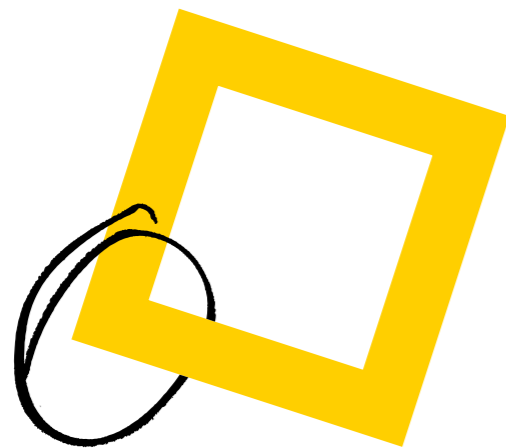
A mother and her daughter visit a pond to skip rocks. One day, the daughter picks up a rock and throws it into the pond. To her surprise, the rock bounces off the pond – it had frozen overnight! Her mother helps her make sense of this by connecting the ice on the pond to how they freeze water to make ice cubes at home. This connection helps her daughter understand how freezing temperatures can change the properties of water to turn it into ice.

Socially interactive

Joyful

Socially interactive

Actively engaging

Meaningful

Iterative
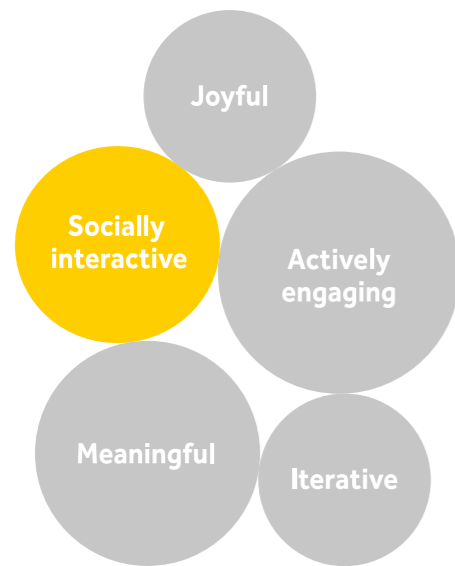
Humans have a socially gated brain such that we best process all information we learn through social interaction (Kuhl, 2007; Meltzoff & Kuhl, 2016). It is interaction with a more advanced peer or adult that enables children to operate in what Vygotsky (1978) called the zone of proximal development, in which they can move from needing adult scaffolding to operating at a new level of thinking on their own. Learning alongside others is key to the development of essential 21st-century skills like collaboration, communication and critical thinking, and the

support of a social partner helps build a stronger understanding of content (Chi, 2009; Golinkoff & Hirsh-Pasek, 2016; Hirsh-Pasek et al., 2020, 2022). Parents are a child's first, and often most important, social partner. Thus, parents have a significant opportunity to empower their child's learning through play as their **collaborative partner** and by **engaging in two-way conversations** with their child. Parents can **share activities with their child** as vehicles for positive social interactions and playful learning.

Note: The 15 approaches relate to how parents can support the five characteristics of learning through play in their own interactions with their child, so they do not address how parents can nurture social interaction between their child and other children. But being a playful parent doesn't mean you always have to be the one engaging with your child. Children need social interaction with other children outside of school, and the frequency of playdates is associated with higher levels of social competence in preschool children (Ladd & Hart, 1992). You can also foster learning through play by creating space and opportunities for your child to interact and play with other children.

7. Be a collaborative partner

Parents can be their child's **collaborative partner** in playful learning at all ages. This back-and-forth social engagement begins as early as infancy. The well-timed and emotionally matched exchanges between parents and babies create a foundation for later learning (Masek et al., 2021; Piazza et al., 2020). As children get older, parents and children collaborate during playful learning when they work together to set goals and contribute equally to finding a solution (Sobel et al., 2021). To act as a collaborative partner while still scaffolding towards a learning goal for their child, parents pose thought-provoking questions, note that children are missing information, and make gentle suggestions (Callanan et al., 2020; Medina & Sobel, 2020).

Several studies find that children with parents who were more collaborative during tasks (like playing with electric circuits and gears) at museums were more engaged in the task and explored more systematically than children whose parents took a directive approach (Callanan et al., 2020; Medina & Sobel, 2020; Sobel et al., 2021). When parents collaborate with their child, they model how to be curious and creative explorers (Callanan et al., 2020).

Tip: To promote learning without giving the answer, use prompting phrases and questions that start with 'I wonder…', 'What if…?', 'What do you think about…?', 'When ___ happened, it made me think about__.'

8. Engage in two-way conversation

A strong research base supports the significance of socially contingent parent–child conversation; specifically back-and-forth, or **two-way, conversation** (Hirsh-Pasek, Alper & Golinkoff, 2018; Suskind, 2015). Put simply, talking *with* rather than talking *at* children is critical to how much children learn from an experience (Roseberry, Hirsh-Pasek & Golinkoff, 2014). David Dickinson, a research professor from Vanderbilt University, suggests that parents should 'strive for five' conversational turns to keep the interaction going. The key to reaching that goal is using *open-ended* questions – those questions that spark conversation rather than asking for the one right answer. These types of questions influence how much a child learns and remembers from an experience (Hedrick et al., 2009; Yu, Bonawitz & Shafto, 2019) and have been linked to positive vocabulary outcomes (Blewitt et al., 2009) and STEM learning (Haden et al., 2014). Notably, it is not the frequency of questions that makes the difference, but rather how contingent the questions are to the child's own talk or exploration. This means that parents can pose questions to elaborate on their child's thinking, encourage their child to generate explanations, call attention to relevant aspects of the experience, and stimulate more back-and-forth conversation, rather than to test their child's knowledge (Benjamin, Haden & Wilkerson, 2010; Callanan et al., 2020, 2017; Eason et al., 2021; Hedrick et al., 2009; Jant et al., 2014; Vandermaas-Peeler, Massey & Kendall, 2016; Willard et al., 2019).

Tip: *Take conversational turns with your child. Ask your child questions that spark meaningful back-and-forth conversation, rather than simple yes-or-no questions.*
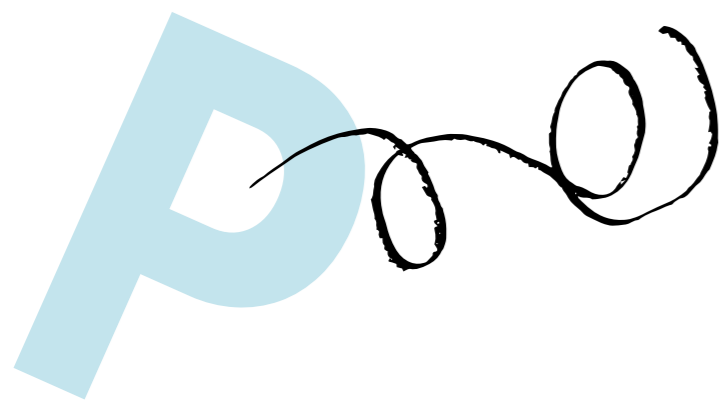
Imagine a mother and daughter walking to the supermarket through the park. The daughter has recently been learning about shadows at school. As they walk, the mother models curiosity as she moves her body in different ways to experiment with her shadow. She asks her daughter what she notices. Then, rather than point out other shadows to her daughter, she says, 'We can see both of our shadows today! Hmm… I wonder what else has a shadow,' and they engage in a rich two-way discussion as they 'hunt' for other shadows, and compare them (eg., 'Why is that tree's shadow bigger than the other tree's shadow?'), along their walk. The following week they walk through the park again, but on a cloudy day. The mother acts surprised and asks her daughter, 'Where did our shadows go?' These open-ended questions are the springboard for engaging two-way conversation.

9. Share activities that promote social interaction

There are plenty of activities that can be done solo. Yet, parents can engage in a plethora of **activities that promote positive interaction** and learning with their child. Games (see Hassinger-Das et al., 2017 for a review; Bjorklund, Hubertz & Reubens, 2004; Huang, Sun & Tang, 2021; Ramani et al., 2015;), puzzles (Clegg et al., 2021), and blocks (Christakis, Zimmerman, & Garrison, 2007; Ferrara et al., 2011) help facilitate meaningful dialogue while also providing the context for parents to support their child's learning (Verdine et al., 2014).

In contrast, some electronic games and toys impede meaningful parent–child interaction. Certain features of electronic toys and books, such as noises, lights and extraneous activities, tend to hinder parent–child talk and interaction (Miller et al., 2017; Parish-Morris et al., 2013). Parents tend to use richer language and show more scaffolding behaviours when they engage in traditional games and toys, rather than electronic ones, with their child (Schnieders & Schuh, 2022; Sosa, 2016; Zosh et al., 2015). This does not mean that parents must avoid electronic toys and games altogether. Rather, parents should be aware that there is a risk of letting the electronics 'do the talking for them,' as electronic toys and games do not inspire back-and-forth talk as naturally as traditional toys and games (Sosa, 2016, p. 136).

Tip: Traditional toys, like blocks, tend to inspire more meaningful back-and-forth talk between parents and their child than electronic toys do. This certainly does not mean you should avoid electronic toys altogether! Just take care not to let talking toys reduce chances for positive interaction between you and your child. Interaction with a responsive electronic toy is not a substitute for positive interaction with a responsive human.

Iterative

- Joyful
- Socially interactive
- Actively engaging
- Meaningful
- **Iterative**
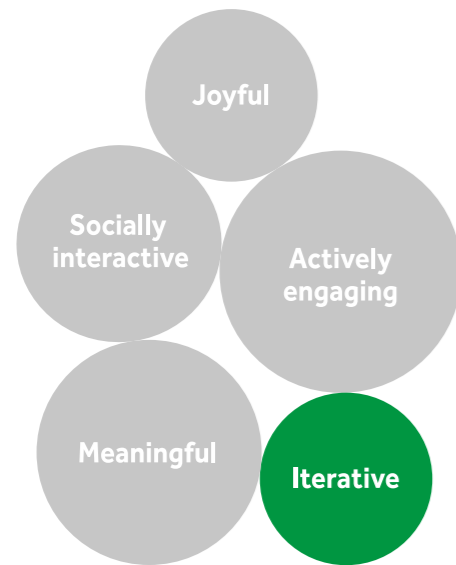
Iteration reflects the idea that learning itself is a scientific process. Children are natural scientists (e.g., Gopnik, Meltzoff, & Kuhl, 2001; Gopnik & Wellman, 2012; Piaget, 1945), and 'young brains are designed to explore' (Gopnik, 2016, p.35). With iteration, children *build on* their learning with each new engagement in the activity, which distinguishes it from repetition (Zosh et al., 2017). Iteration is more like playing jazz than playing a prescribed and well-rehearsed piano piece. Jazz is about taking a theme and riffing on it to explore and expand the possible patterns that can emerge. Just like jazz, learning occurs

through the process of experimenting with different possibilities, testing hypotheses, and asking, discovering, and exploring questions that arise to get closer to a solution. When children engage in these processes, they build their creativity, critical thinking, and problem-solving behaviours (Golinkoff & Hirsh-Pasek, 2016; Hirsh-Pasek et al., 2020; Hirsh-Pasek et al., 2022). Parents can support their child's iteration by **embracing ambiguity and uncertainty, encouraging persistence** and **focusing on the process over the product**.

10. Embrace ambiguity and uncertainty

Parents can **embrace ambiguity and uncertainty** while their children engage in a task by staying open to different solutions, rather than focusing on the 'right answer.' Children need uncertainty, a gap in understanding, to drive their curiosity and exploration (Jirout & Klahr, 2012). Children are more likely to systematically explore and try different solutions if they don't have all the evidence or are presented with ambiguous evidence (Bonawitz et al., 2012; Cook, Goodman & Schulz, 2011; Gweon & Schulz, 2008; Legare, Gelman & Wellman, 2010; Schulz & Bonawitz, 2007; Stahl & Feigenson, 2015). Bonawitz and colleagues (2011) found that when an adult provided a demonstration of 'how a toy worked' before children had a chance to explore it themselves, the children explored the toy less and discovered fewer toy functions than when the adult gave children the chance to explore it themselves first.

Parents can model exploration and question-asking as positive responses to uncertainty (Evans, Todaro et al., 2022) and mistakes. The importance of the opportunity to make, and learn from, mistakes is supported by a large research base (Denervaud et al., 2020; Kapur, 2008; see Metcalfe, 2017 for a review) and exploratory behaviours are tied to creativity (Evans et al., 2021). So, parents can rest assured that it is okay (and even beneficial!) if their child does not get it right the first time.

Tip: Be patient when your child makes mistakes. Encourage them to continue testing and trying out their ideas and model question-asking and reflection as appropriate responses to uncertainty.
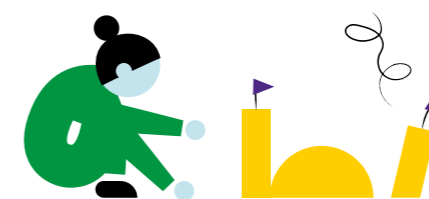
12. Praise the process

To persist and continue iterating in the face of failure, a child must see failed attempts as something to improve upon, rather than representative of their abilities (Haimovitz & Dweck, 2016). Parents can support their children to have this growth mindset by using **process praise**. Extensive research done by Dweck and her colleagues (Dweck, 1998, 2006; Gunderson et al., 2013; Mueller & Dweck, 1998) finds that when an adult praises a child's intelligence, rather than their effort, the child tends to avoid future risk-taking to save face. When children are praised for their hard work (e.g., 'I notice that you are trying out different things!') their growth mindset is cultivated, and they tend to be more engaged and self-motivated during challenging tasks (Gunderson et al., 2013). This is even true for the youngest learners. Lucca, Horton and Sommerville (2019) note that 18-month-olds who had parents who used process praise (praising effort or thinking; eg., 'I noticed that you tried to put that piece on top of this one. That was a great try!') over person praise (praise for a fixed trait; eg., 'You're so smart!') and generic praise (praise that did not fit in the other categories; eg., 'Yay!', 'Good!') during a gear stacking task were not only more likely to persist during the task itself, but also during a separate task where parents were uninvolved.

Tip: *Praise your child's effort (for example, say, 'I noticed that you tried to put that piece on top of this one. That was a great try!'), rather than compliment fixed traits (such as saying, 'You're so smart!') or giving general positive feedback (like, 'Yay! Good job!').*

11. Encourage persistence

Inherent in the iterative process is **persistence** – in the face of ambiguity and failed attempts, one must persist and try, try again! To persist, children need grit – what psychologist Angela Duckworth defines as having passion, perseverance, and stamina (Duckworth et al., 2007, 2019). Parents nurture grit when they help their child to see what they can do during a task and leave room for their child to improve. Children are more persistent when they are autonomous or gently guided in their attempts than when an adult takes over for them (Leonard et al., 2021). Self-explanation, rather than explanation from an adult, also inspires a child's persistence (Callanan et al., 2020), so parents can first ask their child to reflect on their at-tempts, rather than tell them why something is or is not working. Parents can acknowledge the difficulty of the task but reassure their child that they can improve with practice (eg., 'This might be hard now, but it will get easier with practice'; Autin & Croizet, 2012; Haimovitz & Dweck, 2016; Leonard, Garcia & Schulz, 2020).

Tip: *When your child is struggling with a task, avoid giving them the solution right away. Rather, reassure them that new things are hard at first, but they get easier with practice. Support them by encouraging them to think about why what they've tried so far hasn't worked and to keep trying different solutions using what they know.*

Imagine a child trying to build a sandcastle at the beach. She gets frustrated when the waves keep knocking her castle down. "This is too hard!" she shouts to her father, sitting nearby. Her father responds, "This is hard, and I see you working hard and trying different things to figure out how to keep your castle safe from the waves. Let's talk through what you've tried so far to help us figure this out." When the daughter successfully keeps her castle safe from the waves by constructing it further away from the shoreline and building a moat, the father says, "Wow you worked really hard to keep your castle safe from the waves by moving away from the shoreline and making a moat, even though it was challenging," rather than, "You are so smart, I knew you could do it," or "Good Job!"

Joyful

Joyful

Socially interactive

Actively engaging

Meaningful

Iterative
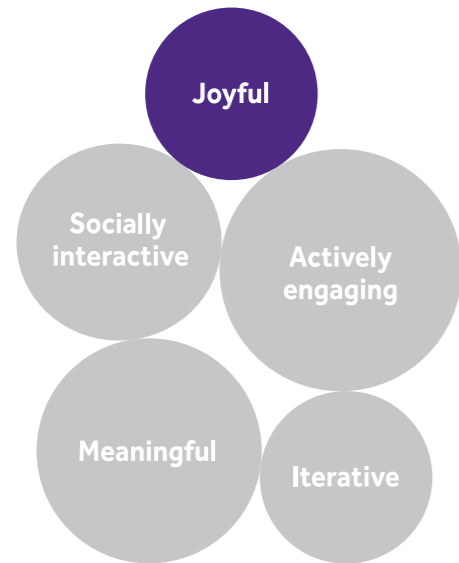
Parents play an important role in bringing joy into their child's daily life. The power of joy goes beyond that of a cherished emotion. Neuroscientists find that positive affect and surprise are related to learning (Betzel et al., 2017). In fact, research connects feelings of joy to memory, attention, creativity, motivation, and executive function (Cools, Nakamura & Daw, 2011; Dang et al., 2012; Diamond, 2012). Promoting a sense of joy in the context of a learning experience helps make the learning goal 'sticky,' ensuring that children build deep, enduring knowledge. So, what can parents do to maximize joy in their child's life? They can **share positive emotions, find the fun in problem-solving**, and **share interests and leisure activities**.

13. Share positive emotions

'Emotions are contagious' is an adage we all know to be true. The research supports a bi-directional relationship between parent and child emotions, meaning that parents and children can 'catch' each other's emotions (Bai, Repetti & Sperling, 2016; Kokkinaki et al., 2017; Tronick, 1989). From infancy, children observe and copy the emotions of their parents*, who encourage and extend the positive emotional responses of their child (Morris et al., 2007). For joy in particular, Barry and Kochanska (2010) find that the expression of joy in a parent predicts the expression of joy in their child and vice versa. Experiences of **shared positive emotions** between child and parent have ripple effects on a child's socioemotional development. In fact, parent–child experience of joint positive emotions is associated with less aggressive behaviour in the child (Lunkenheimer et al., 2020) and the child's positive social functioning (Eisenberg et al., 2003) years later. Parents and children tend to have a lower positive affect when parents are heavily involved in their child's learning (Schmidt et al., 2021) and homework (Pomerantz, Wang & Ng, 2005), suggesting that child autonomy not only promotes the positive outcomes noted in the first approach, but also a family's positive emotional climate.

Tip: Don't hold back expressing positive feelings with your child – share smiles and laughs whenever you can! And don't forget to model voicing feelings, so that children can learn to do name emotions.

*We focus on one emotion – joy – in this report as joy is a characteristic of learning through play. However, this does not mean you should hide more difficult emotions like frustration, sadness or fear from your children! Children need to learn that all emotions are valid and need opportunities to watch parents model how to appropriately manage all emotions – including difficult ones (Eisenberg et al., 1998; Morris et al., 2017). When parents help their child label emotions and cope with big feelings, their child builds strong social and emotional skills and is more likely to show prosocial behaviour (Garner et al., 2008). The reality of life is that some days go by without much joy. On those days you can discuss how you are feeling and explain how you will cope to your child. For example, 'I am feeling sad because I miss Grandma today and wish she was here. To help me feel better, I am going to look at some photographs of us together. Do you want to look at the photos with me?'

14. Find the fun

When we say **find the fun**, we mean that parents can use humour, flexibility and creativity as an approach to problem-solving and learning. Parents provide their children with emotional socialization through modeling, so when parents respond to problems with a playful and creative attitude, children can learn positive coping techniques (Eisenberg, Cumberland & Spinrad, 1998). Parents and children tend to experience more thoughtful back-and-forth conversations and more overall positive behaviours when parents have a playful attitude (Menashe-Grinberg & Atzaba-Poria, 2017; Waldman-Levi, Finzi-Dottan & Cope, 2020). A playful approach to parenting is positively associated with emotional regulation ability and adaptability for both parents and children (Shen, Chick & Pitas, 2017; Shorer et al., 2021).

Tip: Use humour, flexibility and/or creativity when you and your children run into minor challenges and frustrations. Did you and the kids make a mess? Turn on a stopwatch and see how quickly you can all clean up! Is the playground closed today? Create an obstacle course in the yard or living room with things around the house! Forget to buy an ingredient needed for dinner? Brainstorm what else may be a good substitute to create a new recipe!

Imagine a child who is learning the getting-ready-for-school routine. When he can't find his folder and lunchbox to put in his bag, he gets frustrated, plops down on the floor, and tells his mother he doesn't want to go to school anymore. His mother joins him on the floor and patiently says, "I know you are frustrated. I feel frustrated when I can't find things I need, too. Something I like to do when this happens is to take a deep breath and, when I feel ready, I turn finding what is lost into a game. Do you want to try?" He nods and they take a deep breath together. Then, his mother whispers in a silly voice explaining that they are on a secret 'Get Ready for School' mission, sets a timer for them, and they zoom around the house to find the missing items. They shout, 'Mission complete!' after they put all the school supplies in the son's bag. Here the mother models how to use fun and flexibility as an approach to solving a problem.

15. Share interests and leisure activities

When parents and children **share interests and leisure activities**, they also share the positive emotions promoted by unstructured, low-stress, and enjoyable activities (Bai et al., 2016). In infancy, a fun joint leisure activity may take the form of a game of peek-a-boo (Fernald & O'Neill, 1993; Parrott & Gleitman, 1989). As children grow, parents and children can share joy in a variety of activities like music, dance, games, art, and unstructured sport play (Bai et al., 2016; Ginsburg, 2007). Activities like these not only bring joy and pride, but they also challenge and improve executive functions (Diamond, 2012). To quote developmental cognitive neuroscientist Adele Diamond, 'When we love what we are doing, we have far more energy and can get far more done' (2014, p. 9). It makes sense, then, that sharing interests and leisure activities with a parent is associated with indicators of child and adolescent well-being (Coyl-Shepherd & Hanlon, 2013; Offer, 2013), as well as parent and child satisfaction with family life (Agate et al., 2009).

Tip: Share unstructured activities that promote joy for both you and your child. When your child is a baby, this may look like a fun game of peek-a-boo. As your child gets older, you can share activities like music, dance, games, art or unstructured sport play...really anything you and your child enjoy!
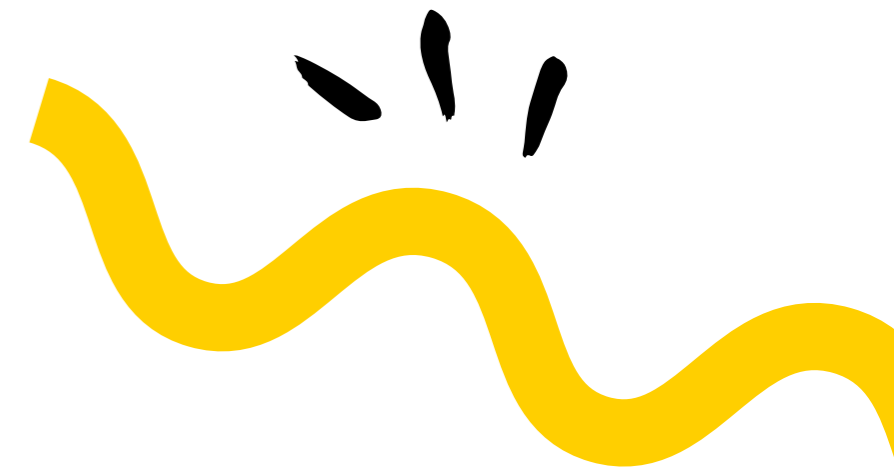
How to support parents to engage their children in playful learning

How can we help parents embody these messages to bring about playful learning in daily life with their child? To answer this question, we consider how parent-facing programmes can frame the **content** shared in this paper, honour the unique and culturally varied **context** of families, and identify key **conduits** for sharing playful learning research and resources with parents.
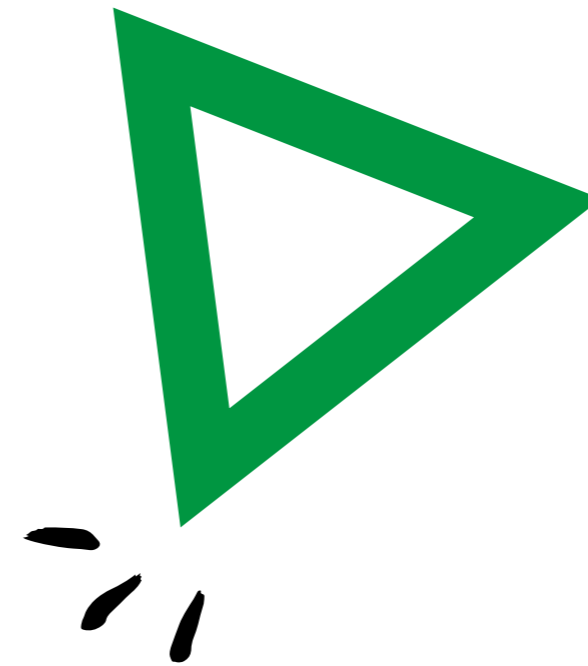
What do parents already know and believe?
Parent beliefs shape parent behaviours (Hoover-Dempsey & Sandler, 1997; Sigel, 1985; Sigel & McGillicuddy-De Lisi, 2002; Simpkins, Fredricks & Eccles, 2012). When framing the content shared in this paper with parents, start by considering parent beliefs regarding their role in their child's learning, how play connects to learning, and whether they believe they can be successful. These beliefs are foundational to how parents will be empowered to engage in playful learning with their child.

1   **Parents can believe they have an important role in their child's learning and development.** There is a strong association between parent beliefs about their role in their child's learning and their involvement in their child's learning (Hoover-Dempsey, Walker & Sandler, 2005; List, Pernaudet & Suskind, 2021; Weigel, Martin & Bennett, 2006).

2   **Parents can appreciate the power of play.** Parent beliefs related to how play connects to learning will determine how they engage their children in play (Fisher et al., 2008; Haight, Parke & Black, 1997; Ihmeideh, 2019; LaForett & Mendez, 2017b; Lin & Li, 2018; Manz & Bracaliello, 2016; Parmar, Harkness & Super, 2004; Roopnarine & Jin, 2012).

3   **Parents can have self-efficacy.** When parents have self-efficacy, they believe they have the skills and knowledge needed to help their child, and that they know where they can access information and resources (Ardelt & Eccles, 2001; Bandura, 1997; Hoover-Dempsey & Sandler, 1997).

What can inspire a shift in mindset?
Parents who hold these beliefs can be empowered to engage their child in playful learning. We can support parents to develop understanding and self-efficacy by providing insight on the connection to science, elucidating what we mean by playful learning, drawing connections between playful learning and personally meaningfully outcomes, and showing parents they can be successful.

1 **Connect content to science.** Parents are more likely to trust parenting information that is rooted in scientific research and presented with authority (Kinsner et al., 2018; List, Pernaudet & Suskind, 2021; Wilton et al., 2017). List, Pernaudet, and Suskind (2021) found when parenting advice was connected to the science of child development, children demonstrated improved vocabulary as well as a breadth of skills.

2 **Make definitions clear.** Play is notoriously hard to define (e.g., Bergen, 1988; Sutton-Smith, 1997) which leaves us with widely varied parental views of play (Fisher et al., 2008; LaForett & Mendez, 2017b; Lin & Li, 2018). By helping parents see the power of the five characteristics and their overlap with the science of how children learn (Hirsh-Pasek et al., 2020; Zosh et al., 2017, 2018), play becomes more than a four-letter word and playful learning becomes a possibility.

3 **Connect playful learning to parent and child outcomes.** All parents want to do what is best for their child. Let's offer parents the evidence that illustrates how playful learning promotes positive outcomes across a breadth of skills.

a *Child outcomes:* Research finds that playful learning fosters the transferable skills – collaboration, communication, content, critical thinking, creative innovation, and confidence (termed the 6Cs by Golinkoff & Hirsh-Pasek, 2016) – that researchers, educators, and employers say are crucial for success in the 21st century (Golinkoff & Hirsh-Pasek, 2016; Hirsh-Pasek et al., 2020; Darling-Hammond et al., 2020). To help inspire new ways of thinking, parents can be presented with evidence that normative teaching and learning methods (e.g., rote learning, direct instruction) are not always in alignment with goals for their child (Meadows, 1999; Winthrop et al., 2021).

b *Parent outcomes:* During such a stressful time for parents, it must be clear to parents that playful learning is not only beneficial for their child, but also for them. Play naturally promotes positive parent–child interaction and helps build a strong parent–child bond (Milteer et al., 2012). Parents around the world report that playing with their child makes them feel more energized, creative and relaxed, as well as closer to their child (LEGO, 2018). It is no surprise that parent–child play can lead to reductions in parent stress (Cates et al., 2016; Weisleder et al., 2019).

4 **Show parents that they can be successful.** Parents need to see and feel the ways in which playful learning can be naturally integrated into their daily routines. Playful learning should not add responsibility for the parent. It requires no manuals or books, just consciousness as parents change the lens on everyday behaviours. Parents can be supported to identify and create conscious playful learning interactions throughout their day that help them feel successful.

Systemic barriers to playful learning
Even if parents have beliefs inspiring them to support their child's play, certain systemic and structural factors can be barriers to parent engagement in learning through play. When families struggle to make ends meet, time for parents and children to play or even be together is a precious commodity (Milteer et al., 2012). Families around the world report that they are 'time poor' and that work and busy lifestyles are the top factors that prevent them from playing with their child (LEGO, 2018). Although beyond the scope of this report, we recognize that to fully empower all parents to engage their child in learning through play would take wide-scale comprehensive solutions to address structural inequities, including supportive family policies, such as sufficient paid family and medical leave (Waldfogel et al., 2019), child benefits like cash transfers (Gennetian et al., 2021), and adequate living wages (Hill & Romich, 2018). Furthermore, neighbourhood safety and the accessibility of playful community spaces can be challenge to outdoor and physical play (Coyl-Shepherd & Hanlon, 2013; Faulkner et al., 2015; Milteer et al., 2012). The reality is families face a variety of challenges that may influence how much time and energy parents have to interact with their child. This challenge presents yet another reason why we must make the research and related resources as accessible as possible to all parents, including helping parents see natural ways to integrate joy and learning into their normal daily routines.

Honouring the context

Context and culture shapes how parents parent. Parent beliefs and behaviours, as well as their access to resources, are all shaped by their unique context and culture (Belsky, 1984; Harkness et al., 2013; Rogoff, 2003; Whitebread & Basilo, 2013). It is crucial to understand how context and culture shape parent engagement in playful learning so programmes can build on parents' funds of knowledge.

Parents are powerful partners. The nuances of playful learning across contexts and culture must be well understood and honoured. When parents are partners, not clients (Winthrop et al., 2021), these nuances can be better appreciated and diverse ways of knowing, teaching and learning can be elevated.

1. **Focus groups, interviews, interactive media campaigns and surveys** can elucidate what playful learning means, and how it manifests, for families in varied cultural contexts. The science will come to life for parents when it is framed in such a way that they can see themselves, and their children, in the examples. The play spectrum, five characteristics and 15 research-backed approaches presented in this paper are the foundation for how parents can engage their child in playful learning, but real examples from parents should be the building blocks.

2. **A network of parent champions for playful learning can be built.** Parents learn from other parents – whether it be from a 'mommy blog', play group or a casual chat with a friend. Thus, parents are powerful messengers to other parents (Day et al., 2012; O'Neil, Volmert & Gerstein Pineau, 2019; see Abriendo Puertas/Opening Doors). 'Word of mouth parent advocacy' is influential (Sanders & Mazzucchelli, 2022, p. 10). Parent champions for playful learning can be spokespeople who inspire a movement for playful learning in their communities. They can also be a bridge to help programmes and initiatives continually strengthen their understanding of how parents can be supported.

3. **Projects can collaborate with parents to embed playful learning in places and spaces in their communities.** Initiatives like Playful Learning Landscapes Action Network (PLLAN) collaborate with parents and community leaders to transform everyday places in their communities into enriching, social spaces that promote playful learning. These initiatives are examples of how to take parent engagement in playful learning to the next level. Parents who are actively engaged in the creation of playful learning infrastructure in their community learn about the principles of playful learning while they make their worlds more meaningful for their family. Parents develop self-efficacy as they come to understand that playful learning can happen in the places they visit every day like grocery stores (Ridge et al., 2015), libraries (Hassinger-Das et al., 2020a), and even at bus stops (Hassinger-Das et al., 2020b).

Identifying key conduits

Parents get parenting advice and resources in a variety of ways. Whether it be from a friend, a grandparent or an expert, through a casual conversation or a web search, parents turn to different people and places for help with parenting. Parenting interventions involving multiple entry points have a greater chance of achieving a wider reach and greater uptake (Prinz & Sanders, 2007). A number of conduits can be considered to promote accessibility and the inclusion of all parents.

1   **Involve everyday places and spaces.** Playful learning initiatives situated in everyday places like libraries (Hassinger-Das et al., 2020a), laundromats (Neuman, Portillo & Celano, 2020), supermarkets (Hanner et al., 2019; Ridge et al., 2015), food pantries (Shivaram et al., 2021), and bus stops (Hassinger-Das et al., 2020b) all see positive parent–child engagement and results. Resources and opportunities for playful learning are more accessible and there is greater potential to include all parents when playful learning is embedded in the places that parents and children already visit (Schlesinger et al., 2020).

2   **Partner with people in the community who are trusted messengers.** Trust is a key component of successful parent engagement initiatives (Mapp & Bergman, 2021; Winthrop et al., 2021). Parents across demographics deeply trust their health care providers (Kinsner et al., 2018). Well-child visits to the pediatrician are routine and nearly universal, so they offer a way to deliver parenting support that is accessible and free from stigma (Mendelsohn et al., 2005; Shah et al., 2019). There are many examples of successful parenting interventions using paediatricians and other health care providers as conduits (Cates et al., 2016; Johnston et al., 2004; Shah et al., 2019; see Peacock-Chambers, Ivy & Bair-Merritt, 2017, for a review). Parents tend

to also look to their child's teacher for advice and support, particularly in early childhood (Adams & Christenson, 2000; Kinsner et al., 2018). Religious leaders can serve as effective messengers to parents because they are trusted by their congregants and they interact with families on a regular basis (Kinsner et al., 2018).

3   **Leverage media and technology.** Media and mobile technology can be an efficient, cost-effective and non-stigmatizing way to reach a substantial number of parents, particularly those parents who may not otherwise receive parenting support (Sanders et al., 2021; Sanders & Prinz, 2008). There is a dearth of studies that have analysed mass media campaigns that target parents; however, there are several examples of mass media campaigns that successfully addressed public health and safety challenges (Elder et al., 2004; Wakefield, Loken & Hornik, 2010). When advice is successfully shared over mass media, the targeted behaviours become more normative, and when behaviours become normative, mindsets are more likely to shift, and population-level change is more likely to happen (Sanders & Mazzucchelli, 2022). Modern parents often rely on their mobile device to share and receive information (Pew Research Center, 2021), so phone-based media such as social media and texting can be particularly powerful conduits. Parents are heavily involved in social media (Duggan et al., 2015; Lupton, Pedersen & Thomas, 2016) and several organizations have successfully used apps (Irvin et al., 2020) and texting (York, Loeb & Doss, 2019; Galinsky et al., 2017) to reach parents with parenting information and support.

A note about close ties and social networks

Parents turn to their social networks – other parents, close friends and relatives – for parenting advice (Kinsner et al., 2018; McCatharn et al., 2021; Simons et al., 2021; Takeuchi, Vaala & Ahn, 2019), so it is important to consider how to share this research widely, not just with parents. In fact, among the top five sources of parenting information are immediate family members, friends, and extended family (Kinsner et al., 2018). Parents with less education, in particular, are more likely to be influenced by closer ties (Winthrop et al., 2021). Social psychologists find that interpersonal networks play a large role in determining whether a person adopts a particular innovation (Burn, 1991; Darley & Beniger, 1981). Kinsner and colleagues (2018) urge those involved in parent engagement initiatives to message to extended family, particularly grandparents, as this is where many parents turn for parenting information.
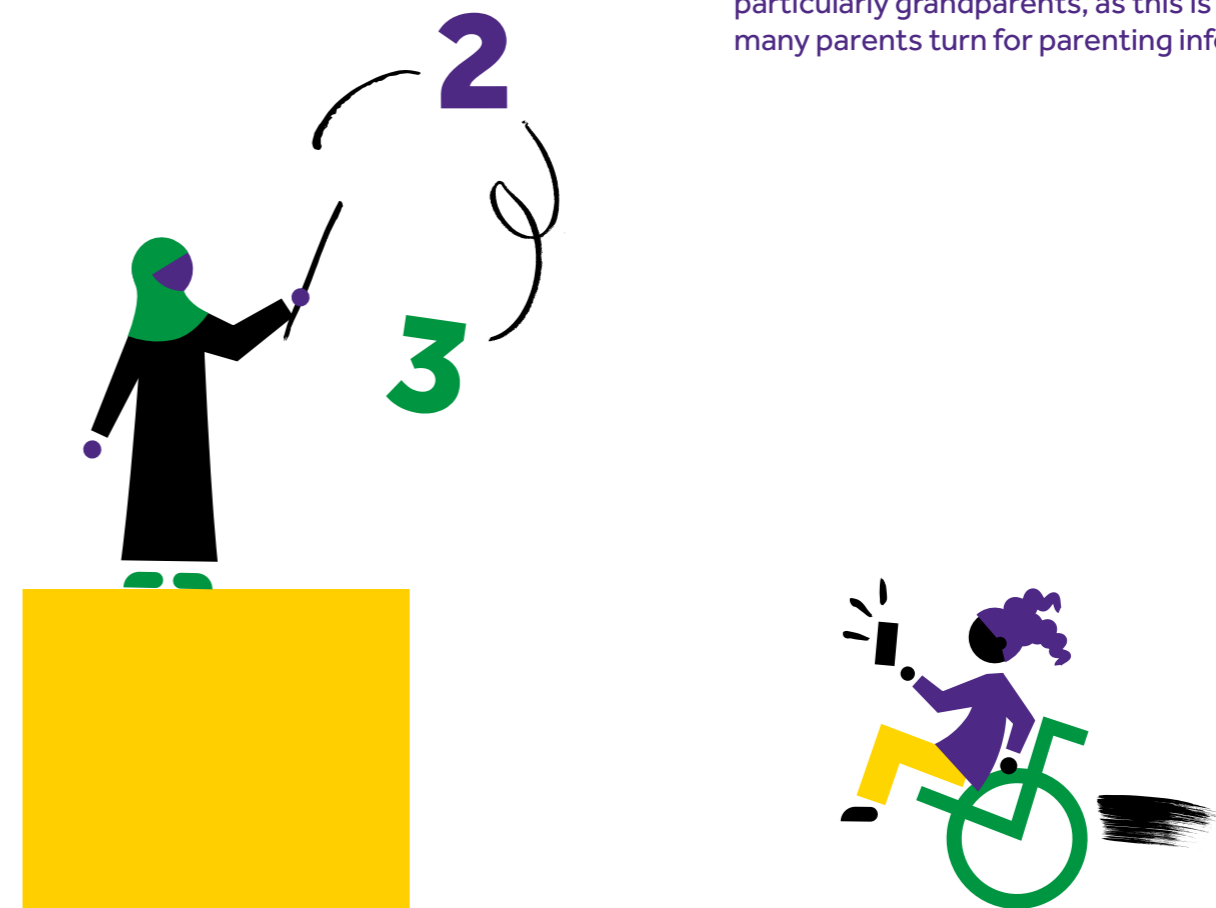
Future research directions

Parenting and playful learning in different cultures and contexts

More research needs to be done to uncover the ways in which culture and context shape how parents engage their children in learning and play. Cross-cultural examples and evidence should be collected to discover how playful learning comes to life across diverse contexts.

- *How do parents engage with their children in learning and play across diverse contexts and cultures?*

Reaching all parents

Research suggests that certain settings and mechanisms may be particularly effective conduits to engage parents. We still need to learn more about which conduits would be most successful to reach and support *all* parents with playful learning resources.

- *What conduits are both inclusive and effective in sharing our research with families across contexts?*

- *How can all parents, particularly low income and 'time-poor' parents, be supported to feel like they can be successful in engaging their child in playful learning?*

Changing the lens

Although recent research suggests that parents may be looking more favourably towards playful learning (Eason & Ramani, 2020; LaForett & Mendez, 2017a; LEGO, 2018; Lin & Li, 2018; Winthrop et al., 2021), there is still a need to better understand how parents in a variety of contexts conceptualize play. From there, we must consider prominent parent beliefs related to play and explore different ways to change the lens on play and its connection to learning, when necessary. Systems theory says that in order to shift collective mindsets, members of society need to understand that existing practices do not align with their desired goals (Meadows, 1999; Winthrop et al., 2021). So, we also need to explore and honour what outcomes matter to parents, and then investigate misalignments that may exist between parents' personal goals and current practices.

- *What beliefs do parents have about play and learning? How do these beliefs converge or diverge according to different contexts and cultures?*

- *What child outcomes matter to parents? Are there any common themes of desired child outcomes across contexts?*

- *How can we show parents that playful learning outcomes align with their desired outcomes in a way that inspires a shift in mindsets?*

Closing thoughts

In the race to make sure their child succeeds in the 21st century, joy – a key piece of what makes parenting so powerful – is missing. It is time to bring joy to parents, for the sake of both parents and children. Parents can see that supporting their child to thrive in the 21st Century need not require expensive structured activities or fancy gadgets. Rather, science elucidates the magic that lies within the everyday moments parents and children share. Parents can be empowered to use the principles of playful learning, and the approaches introduced in this paper, to find natural opportunities for joy and learning as they go about their day. When we better understand what playful learning means to parents in different contexts, and involve parents as partners, we can create a movement for playful learning and joyful parenting. This movement gives parenting back to parents while simultaneously supporting children to develop the breadth of skills they need for our complex and ever-changing world. We know a world where parents and children share in the joy and curiosity inherent to playful learning is possible. This white paper is just the first step towards our mission to empower all parents to feel confident and inspired to engage in playful learning anytime, anywhere.

References

Adams, E. L., Smith, D., Caccavale, L. J., & Bean, M. K. (2021). Parents Are Stressed! Patterns of Parent Stress Across COVID-19. Frontiers in Psychiatry, 12. **https://www.frontiersin.org/article/10.3389/fpsyt.2021.626456**

Agate, J. R., Zabriskie, R. B., Agate, S. T., & Poff, R. (2009). Family Leisure Satisfaction and Satisfaction with Family Life. Journal of Leisure Research, 41(2), 205–223. **https://doi.org/10.1080/00222216.2009.11950166**

Adams, K. S., & Christenson, S. L. (2000). Trust and the Family–School Relationship Examination of Parent–Teacher Differences in Elementary and Secondary Grades. Journal of School Psychology, 38(5), 477–497. **https://doi.org/10.1016/S0022-4405(00)00048-0**

Alcalá, L., Rogoff, B., Mejía-Arauz, R., Coppens, A. D., & Dexter, A. L. (2014). Children's Initiative in Contributions to Family Work in Indigenous-Heritage and Cosmopolitan Communities in Mexico. *Human Development, 57*(2–3), 96–115. **https://doi.org/10.1159/000356763**

Alfieri, L., Brooks, P. J., Aldrich, N. J., & Tenenbaum, H. R. (2011). Does discovery-based instruction enhance learning? *Journal of Educational Psychology, 103*(1), 1–18. **https://doi.org/10.1037/a0021017**

Andre, L., Durksen, T., & Volman, M. L. (2017). Museums as avenues of learning for children: A decade of research. *Learning Environments Research, 20*(1), 47–76. **https://doi.org/10.1007/s10984-016-9222-9**

Ardelt, M., & Eccles, J. S. (2001). Effects of Mothers' Parental Efficacy Beliefs and Promotive Parenting Strategies on Inner-City Youth. *Journal of Family Issues, 22*(8), 944–972. **https://doi.org/10.1177/019251301022008001**

Autin, F., & Croizet, J. C. (2012). Improving Working Memory Efficiency by Reframing Metacognitive Interpretation of Task Difficulty. *Journal of Experimental Psychology: General, 141*(4), 610–618.

Bai, S., Repetti, R. L., & Sperling, J. B. (2016). Children's expressions of positive emotion are sustained by smiling, touching, and playing with parents and siblings: A naturalistic observational study of family life. *Developmental Psychology, 52*(1), 88–101. **https://doi.org/10.1037/a0039854**

Bandura, A. (1997). *Self-efficacy: The exercise of control.*

Barker, J. E., Semenov, A. D., Michaelson, L., Provan, L. S., Snyder, H. R., & Munakata, Y. (2014). Less-structured time in children's daily lives predicts self-directed executive functioning. *Frontiers in Psychology, 5*, 593. **https://doi.org/10.3389/fpsyg.2014.00593**

Barron, B. (2006). Interest and Self-Sustained Learning as Catalysts of Development: A Learning Ecology Perspective. *Human Development, 49*(4), 193–224. **https://doi.org/10.1159/000094368**

Barry, R. A., & Kochanska, G. (2010). A longitudinal investigation of the affective environment in families with young children: From infancy to early school age. *Emotion, 10*(2), 237–249. **https://doi.org/10.1037/a0018485**

Belsky, J. (1984). The Determinants of Parenting: A Process Model. *Child Development, 55*(1), 83–96. **https://doi.org/10.2307/1129836**

Benjamin, N., Haden, C. A., & Wilkerson, E. (2010). Enhancing building, conversation, and learning through caregiver–child interactions in a children's museum. Developmental Psychology, 46(2), 502–515. **https://doi.org/10.1037/a0017822**

Bennett, J. (2020, March 20). 'I Feel Like I Have Five Jobs': Moms Navigate the Pandemic. *The New York Times.* **https://www.nytimes.com/2020/03/20/parenting/childcare-coronavirus-moms.html**

Bennett, P. R., Lutz, A. C., & Jayaram, L. (2012). Beyond the Schoolyard: The Role of Parenting Logics, Financial Resources, and Social Institutions in the Social Class Gap in Structured Activity Participation. *Sociology of Education, 85*(2), 131–157. **https://doi.org/10.1177/0038040711431585**

Bergen, D. (1988). *Play as a medium for learning and developing: A handbook of theory and practice.* Heinemann.

Bernier, A., Carlson, S. M., & Whipple, N. (2010). From External Regulation to Self-Regulation: Early Parenting Precursors of Young Children's Executive Functioning. *Child Development, 81*(1), 326–339. **https://doi.org/10.1111/j.1467-8624.2009.01397.x**

Betzel, R. F., Satterthwaite, T. D., Gold, J. I., & Bassett, D. S. (2017). Positive affect, surprise, and fatigue are correlates of network flexibility. *Scientific Reports, 7*(1), 520. **https://doi.org/10.1038/s41598-017-00425-z**

Bjorklund, D. F., Hubertz, M. J., & Reubens, A. C. (2004). Young children's arithmetic strategies in social context: How parents contribute to children's strategy development while playing games. *International Journal of Behavioral Development, 28(4*), 347–357. **https://doi.org/10.1080/01650250444000027**

Blewitt, P., Rump, K. M., Shealy, S. E., & Cook, S. A. (2009). Shared book reading: When and how questions affect young children's word learning. *Journal of Educational Psychology, 101*(2), 294–304. **https://doi.org/10.1037/a0013844**

Boaler, J. (2002). Learning from teaching: Exploring the relationship between reform curriculum and equity. *Journal for Research in Mathematics Education, 33*(4), 239–258. **https://doi.org/10.2307/749740**

Bonawitz, E., Shafto, P., Gweon, H., Goodman, N. D., Spelke, E., & Schulz, L. (2011). The double-edged sword of pedagogy: Instruction limits spontaneous exploration and discovery. *Cognition, 120*(3), 322–330. **https://doi.org/10.1016/j.cognition.2010.10.001**

Bonawitz, E. B., van Schijndel, T. J. P., Friel, D., & Schulz, L. (2012). Children balance theories and evidence in exploration, explanation, and learning. *Cognitive Psychology, 64*(4), 215–234. **https://doi.org/10.1016/j.cogpsych.2011.12.002**

Bossi, N. (2020, February 20). There's been a revolution in parenting driven by millennials having kids later in life, and it's a huge economic opportunity for investors and founders. *Business Insider*. Retrieved from: **https://www.businessinsider.com/parents-millennials-having-kids-later-economic-opportunity-founders-investors**

Bradley, R. H., Caldwell, B. M., & Rock, S. L. (1988). Home Environment and School Performance: A Ten-Year Follow-Up and Examination of Three Models of Environmental Action. *Child Development, 59*(4), 852–867. **https://doi.org/10.2307/1130253**

Bronstein, P., Ginsburg, G. S., & Herrera, I. S. (2005). Parental Predictors of Motivational Orientation in Early Adolescence: A Longitudinal Study. J*ournal of Youth and Adolescence, 34*(6), 559–575. **https://doi.org/10.1007/s10964-005-8946-0**

Brown, S. M., Doom, J. R., Lechuga-Peña, S., Watamura, S. E., & Koppels, T. (2020). Stress and parenting during the global COVID-19 pandemic. *Child Abuse & Neglect, 110*, 104699. **https://doi.org/10.1016/j.chiabu.2020.104699**

Burn, S. M. (1991). Social Psychology and the Stimulation of Recycling Behaviors: The Block Leader Approach. *Journal of Applied Social Psychology, 21*(8), 611–629. **https://doi.org/10.1111/j.1559-1816.1991.tb00539.x**

Bustamante, A. S., Schlesinger, M., Begolli, K. N., Golinkoff, R. M., Shahidi, 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*(6), 1041–1056. **https://doi.org/10.1037/dev0000923**

Callanan, M. A., Castañeda, C. L., Luce, M. R., & Martin, J. L. (2017). Family Science Talk in Museums: Predicting Children's Engagement From Variations in Talk and Activity. *Child Development, 88*(5), 1492–1504. **https://doi.org/10.1111/cdev.12886**

Callanan, M. A., Legare, C. H., Sobel, D. M., Jaeger, G. J., Letourneau, S., McHugh, S. R., Willard, A., Brinkman, A., Finiasz, Z., Rubio, E., Barnett, A., Gose, R., Martin, J. L., Meisner, R., & Watson, J. (2020). Exploration, Explanation, and Parent–Child Interaction in Museums. Monographs of the Society for Research in *Child Development, 85*(1), 7–137. **https://doi.org/10.1111/mono.12412**

Carr, A., & Pike, A. (2012). Maternal scaffolding behavior: Links with parenting style and maternal education. *Developmental Psychology, 48*(2), 543–551. **https://doi.org/10.1037/a0025888**

Castelo, R., Meuwissen, A., Distefano, R., Mcclelland, M., Galinsky, E., Zelazo, P., & Carlson, S. (2022). Parent Provision of Choice Is a Key Component of Autonomy Support in Predicting Child Executive Function Skills. *Frontiers in Psychology, 12*. **https://doi.org/10.3389/fpsyg.2021.773492**

Cates, C. B., Weisleder, A., Dreyer, B. P., Berkule Johnson, S., Vlahovicova, K., Ledesma, J., & Mendelsohn, A. L. (2016). Leveraging Healthcare to Promote Responsive Parenting: Impacts of the Video Interaction Project on Parenting Stress. *Journal of Child and Family Studies, 25*(3), 827–835. **https://doi.org/10.1007/s10826-015-0267-7**

Cavanaugh, D. M., Clemence, K. J., Teale, M. M., Rule, A. C., & Montgomery, S. E. (2017). Kindergarten Scores, Storytelling, Executive Function, and Motivation Improved through Literacy-Rich Guided Play. *Early Childhood Education Journal, 45*(6), 831–843. **https://doi.org/10.1007/s10643-016-0832-8**

Chi, M. T. H. (2009). Active-Constructive-Interactive: A Conceptual Framework for Differentiating Learning Activities. *Topics in Cognitive Science, 1*(1), 73–105. **https://doi.org/10.1111/j.1756-8765.2008.01005.x**

Chin, T., & Phillips, M. (2004). Social Reproduction and Child-rearing Practices: Social Class, Children's Agency, and the Summer Activity Gap. *Sociology of Education, 77*(3), 185–210. **https://doi.org/10.1177/003804070407700301**

Christakis, D. A., Zimmerman, F. J., & Garrison, M. M. (2007). Effect of Block Play on Language Acquisition and Attention in Toddlers: A Pilot Randomized Controlled Trial. *Archives of Pediatrics & Adolescent Medicine, 161*(10), 967–971. **https://doi.org/10.1001/archpedi.161.10.967**

Clegg, J. M., Wen, N. J., DeBaylo, P. H., Alcott, A., Keltner, E. C., & Legare, C. H. (2021). Teaching Through Collaboration: Flexibility and Diversity in Caregiver–Child Interaction Across Cultures. *Child Development, 92*(1), e56–e75. **https://doi.org/10.1111/cdev.13443**

Colliver, Y., Arguel, A., & Parrila, R. (2021). Formal literacy practices through play: Exposure to adult literacy practices increases child-led learning and interest. *International Journal of Early Years Education, 29*(1), 6–24. **https://doi.org/10.1080/09669760.2020.1779668**

Colliver, Y., Brown, J. E., Harrison, L. J., & Humburg, P. (2022). Free play predicts self-regulation years later: Longitudinal evidence from a large Australian sample of toddlers and preschoolers. *Early Childhood Research Quarterly, 59*, 148–161. **https://doi.org/10.1016/j.ecresq.2021.11.011**

Cook, C., Goodman, N. D., & Schulz, L. E. (2011). Where science starts: Spontaneous experiments in preschoolers' exploratory play. *Cognition, 120*(3), 341–349. **https://doi.org/10.1016/j.cognition.2011.03.003**

Cools, R., Nakamura, K., & Daw, N. D. (2011). Serotonin and Dopamine: Unifying Affective, Activational, and Decision Functions. *Neuropsychopharmacology, 36*(1), 98–113. **https://doi.org/10.1038/npp.2010.121**

Cooney, C. I. (2020, April 8). The Parents Are Not All Right. *Medium.* **https://gen.medium.com/parents-are-not-ok-66ab2a3e42d9**

Courage, M. L., Murphy, A. N., Goulding, S., & Setliff, A. E. (2010). When the television is on: The impact of infant-directed video on 6- and 18-month-olds' attention during toy play and on parent–infant interaction. *Infant Behavior and Development, 33*(2), 176–188. **https://doi.org/10.1016/j.infbeh.2009.12.012**

Coyl-Shepherd, D. D., & Hanlon, C. (2013). Family play and leisure activities: Correlates of parents' and children's socio-emotional well-being. *International Journal of Play, 2*(3), 254–272. **https://doi.org/10.1080/21594937.2013.855376**

Crowley, K., Callanan, M. A., Jipson, J. L., Galco, J., Topping, K., & Shrager, J. (2001). Shared scientific thinking in everyday parent-child activity. *Science Education, 85*(6), 712–732. **https://doi.org/10.1002/sce.1035**

Crowley, K., & Jacobs, M. (2002). Building islands of expertise in everyday family activity. In *Learning conversations in museums* (pp. 333–356). Lawrence Erlbaum Associates Publishers.

Dang, L. C., Donde, A., Madison, C., O'Neil, J. P., & Jagust, W. J. (2012). Striatal Dopamine Influences the Default Mode Network to Affect Shifting between Object Features. *Journal of Cognitive Neuroscience, 24*(9), 1960–1970. **https://doi.org/10.1162/jocn_a_00252**

Darley, J. M., & Beniger, J. R. (1981). Diffusion of energy-conserving innovations. *Journal of Social Issues.*

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. **https://doi.org/10.1080/10888691.2018.1537791**

Day, C., Michelson, D., Thomson, S., Penney, C., & Draper, L. (2012). Evaluation of a peer led parenting intervention for disruptive behaviour problems in children: Community based randomised controlled trial. *BMJ, 344*, e1107. **https://doi.org/10.1136/bmj.e1107**

Dean Jr., D., & Kuhn, D. (2007). Direct instruction vs. discovery: The long view. *Science Education, 91*(3), 384–397. **https://doi.org/10.1002/sce.20194**

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie Canadienne, 49*(1), 14–23. **https://doi.org/10.1037/0708-5591.49.1.14**

Denervaud, S., Fornari, E., Yang, X.-F., Hagmann, P., Immordino-Yang, M. H., & Sander, D. (2020). An fMRI study of error monitoring in Montessori and traditionally-schooled children. *Npj Science of Learning, 5*(1), 11. **https://doi.org/10.1038/s41539-020-0069-6**

Diamond, A. (2012). Activities and Programs That Improve Children's Executive Functions. *Current Directions in Psychological Science, 21*(5), 335–341. **https://doi.org/10.1177/0963721412453722**

Diamond, A. (2014). Want to Optimize Executive Functions and Academic Outcomes? *Minnesota Symposia on Child Psychology, 37*, 205–232.

Dintersmith, T. (2018). *What School Could Be: Insights and Inspiration from Teachers Across America*. Princeton University Press. **http://ebookcentral.proquest.com/lib/templeuniv-ebooks/detail.action?docID=5313388**

Distefano, R., Galinsky, E., McClelland, M. M., Zelazo, P. D., & Carlson, S. M. (2018). Autonomy-supportive parenting and associations with child and parent executive function. *Journal of Applied Developmental Psychology, 58*, 77–85. **https://doi.org/10.1016/j.appdev.2018.04.00**

Dreyer, B. P., Mendelsohn, A. L., & Tamis-LeMonda, C. S. (1996). Assessing the Child's Cognitive Home Environment Through Parental Report; Reliability and Validity. *Early Development and Parenting, 5*(4), 271–287. **https://doi.org/10.1002/(SICI)1099-0917(199612)5:4<271::AID-EDP138>3.0.CO;2-D**

Duckworth, A. L., Quirk, A., Gallop, R., Hoyle, R. H., Kelly, D. R., & Matthews, M. D. (2019). Cognitive and noncognitive predictors of success. *Proceedings of the National Academy of Sciences, 116*(47), 23499–23504. **https://doi.org/10.1073/pnas.1910510116**

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 92*(6), 1087–1101. **https://doi.org/10.1037/0022-3514.92.6.1087**

Duggan, M., Lenhart, A., Lampe, C., & Ellison, N. B. (2015, July 16). Parents and Social Media. *Pew Research Center: Internet, Science & Tech.* **https://www.pewresearch.org/internet/2015/07/16/parents-and-social-media/**

Dunst, C. J. (2020). Everyday Learning Opportunities of Young Children With and Without Developmental Disabilities or Delays. *International Journal of Early Childhood Environmental Education.*

Dweck, C. S. (1998). The development of early self-conceptions: Their relevance for motivational processes. In J. Heckhausen & C. S. Dweck (Eds.), *Motivation and self-regulation across the life span* (pp. 257–280). Cambridge University Press. **https://doi-org.libproxy.temple.edu/10.1017/CBO9780511527869.012**

Dweck, C. (2006). *Mindset: The new psychology of success*. New York: Random House.

Eason, S. H., & Ramani, G. B. (2020). Parent–child math talk about fractions during formal learning and guided play activities. *Child Development, 91*(2), 546–562. **https://doi.org/10.1111/cdev.13199**

Eason, S. H., Nelson, A. E., Dearing, E., & Levine, S. C. (2021). Facilitating young children's numeracy talk in play: The role of parent prompts. *Journal of Experimental Child Psychology, 207*, 105124. **https://doi.org/10.1016/j.jecp.2021.105124**

Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental Socialization of Emotion. *Psychological Inquiry, 9*(4), 241–273.

Eisenberg, N., Valiente, C., Morris, A. S., Fabes, R. A., Cumberland, A., Reiser, M., Gershoff, E. T., Shepard, S. A., & Losoya, S. (2003). Longitudinal relations among parental emotional expressivity, children's regulation, and quality of socioemotional functioning. *Developmental Psychology, 39*(1), 3–19. **https://doi.org/10.1037/0012-1649.39.1.3**

Elder, R. W., Shults, R. A., Sleet, D. A., Nichols, J. L., Thompson, R. S., & Rajab, W. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: A systematic review. *American Journal of Preventive Medicine, 27*(1), 57–65. **https://doi.org/10.1016/j.amepre.2004.03.002**

Elkind, D. (1981). *The hurried child: Growing up too fast too soon*. Addison-Wesley Pub. Co.

Elkind, D. (2006). *The hurried child: Growing up too fast too soon*. (3rd ed.) Da Capo Press.

Evans, N. S., Todaro, R. D., Golinkoff, R. M., & Hirsh-Pasek, K. (2022). *Getting comfortable with uncertainty: The road to creativity in preschool children*. In Uncertainty: A catalyst for creativity, learning and development (pp. 231-252). Springer, Cham.

Evans, N. S., Todaro, R. D., Schlesinger, M. A., Golinkoff, R. M., & Hirsh-Pasek, K. (2021). Examining the impact of children's exploration behaviors on creativity. *Journal of Experimental Child Psychology, 207*, 105091. **https://doi.org/10.1016/j.jecp.2021.105091**

Faircloth, C. (2014). Intensive Parenting and the Expansion of Parenting. In E. Lee, J. Bristow, C. Faircloth, & J. Macvarish (Eds.), *Parenting Culture Studies* (pp. 25–50). Palgrave Macmillan UK.

Faulkner, G., Mitra, R., Buliung, R., Fusco, C., & Stone, M. (2015). Children's outdoor playtime, physical activity, and parental perceptions of the neighbourhood environment. *International Journal of Play, 4*(1), 84–97. **https://doi.org/10.1080/21594937.2015.1017303**

Fernald, A., & O'Neill, D. K. (1993). Peekaboo across cultures: How mothers and infants play with voices, faces, and expectations. In K. MacDonald (Ed.), *Parent–child play: Descriptions and implications* (pp. 259–285). State University of New York Press.

Ferrara, K., Hirsh-Pasek, K., Newcombe, N. S., Golinkoff, R. M., & Lam, W. S. (2011). Block Talk: Spatial Language During Block Play. *Mind, Brain, and Education, 5*(3), 143–151. **https://doi.org/10.1111/j.1751-228X.2011.01122.x**

Fisher, K. R., Hirsh-Pasek, K., Golinkoff, R. M., & Gryfe, S. G. (2008). Conceptual split? Parents' and experts' perceptions of play in the 21st century. *Journal of Applied Developmental Psychology, 29*(4), 305–316. **https://doi.org/10.1016/j.appdev.2008.04.006**

Fisher, K. R., Hirsh-Pasek, K., Newcombe, N., & Golinkoff, R. M. (2013). Taking Shape: Supporting Preschoolers' Acquisition of Geometric Knowledge Through Guided Play. *Child Development, 84*(6), 1872–1878. **https://doi.org/10.1111/cdev.12091**

Freisthler, B., Gruenewald, P. J., Tebben, E., Shockley McCarthy, K., & Price Wolf, J. (2021). Understanding at-the-moment stress for parents during COVID-19 stay-at-home restrictions. *Social Science & Medicine, 279*, 114025. **https://doi.org/10.1016/j.socscimed.2021.114025**

Frick, A., & Wang, S. (2014). Mental Spatial Transformations in 14- and 16-Month-Old Infants: Effects of Action and Observational Experience. *Child Development, 85*(1), 278–293. **https://doi.org/10.1111/cdev.12116**

Garner, P. W., Dunsmore, J. C., & Southam-Gerrow, M. (2008). Mother–Child Conversations about Emotions: Linkages to Child Aggression and Prosocial Behavior. *Social Development, 17*(2), 259–277. **https://doi.org/10.1111/j.1467-9507.2007.00424.x**

Galinsky, E., Bezos, J., McClelland, M., Carlson, S. M., & Zelazo, P. D. (2017). Civic Science for Public Use: Mind in the Making and Vroom. *Child Development, 88*(5), 1409–1418. **https://doi.org/10.1111/cdev.12892**

Gaskins, S. (2015). Childhood practices across cultures: Play and household work. In *The Oxford handbook of human development and culture: An interdisciplinary perspective* (pp. 185–197). Oxford University Press.

Gaskins, S., & Paradise, R. (2010). Learning through observation in daily life. In *The anthropology of learning in childhood* (pp. 85–117). AltaMira Press.

Gaudreau, C., Hirsh-Pasek, K., & Golinkoff, R. M. (2021). What's in a distraction? The effect of parental cell phone use on parents' and children's question-asking. *Developmental Psychology.* **https://doi.org/10.1037/dev0001268**

Gauthier, A. H., Bryson, C., Fadel, L., Haux, T., Koops, J., & Mynarska, M. (2021). Exploring the concept of intensive parenting in a three-country study. *Demographic Research, 44*, 333–348.

Gauthier, A. H., & de Jong, P. W. (2021). Costly children: The motivations for parental investment in children in a low fertility context. *Genus, 77*(1), 6. **https://doi.org/10.1186/s41118-020-00111-5**

Gennetian, L. A., Shafir, E., Aber, J. L., & de Hoop, J. (2021). Behavioral insights into cash transfers to families with children. *Behavioral Science & Policy, 7*(1), 71–92.

Gentner, D., Levine, S. C., Ping, R., Isaia, A., Dhillon, S., Bradley, C., & Honke, G. (2015). Rapid Learning in a Children's Museum via Analogical Comparison. *Cognitive Science, 40*(1), 224–240. **https://doi.org/10.1111/cogs.12248**

Gentner, D., Loewenstein, J., & Thompson, L. (2003). Learning and transfer: A general role for analogical encoding. *Journal of Educational Psychology, 95*(2), 393–408. **https://doi.org/10.1037/0022-0663.95.2.393**

Gibb, R., Coelho, L., Van Rootselaar, N. A., Halliwell, C., MacKinnon, M., Plomp, I., & Gonzalez, C. L. R. (2021). Promoting Executive Function Skills in Preschoolers Using a Play-Based Program. *Frontiers in Psychology, 12.* **https://doi.org/10.3389/fpsyg.2021.720225**

Ginsburg, K. R., and the Committee on Communications, & and the Committee on Psychosocial Aspects of Child and Family Health. (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. *PEDIATRICS, 119*(1), 182–191. **https://doi.org/10.1542/peds.2006-2697**

Golinkoff, R. & Hirsh-Pasek, K. (2016). *Becoming Brilliant*. American Psychological Association: Washington, DC.

Gonzalez, N., Moll, L. C., & Amanti, C. (2006). Funds of Knowledge: *Theorizing Practices in Households, Communities, and Classrooms.* Routledge.

Gonzalez, A.-L., & Wolters, C. A. (2006). The Relation Between Perceived Parenting Practices and Achievement Motivation in Mathematics. *Journal of Research in Childhood Education, 21*(2), 203–217. **https://doi.org/10.1080/02568540609594589**

Gopnik, A. (2016). *The Gardener and the Carpenter: What the New Science of Child Development Tells Us About the Relationship Between Parents and Children.* Macmillan.

Gopnik, A. M., Meltzoff, A. N., & Kuhl, P. K. (2001). *The Scientist in the Crib: How Children Learn and What They Teach Us about the Mind.*

Gopnik, A., & Wellman, H. M. (2012). Reconstructing constructivism: Causal models, Bayesian learning mechanisms, and the theory theory. *Psychological Bulletin, 138*(6), 1085–1108.
https://doi.org/10.1037/a0028044

Gray, P. (2017). What exactly is play, and why is it such a powerful vehicle for learning?. *Topics in Language Disorders, 37*(3), 217-228.

Griffith, S. F., & Arnold, D. H. (2019). Home learning in the new mobile age: Parent–child interactions during joint play with educational apps in the US. *Journal of Children and Media, 13*(1), 1–19.
https://doi.org/10.1080/17482798.2018.1489866

Griffith, S. F., & Grolnick, W. S. (2014). Parenting in Caribbean families: A look at parental control, structure, and autonomy support. *Journal of Black Psychology, 40*(2), 166–190.
https://doi.org/10.1177/0095798412475085

Gunderson, E. A., Gripshover, S. J., Romero, C., Dweck, C. S., Goldin-Meadow, S., & Levine, S. C. (2013). Parent Praise to 1- to 3-Year-Olds Predicts Children's Motivational Frameworks 5 Years Later. *Child Development, 84*(5), 1526–1541.
https://doi.org/10.1111/cdev.12064

Gweon, H., & Schulz, L. (2008, July). Stretching to learn: Ambiguous evidence and variability in preschoolers' exploratory play. In *Proceedings of the 30th annual meeting of the Cognitive Science Society* (pp. 570–574).

Habgood, M. P. J., & Ainsworth, S. E. (2011). Motivating Children to Learn Effectively: Exploring the Value of Intrinsic Integration in Educational Games. *Journal of the Learning Sciences, 20*(2), 169–206.
https://doi.org/10.1080/10508406.2010.508029

Haden, C. A. (2010). Talking About Science in Museums. *Child Development Perspectives, 4*(1), 62–67.
https://doi.org/10.1111/j.1750-8606.2009.00119.x

Haden, C. A., Jant, E. A., Hoffman, P. C., Marcus, M., Geddes, J. R., & Gaskins, S. (2014). Supporting family conversations and children's STEM learning in a children's museum. *Early Childhood Research Quarterly, 29*(3), 333–344.
https://doi.org/10.1016/j.ecresq.2014.04.004

Haight, W. L., Parke, R. D., & Black, J. E. (1997). Mothers' and Fathers' Beliefs About and Spontaneous Participation in Their Toddlers' Pretend Play. *Merrill-Palmer Quarterly, 43*(2), 271–290.

Haimovitz, K., & Dweck, C. S. (2016). Parents' Views of Failure Predict Children's Fixed and Growth Intelligence Mind-Sets. *Psychological Science, 27*(6), 859–869.
https://doi.org/10.1177/0956797616639727

Hammond, S. I., Müller, U., Carpendale, J. I. M., Bibok, M. B., & Liebermann-Finestone, D. P. (2012). The effects of parental scaffolding on preschoolers' executive function. *Developmental Psychology, 48*(1), 271–281.
https://doi.org/10.1037/a0025519

Han, M., Moore, N., Vukelich, C., & Buell, M. (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.

Hanner, E., Braham, E. J., Elliott, L., & Libertus, M. E. (2019). Promoting Math Talk in Adult–Child Interactions Through Grocery Store Signs. *Mind, Brain, and Education, 13*(2), 110–118.
https://doi.org/10.1111/mbe.12195

Harkness, S., Super, C., Mavridis, C., Barry, O., & Zeitlin, M. (2013). Culture and Early Childhood Development: Implications for policy and programs. *Handbook of Early Childhood Development Research and Its Impact on Global Policy.*
https://doi.org/10.1093/acprof:oso/9780199922994.003.0007

Harkness, S., Super, C. M., Bonichini, S., Bermudez, M. R., Mavridis, C., van Schaik, S. D. M., Tomkunas, A., & Palacios, J. (2020). Parents, Preschools, and the Developmental Niches of Young Children: A Study in Four Western Cultures. *New Directions for Child and Adolescent Development*, (170), 113–141.
https://doi.org/10.1002/cad.20343

Harkness, S., & Super, C. M. (2020). Cross-Cultural Research on Parents: Applications to the Care and Education of Children Introduction to the Issue. *New Directions for Child and Adolescent Development*, (170), 7–11.
https://doi.org/10.1002/cad.20341

Hassinger-Das, B., Quinones, A., DiFlorio, C., Schwartz, R., Talla Takoukam, N. C., Salerno, M., & Zosh, J. M. (2021). Looking deeper into the toy box: Understanding caregiver toy selection decisions. *Infant Behavior and Development, 62*, 101529.
https://doi.org/10.1016/j.infbeh.2021.101529

Hassinger-Das, B., Palti, I., Golinkoff, R. M., & Hirsh-Pasek, K. (2020b). Urban Thinkscape: Infusing Public Spaces with STEM Conversation and Interaction Opportunities. *Journal of Cognition and Development, 21*(1), 125–147.
https://doi.org/10.1080/15248372.2019.1673753

Hassinger-Das, B., Toub, T. S., Zosh, J. M., Michnick, J., Golinkoff, R., & Hirsh-Pasek, K. (2017). More than just fun: A place for games in playful learning / Más que diversión: el lugar de los juegos reglados en el aprendizaje lúdico. *Infancia y Aprendizaje, 40*(2), 191–218.
https://doi.org/10.1080/02103702.2017.1292684

Hassinger-Das, B., Zosh, J. M., Hansen, N., Talarowski, M., Zmich, K., Golinkoff, R. M., & Hirsh-Pasek, K. (2020a). Play-and-learn spaces: Leveraging library spaces to promote caregiver and child interaction. *Library & Information Science Research, 42*(1), 101002.
https://doi.org/10.1016/j.lisr.2020.101002

Hedrick, A. M., San Souci, P., Haden, C. A., & Ornstein, P. A. (2009). Mother–Child Joint Conversational Exchanges During Events: Linkages to Children's Memory Reports Over Time. *Journal of Cognition and Development, 10*(3), 143–161.
https://doi.org/10.1080/15248370903155791

Hennig, C. (2017, July 18). The lost art of play: How overscheduling makes children anxious. *CBC News.*
https://www.cbc.ca/news/canada/british-columbia/no-time-for-playtime-rise-of-anxiety-1.4208090

Hidi, S. E., & Renninger, K. A. (2020). On educating, curiosity, and interest development. *Current Opinion in Behavioral Sciences, 35*, 99–103.
https://doi.org/10.1016/j.cobeha.2020.08.002

Higgins, S., Hall, E., Wall, K., Woolner, P., & Mccaughey, C. (2005). *The impact of school environments: A literature review.* The Design Council.

Hill, H. D., & Romich, J. (2018). How Will Higher Minimum Wages Affect Family Life and Children's Well-Being? *Child Development Perspectives, 12*(2), 109–114.
https://doi.org/10.1111/cdep.12270

Hirsh-Pasek, K., Alper, R. M., & Golinkoff, R. M. (2018). Living in Pasteur's Quadrant: How Conversational Duets Spark Language at Home and in the Community. *Discourse Processes, 55*(4), 338–345. **https://doi.org/10.1080/0163853X.2018.1442114**

Hirsh-Pasek, K., Golinkoff, R. M., & Eyer, D. (2004). *Einstein Never Used Flash Cards: How Our Children Really Learn – and Why They Need to Play More and Memorize Less.* Harmony/Rodale.

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

Hirsh-Pasek, K., Zosh, J. M., Golinkoff, R. M., Gray, J. H., Robb, M. B., & Kaufman, J. (2015). Putting Education in 'Educational' Apps: Lessons From the Science of Learning. *Psychological Science in the Public Interest, 16*(1), 3–34. **https://doi.org/10.1177/1529100615569721**

Hofer, M. (2010). Adolescents' Development of Individual Interests: A Product of Multiple Goal Regulation? *Educational Psychologist, 45*(3), 149–166. **https://doi.org/10.1080/00461520.2010.493469**

Hollenstein, L., Thurnheer, S., & Vogt, F. (2022). Problem Solving and Digital Transformation: Acquiring Skills through Pretend Play in Kindergarten. *Education Sciences, 12*(2), 92. **https://doi.org/10.3390/educsci12020092**

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why Do Parents Become Involved in Their Children's Education? *Review of Educational Research, 67*(1), 3–42. **https://doi.org/10.3102/00346543067001003**

Hoover-Dempsey, K. V., Walker, J. M., & Sandler, H. M. (2005). Parents' motivations for involvement in their children's education. *School-family partnerships for children's success*, pp. 40–56.

Huang, Q., Sun, J., & Tang, Y. (2021). Chinese Parents' Scaffolding and Children's Initiative in Mother–Child and Father–Child Interactions across Different Types of Problem-solving Activities. *Early Education and Development, 32*(2), 249–271. **https://doi.org/10.1080/10409289.2020.1752591**

IBM. (2010). *IBM 2010 Global CEO Study: Creativity Selected as Most Crucial Factor for Future Success*. IBM Newsroom. **https://newsroom.ibm.com/2010-05-18-IBM-2010-Global-CEO-Study-Creativity-Selected-as-Most-Crucial-Factor-for-Future-Success**

Ihmeideh, F. (2019). Getting parents involved in children's play: Qatari parents' perceptions of and engagement with their children's play. *Education 3-13, 47*(1), 47–63. **https://doi.org/10.1080/03004279.2017.1399152**

Irvin, D. W., Bigelow, K. M., Turcotte, A., Eastwood-Tallmon, N., & Wallisch, A. (2020). Talk Around Town: A Mobile Phone Application to Support Parent–Child Talk in the Community. *Families in Society, 101*(1), 21–33. **https://doi.org/10.1177/1044389419867008**

Ishizuka, P. (2019). Social Class, Gender, and Contemporary Parenting Standards in the United States: Evidence from a National Survey Experiment. *Social Forces, 98*(1), 31–58. **https://doi.org/10.1093/sf/soy107**

Istomina, Z. M. (1977). The development of voluntary memory in preschool-age children. In M. Cole (Ed.), *Soviet developmental psychology* (pp. 100–159). White Plains, NY: Sharpe.

Ito, M., Gutiérrez, K., Livingstone, S., Penuel, B., Rhodes, J., Salen, K., Schor, J., Sefton-Green, J., & Watkins, S. C. (2013). *Connected learning: An agenda for research and design*.

Jant, E. A., Haden, C. A., Uttal, D. H., & Babcock, E. (2014). Conversation and Object Manipulation Influence Children's Learning in a Museum. *Child Development, 85*(5), 2029–2045. **https://doi.org/10.1111/cdev.12252**

Jee, B. D., Uttal, D. H., Gentner, D., Manduca, C., Shipley, T. F., Tikoff, B., Ormand, C. J., & Sageman, B. (2010). Commentary: Analogical Thinking in Geoscience Education. *Journal of Geoscience Education, 58*(1), 2–13. **https://doi.org/10.5408/1.3544291**

Jensen, H., Pyle, A., Zosh, J. M., Ebrahim, H. B., Zaragoza Scherman, A., Reunamo, J., & Hamre, B. K. (2019). *Play facilitation: the science behind the art of engaging young children* (white paper). The LEGO Foundation, DK.

Jirout, J., & Klahr, D. (2012). Children's scientific curiosity: In search of an operational definition of an elusive concept. *Developmental Review, 32*(2), 125–160. **https://doi.org/10.1016/j.dr.2012.04.002**

Johnston, B. D., Huebner, C. E., Tyll, L. T., Barlow, W. E., & Thompson, R. S. (2004). Expanding developmental and behavioral services for newborns in primary care: Effects on parental well-being, practice and satisfaction. *American Journal of Preventive Medicine, 26*(4), 356–366.

Joussemet, M., Koestner, R., Lekes, N., & Landry, R. (2005). A Longitudinal Study of the Relationship of Maternal Autonomy Support to Children's Adjustment and Achievement in School. *Journal of Personality, 73*(5), 1215–1236. **https://doi.org/10.1111/j.1467-6494.2005.00347.x**

Kapur, M. (2008). Productive Failure. *Cognition and Instruction, 26*(3), 379–424. **https://doi.org/10.1080/07370000802212669**

Kersey, A., & James, K. (2013). Brain activation patterns resulting from learning letter forms through active self-production and passive observation in young children. *Frontiers in Psychology, 4*. **https://www.frontiersin.org/article/10.3389/fpsyg.2013.00567**

Kinsner, K., Parlakian, R., Sanchez, G. R., Manzano, S., & Barreto, M. (2018, October 3). *Millennial Connections: Findings from ZERO TO THREE's 2018 Parent Survey*. Retrieved from: **https://www.zerotothree.org/resources/2475-millennial-connections-executive-summary**

Kirkova, D. (2014, March 12). Britain's children are over-scheduled, says new research. *Daily Mail Online*. **https://www.dailymail.co.uk/femail/article-2579009/Theres-no-time-childhood-Britains-kids-scheduled-free-time-parents-says-new-research.html**

Klahr, D., & Nigam, M. (2004). The Equivalence of Learning Paths in Early Science Instruction: Effects of Direct Instruction and Discovery Learning. *Psychological Science, 15*(10), 661–667. **https://doi.org/10.1111/j.0956-7976.2004.00737.x**

Klich, T. (2019, May 10). The New Mom Economy: Meet The Startups Disrupting The $46 Billion Millennial Parenting Market. *Forbes.* Retrieved January 7, 2022, from **https://www.forbes.com/sites/tanyaklich/2019/05/10/the-new-mom-economy-meet-the-startups-disrupting-the-46-billion-millennial-parenting-market/**

Kokkinaki, T. S., Vasdekis, V. g. s., Koufaki, Z. E., & Trevarthen, C. B. (2017). Coordination of Emotions in Mother–Infant Dialogues. *Infant and Child Development, 26*(2), e1973. **https://doi.org/10.1002/icd.1973**

Kornrich, S., & Furstenberg, F. (2012). Investing in Children: Changes in Parental Spending on Children, 1972–2007. *Demography, 50*(1), 1–23. **https://doi.org/10.1007/s13524-012-0146-4**

Koşkulu, S., Küntay, A. C., Liszkowski, U., & Uzundag, B. A. (2021). Number and type of toys affect joint attention of mothers and infants. *Infant Behavior and Development, 64*, 101589. **https://doi.org/10.1016/j.infbeh.2021.101589**

Kuhl, P. K. (2007). Is speech learning 'gated' by the social brain? *Developmental Science, 10*(1), 110–120. **https://doi.org/10.1111/j.1467-7687.2007.00572.x**

Kurata, S., Hiraoka, D., Ahmad Adlan, A. S., Jayanath, S., Hamzah, N., Ahmad-Fauzi, A., Fujisawa, T. X., Nishitani, S., & Tomoda, A. (2021). Influence of the COVID-19 Pandemic on Parenting Stress Across Asian Countries: A Cross-National Study. *Frontiers in Psychology, 12*. **https://www.frontiersin.org/articles/10.3389/fpsyg.2021.782298**

Ladd, G. W., & Hart, C. H. (1992). Creating informal play opportunities: Are parents' and preschoolers' initiations related to children's competence with peers? *Developmental Psychology, 28*(6), 1179–1187. **https://doi-org.libproxy.temple.edu/10.1037/0012-1649.28.6.1179**

LaForett, D. R., & Mendez, J. L. (2017a). Children's engagement in play at home: A parent's role in supporting play opportunities during early childhood. *Early Child Development and Care, 187*(5–6), 910–923. **https://doi.org/10.1080/03004430.2016.1223061**

LaForett, D. R., & Mendez, J. L. (2017b). Play beliefs and responsive parenting among low-income mothers of preschoolers in the United States. *Early Child Development and Care, 187*(8), 1359–1371. **https://doi.org/10.1080/03004430.2016.1169180**

LeFevre, J.-A., Skwarchuk, S.-L., Smith-Chant, B. L., Fast, L., Kamawar, D., & Bisanz, J. (2009). Home numeracy experiences and children's math performance in the early school years. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement, 41*(2), 55–66. **https://doi.org/10.1037/a0014532**

Lee, C. D. (2007). *Culture, literacy, and learning: Taking bloom in the midst of the whirlwind.* Teachers College Press.

Lee, H. S., & Anderson, J. R. (2013). Student Learning: What Has Instruction Got to Do With It? *Annual Review of Psychology, 64*(1), 445–469. **https://doi.org/10.1146/annurev-psych-113011-143833**

Legare, C. H., Gelman, S. A., & Wellman, H. M. (2010). Inconsistency with prior knowledge triggers children's causal explanatory reasoning. *Child Development, 81*(3), 929–944.

LEGO. (2018). LEGO Play Well Report. **https://www.lego.com/en-us/aboutus/news/2018/august/lego-play-well-report/**

Leonard, J. A., Garcia, A., & Schulz, L. E. (2020). How Adults' Actions, Outcomes, and Testimony Affect Preschoolers' Persistence. *Child Development, 91*(4), 1254–1271. **https://doi.org/10.1111/cdev.13305**

Leonard, J. A., Martinez, D. N., Dashineau, S. C., Park, A. T., & Mackey, A. P. (2021). Children Persist Less When Adults Take Over. *Child Development, 92*(4), 1325–1336. **https://doi.org/10.1111/cdev.13492**

Levavi, K., Menashe-Grinberg, A., Barak-Levy, Y., & Atzaba-Poria, N. (2020). The role of parental playfulness as a moderator reducing child behavioural problems among children with intellectual disability in Israel. *Research in Developmental Disabilities, 107*, 103793. **https://doi.org/10.1016/j.ridd.2020.103793**

Li, H., & Chen, J. J. (2017). Evolution of the early childhood curriculum in China: the impact of social and cultural factors on revolution and innovation. *Early Child Development and Care, 187*(10), 1471–1483. **https://doi.org/10.1080/03004430.2016.1220373**

Lillard, A. S. (2013). Playful Learning and Montessori Education. *NAMTA Journal, 38*(2), 137–174.

Lillard, A. S. (2021). Montessori as an alternative early childhood education. *Early Child Development and Care, 191*(7–8), 1196–1206. **https://doi.org/10.1080/03004430.2020.1832998**

Lin, X., & Li, H. (2018). Parents' play beliefs and engagement in young children's play at home. *European Early Childhood Education Research Journal, 26*(2), 161–176.

List, J. A., Pernaudet, J., & Suskind, D. L. (2021). Shifting parental beliefs about child development to foster parental investments and improve school readiness outcomes. *Nature Communications, 12*(1), 5765. **https://doi.org/10.1038/s41467-021-25964-y**

Love, B. L. (2015). What is hip-hop-based education doing in nice fields such as early childhood and elementary education? *Urban Education, 50*(1), 106–131. **https://doi.org/10.1177/0042085914563182**

Lucca, K., Horton, R., & Sommerville, J. A. (2019). Keep trying!: Parental language predicts infants' persistence. *Cognition, 193*, 104025. **https://doi.org/10.1016/j.cognition.2019.104025**

Lunkenheimer, E., Hamby, C. M., Lobo, F. M., Cole, P. M., & Olson, S. L. (2020). The Role of Dynamic, Dyadic Parent-Child Processes in Parental Socialization of Emotion. *Developmental Psychology, 56*(3), 566–577. **https://doi.org/10.1037/dev0000808**

Lupton, D., Pedersen, S., & Thomas, G. M. (2016). Parenting and digital media: from the early web to contemporary digital society. *Sociology Compass, 10*(8), 730–743.

Manz, P. H., & Bracaliello, C. B. (2016). Expanding home visiting outcomes: Collaborative measurement of parental play beliefs and examination of their association with parents' involvement in toddler's learning. *Early Childhood Research Quarterly, 36*, 157–167. **https://doi.org/10.1016/j.ecresq.2015.12.015**

Mapp, K. L., & Bergman, E. (2021). Embracing a New Normal: Toward a More Liberatory Approach to Family Engagement. *Carnegie Corporation of New York*.

Masek, L. R., McMillan, B. T. M., Paterson, S. J., Tamis-LeMonda, C. S., Golinkoff, R. M., & Hirsh-Pasek, K. (2021). Where language meets attention: How contingent interactions promote learning. *Developmental Review, 60*, 100961. **https://doi.org/10.1016/j.dr.2021.100961**

McCatharn, J. M., Herbert, K. K., Wei, R., & Rowe, M. L. (2021). Circles of Support: Exploring the 'Where' and 'Why' of Parents' Infants Information Seeking Behaviors. *Journal of Child and Family Studies*. **https://doi.org/10.1007/s10826-021-02124-w**

Meadows, D. H. (1999). Leverage points: Places to intervene in a system.

Medina, C., & Sobel, D. M. (2020). Caregiver–child interaction influences causal learning and engagement during structured play. *Journal of Experimental Child Psychology, 189*, 104678. **https://doi.org/10.1016/j.jecp.2019.104678**

Mehta, J., & Fine, S. (2019). *In search of deeper learning: The quest to remake American high school.* Harvard University Press.

Meltzoff, A. N., & Kuhl, P. K. (2016). Exploring the Infant Social Brain: What's Going on in There? *Zero to Three Journal, 36*(3).

Menashe-Grinberg, A., & Atzaba-Poria, N. (2017). Mother–Child and Father–Child Play Interaction: The Importance of Parental Playfulness as a Moderator of the Links Between Parental Behavior and Child Negativity. *Infant Mental Health Journal, 38*(6), 772–784. **https://doi.org/10.1002/imhj.21678**

Mendelsohn, A. L., Dreyer, B. P., Flynn, V., Tomopoulos, S., Rovira, I., Tineo, W., Pebenito, C., Torres, C., Torres, H., & Nixon, A. F. (2005). Use of Videotaped Interactions During Pediatric Well-Child Care to Promote Child Development: A Randomized, Controlled Trial. *Journal of Developmental and Behavioral Pediatrics: JDBP, 26*(1), 34–41.

Mermelshtine, R. (2017). Parent–child learning interactions: A review of the literature on scaffolding. *British Journal of Educational Psychology, 87*(2), 241–254. **https://doi.org/10.1111/bjep.12147**

Metcalfe, J. (2017). Learning from errors. *Annual Review of Psychology, 68*, 465–489. **https://doi.org/10.1146/annurev-psych-010416-044022**

Meuwissen, A. S., & Carlson, S. M. (2019). An experimental study of the effects of autonomy support on preschoolers' self-regulation. *Journal of Applied Developmental Psychology, 60*, 11–23. **https://doi.org/10.1016/j.appdev.2018.10.001**

Meyer, M., Zosh, J. M., McLaren, C., Robb, M., McCaffery, H., Golinkoff, R. M., Hirsh-Pasek, K., & Radesky, J. (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, 15*(4), 526–548. **https://doi.org/10.1080/17482798.2021.1882516**

Miller, J. L., Lossia, A., Suarez-Rivera, C., & Gros-Louis, J. (2017). Toys that squeak: Toy type impacts quality and quantity of parent–child interactions. *First Language, 37*(6), 630–647. **https://doi.org/10.1177/0142723717714947**

Milteer, R. M., Ginsburg, K. R., Council on Communications and Media Committee on Psychosocial Aspects of Child and Family Health, & Mulligan, D. A. (2012). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bond: Focus on Children in Poverty. *PEDIATRICS, 129*(1), e204–e213. **https://doi.org/10.1542/peds.2011-2953**

Mistry, J., Rogoff, B., & Herman, H. (2001). What Is the Meaning of Meaningful Purpose in Children's Remembering? Istomina Revisited. *Mind, Culture, and Activity, 8*(1), 28–41. **https://doi.org/10.1207/S15327884MCA0801_03**

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The Role of the Family Context in the Development of Emotion Regulation. *Social Development, 16*(2), 361–388. **https://doi.org/10.1111/j.1467-9507.2007.00389.x**

Morris, A. S., Criss, M. M., Silk, J. S., & Houltberg, B. J. (2017). The Impact of Parenting on Emotion Regulation During Childhood and Adolescence. *Child Development Perspectives, 11*(4), 233–238. **https://doi.org/10.1111/cdep.12238**

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75*(1), 33–52.

Mulvaney, M. K., McCartney, K., Bub, K. L., & Marshall, N. L. (2006). Determinants of Dyadic Scaffolding and Cognitive Outcomes in First Graders. *Parenting, 6*(4), 297–320. **https://doi.org/10.1207/s15327922par0604_2**

Neale, D., & Whitebread, D. (2019). Maternal scaffolding during play with 12- to 24-month-old infants: Stability over time and relations with emerging effortful control. *Metacognition & Learning, 14*(3), 265–289. **https://doi.org/10.1007/s11409-019-09196-6**

Neitzel, C., & Stright, A. D. (2003). Mothers' scaffolding of children's problem solving: Establishing a foundation of academic self-regulatory competence. *Journal of Family Psychology, 17*(1), 147–159. **https://doi.org/10.1037/0893-3200.17.1.147**

Neubauer, A. B., Schmidt, A., Kramer, A. C., & Schmiedek, F. (2021). A Little Autonomy Support Goes a Long Way: Daily Autonomy-Supportive Parenting, Child Well-Being, Parental Need Fulfillment, and Change in Child, Family, and Parent Adjustment Across the Adaptation to the COVID-19 Pandemic. *Child Development, 92*(5), 1679–1697. **https://doi.org/10.1111/cdev.13515**

Neuman, S. B., Portillo, M., & Celano, D. C. (2020). Looking for Literacy in All the Right Spaces: The Laundromat. *The Reading Teacher, 74*(1), 29–38. **https://doi.org/10.1002/trtr.1905**

Nicolopoulou, A., Cortina, K. S., Ilgaz, H., Cates, C. B., & de Sá, A. B. (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*, 147–162. **https://doi.org/10.1016/j.ecresq.2015.01.006**

Offer, S. (2013). Family Time Activities and Adolescents' Emotional Well-being. *Journal of Marriage and Family, 75*(1), 26–41. **https://doi.org/10.1111/j.1741-3737.2012.01025.x**

Ogundare, F. (2021, December 21). The Hurried Child' Launched, Highlights Dangers of Overburdening Children. *This Day Live*. **https://www.thisdaylive.com/index.php/2021/12/01/the-hurried-child-launched-highlights-dangers-of-overburdening-children/**

O'Neil, M., Volmert, A., & Gerstein Pineau, M. (2019). *From Caring to Conditions: Strategies for effectively communicating about family, school, and community engagement (A FrameWorks Framing Brief)*. FrameWorks Institute.

Parish-Morris, J., Mahajan, N., Hirsh-Pasek, K., Golinkoff, R. M., & Collins, M. F. (2013). Once Upon a Time: Parent–Child Dialogue and Storybook Reading in the Electronic Era. *Mind, Brain, and Education, 7*(3), 200–211. **https://doi.org/10.1111/mbe.12028**

Parmar, P., Harkness, S., & Super, C. M. (2004). Asian and Euro-American parents' ethnotheories of play and learning: Effects on preschool children's home routines and school behaviour. *International Journal of Behavioral Development, 28*(2), 97–104. **https://doi.org/10.1080/01650250344000307**

Parrott, W. G., & Gleitman, H. (1989). Infants' Expectations in Play: The Joy of Peek-a-boo. *Cognition and Emotion, 3*(4), 291–311. **https://doi.org/10.1080/02699938908412710**

Paul, P. (2008). *Parenting, Inc.: How the Billion-Dollar Baby Business Has Changed the Way We Raise Our Children.* Macmillan.

Peacock-Chambers, E., Ivy, K., & Bair-Merritt, M. (2017). Primary Care Interventions for Early Childhood Development: A Systematic Review. *Pediatrics, 140*(6), e20171661. **https://doi.org/10.1542/peds.2017-1661**

Pew Research Center. (2021). Demographics of Mobile Device Ownership and Adoption in the United States. Pew Research Center: Internet, Science & Tech. Retrieved March 10, 2022, from **https://www.pewresearch.org/internet/fact-sheet/mobile/**

Piaget, J. (1945). *Play, Dreams and Imitation in Childhood.* Norton Library.

Piazza, E. A., Hasenfratz, L., Hasson, U., & Lew-Williams, C. (2020). Infant and Adult Brains Are Coupled to the Dynamics of Natural Communication. *Psychological Science, 31*(1), 6–17. **https://doi.org/10.1177/0956797619878698**

Pomerantz, E. M., Wang, Q., & Ng, F. F.-Y. (2005). Mothers' Affect in the Homework Context: The Importance of Staying Positive. *Developmental Psychology, 41*(2), 414–427. **https://doi.org/10.1037/0012-1649.41.2.414**

Prinz, R. J., & Sanders, M. R. (2007). Adopting a population-level approach to parenting and family support interventions. *Clinical Psychology Review, 27*(6), 739–749. **https://doi.org/10.1016/j.cpr.2007.01.005**

Raikes, H., Alexander Pan, B., Luze, G., Tamis-LeMonda, C. S., Brooks-Gunn, J., Constantine, J., Banks Tarullo, L., Abigail Raikes, H., & Rodriguez, E. T. (2006). Mother–Child Bookreading in Low-Income Families: Correlates and Outcomes During the First Three Years of Life. *Child Development, 77*(4), 924–953. **https://doi.org/10.1111/j.1467-8624.2006.00911.x**

Ramani, G. B., & Siegler, R. S. (2008). Promoting Broad and Stable Improvements in Low-Income Children's Numerical Knowledge Through Playing Number Board Games. *Child Development, 79*(2), 375–394. **https://doi.org/10.1111/j.1467-8624.2007.01131.x**

Ramani, G. B., Rowe, M. L., Eason, S. H., & Leech, K. A. (2015). Math talk during informal learning activities in Head Start families. *Cognitive Development, 35*, 15–33. **https://doi.org/10.1016/j.cogdev.2014.11.002**

Reed, J., Hirsh-Pasek, K., & Golinkoff, R. M. (2017). Learning on hold: Cell phones sidetrack parent-child interactions. *Developmental Psychology, 53*(8), 1428–1436. **https://doi.org/10.1037/dev0000292**

Renninger, K., & Hidi, S. (2017). *The power of interest for motivation and engagement.* Routledge.

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. **https://doi.org/10.1111/mbe.12081**

Rittle-Johnson, B., Saylor, M., & Swygert, K. E. (2008). Learning from explaining: Does it matter if mom is listening? *Journal of Experimental Child Psychology, 100*(3), 215–224. **https://doi.org/10.1016/j.jecp.2007.10.002**

Rodriguez, E. T., & Tamis-LeMonda, C. S. (2011). Trajectories of the Home Learning Environment Across the First 5 Years: Associations With Children's Vocabulary and Literacy Skills at Prekindergarten. *Child Development, 82*(4), 1058–1075. **https://doi.org/10.1111/j.1467-8624.2011.01614.x**

Rodriguez, E. T., Tamis-LeMonda, C. S., Spellmann, M. E., Pan, B. A., Raikes, H., Lugo-Gil, J., & Luze, G. (2009). The formative role of home literacy experiences across the first three years of life in children from low-income families. *Journal of Applied Developmental Psychology, 30*(6), 677–694. **https://doi.org/10.1016/j.appdev.2009.01.003**

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context* (pp. xiv, 242). Oxford University Press.

Rogoff, B. (2003). *The Cultural Nature of Human Development.* Oxford University Press: Oxford.

Roopnarine, J. L. (2012). *Cultural Variations in Beliefs about Play, Parent–Child Play, and Children's Play*: Oxford University Press. **https://doi.org/10.1093/oxfordhb/9780195393002.013.0003**

Roopnarine, J. L., & Jin, B. (2012). Indo Caribbean Immigrant Beliefs about Play and Its Impact on Early Academic Performance. *American Journal of Play, 4*(4), 23.

Roseberry, S., Hirsh-Pasek, K., & Golinkoff, R. M. (2014). Skype Me! Socially Contingent Interactions Help Toddlers Learn Language. *Child Development, 85*(3), 956–970. **https://doi.org/10.1111/cdev.12166**

Sanders, M. R., Divan, G., Singhal, M., Turner, K. M. T., Velleman, R., Michelson, D., & Patel, V. (2021). Scaling Up Parenting Interventions is Critical for Attaining the Sustainable Development Goals. Child Psychiatry & Human Development. **https://doi.org/10.1007/s10578-021-01171-0**

Sanders, M. R., & Mazzucchelli, T. G. (2022). Mechanisms of Change in Population-Based Parenting Interventions for Children and Adolescents. *Journal of Clinical Child & Adolescent Psychology, 51*(3), 1–18. **https://doi.org/10.1080/15374416.2022.2025598**

Sanders, M. R., & Prinz, R. J. (2008). Using the Mass Media as a Population Level Strategy to Strengthen Parenting Skills. *Journal of Clinical Child & Adolescent Psychology, 37*(3), 609–621. **https://doi.org/10.1080/15374410802148103**

Scalise, N. R., Daubert, E. N., & Ramani, G. B. (2018). Narrowing the Early Mathematics Gap: A Play-Based Intervention to Promote Low-Income Preschoolers' Number Skills. *Journal of Numerical Cognition, 3*(3), 559. **https://doi.org/10.5964/jnc.v3i3.72**

Schlesinger, M. A., Hassinger-Das, B., Zosh, J. M., Sawyer, J., Evans, N., & Hirsh-Pasek, K. (2020). Cognitive behavioral science behind the value of play: Leveraging everyday experiences to promote play, learning, and positive interactions. *Journal of Infant, Child & Adolescent Psychotherapy, 19*(2), 202–216. **https://doi.org/10.1080/15289168.2020.1755084**

Schmidt, M. E., Pempek, T. A., Kirkorian, H. L., Lund, A. F., & Anderson, D. R. (2008). The Effects of Background Television on the Toy Play Behavior of Very Young Children. *Child Development, 79*(4), 1137–1151. **https://doi.org/10.1111/j.1467-8624.2008.01180.x**

Schmidt, A., Kramer, A. C., Brose, A., Schmiedek, F., & Neubauer, A. B. (2021). Distance learning, parent–child interactions, and affective well-being of parents and children during the COVID-19 pandemic: A daily diary study. *Developmental Psychology, 57*(10), 1719–1734. **https://doi.org/10.1037/dev0001232**

Schnieders, J. Z.-Y., & Schuh, K. L. (2022). Parent-child Interactions in Numeracy Activities: Parental Scaffolding, Mathematical Talk, and Game Format. *Early Childhood Research Quarterly, 59*, 44–55. **https://doi.org/10.1016/j.ecresq.2021.10.004**

Schulz, L. E., & Bonawitz, E. B. (2007). Serious fun: Preschoolers engage in more exploratory play when evidence is confounded. *Developmental Psychology, 43*(4), 1045–1050. **https://doi.org/10.1037/0012-1649.43.4.1045**

Shah, R., Isaia, A., Schwartz, A., & Atkins, M. (2019). Encouraging Parenting Behaviors That Promote Early Childhood Development Among Caregivers From Low-Income Urban Communities: A Randomized Static Group Comparison Trial of a Primary Care-Based Parenting Program. *Maternal and Child Health Journal, 23*(1), 39–46. **https://doi.org/10.1007/s10995-018-2589-8**

Shen, X., Chick, G., & Pitas, N. A. (2017). From playful parents to adaptable children: A structural equation model of the relationships between playfulness and adaptability among young adults and their parents. *International Journal of Play, 6*(3), 244–254. **https://doi.org/10.1080/21594937.2017.1382983**

Shin, K., Jahng, K. E., & Kim, D. (2019). Stories of South Korean mothers' education fever for their children's education. *Asia Pacific Journal of Education, 39*(3), 338–356. **https://doi.org/10.1080/02188791.2019.1607720**

Shivaram, A., Chavez, Y., Anderson, E., Fritz, A., Jackson, R., Edwards, L., Powers, S., Libertus, M., & Hespos, S. (2021). Brief Interventions Influence the Quantity and Quality of Caregiver-Child Conversations in an Everyday Context. *Frontiers in Psychology, 12*, 645788. **https://doi.org/10.3389/fpsyg.2021.645788**

Shorer, M., Swissa, O., Levavi, P., & Swissa, A. (2021). Parental playfulness and children's emotional regulation: The mediating role of parents' emotional regulation and the parent–child relationship. *Early Child Development and Care, 191*(2), 210–220. **https://doi.org/10.1080/03004430.2019.1612385**

Shtulman, A., Neal, C., & Lindquist, G. (2016). Children's Ability to Learn Evolutionary Explanations for Biological Adaptation. *Early Education and Development, 27*(8), 1222–1236. **https://doi.org/10.1080/10409289.2016.1154418**

Sigel, I. E. (1985). *Parental belief systems: The psychological consequences for child development*. Hillsdale, NJ: Erlbaum Associates.

Sigel, I. E., & McGillicuddy-De Lisi, A. V. (2002). Parent beliefs are cognitions: The dynamic belief systems model. In *Handbook of parenting: Being and becoming a parent, Vol. 3*, 2nd ed (pp. 485–508). Lawrence Erlbaum Associates Publishers.

Simons, C., Sonnenschein, S., Sawyer, B., Kong, P., & Brock, A. (2021). School Readiness Beliefs of Dominican and Salvadoran Immigrant Parents. *Early Education and Development*, 1–22. **https://doi.org/10.1080/10409289.2021.1930747**

Simpkins, S. D., Fredricks, J. A., & Eccles, J. S. (2012). Charting the Eccles' expectancy-value model from mothers' beliefs in childhood to youths' activities in adolescence. *Developmental Psychology, 48*(4), 1019–1032. **https://doi.org/10.1037/a0027468**

Sjödin, D., & Roman, C. (2018). Family practices among Swedish parents: Extracurricular activities and social class. *European Societies, 20*(5), 764–784. **https://doi.org/10.1080/14616696.2018.1473622**

Skene, K., O'Farrelly, C. M., Byrne, E. M., Kirby, N., Stevens, E. C., & Ramchandani, P. G. (2022). Can guidance during play enhance children's learning and development in educational contexts? A systematic review and meta-analysis. *Child Development.* **https://doi.org/10.1111/cdev.13730**

Sobel, D., & Jipson, J. (Eds.) (2016). *Cognitive development in museum settings; Relating research and practice*. Routledge/Taylor & Francis Group.

Sobel, D. M., Letourneau, S. M., Legare, C. H., & Callanan, M. (2021). Relations between parent–child interaction and children's engagement and learning at a museum exhibit about electric circuits. *Developmental Science, 24*(3), e13057. **https://doi.org/10.1111/desc.13057**

Sosa, A. V. (2016). Association of the Type of Toy Used During Play With the Quantity and Quality of Parent-Infant Communication. *JAMA Pediatrics, 170*(2), 132–137. **https://doi.org/10.1001/jamapediatrics.2015.3753**

Stahl, A. E., & Feigenson, L. (2015). Observing the unexpected enhances infants' learning and exploration. *Science, 348*(6230), 91–94. **https://doi.org/10.1126/science.aaa3799**

Stright, A. D., Herr, M. Y., & Neitzel, C. (2009). Maternal scaffolding of children's problem solving and children's adjustment in kindergarten: Hmong families in the United States. *Journal of Educational Psychology, 101*(1), 207–218. **https://doi.org/10.1037/a0013154**

Strong-Wilson, T., & Ellis, J. (2007). Children and Place: Reggio Emilia's Environment As Third Teacher. *Theory Into Practice, 46*(1), 40–47. **https://doi.org/10.1080/00405840709336547**

Suskind, D. (2015). *Thirty million words: Building a child's brain*. Penguin Random House.

Sutton-Smith, B. (1997). *The ambiguity of play*. Harvard University Press.

Takeuchi, L., Vaala, S., & Ahn, J. (2019). *Learning across boundaries: How parents and teachers are bridging children's interests*. New York: The Joan Ganz Cooney Center at Sesame Workshop.

Tomopoulos, S., Dreyer, B. P., Tamis-LeMonda, C., Flynn, V., Rovira, I., Tineo, W., & Mendelsohn, A. L. (2006). Books, Toys, Parent-Child Interaction, and Development in Young Latino Children. *Ambulatory Pediatrics, 6*(2), 72–78. **https://doi.org/10.1016/j.ambp.2005.10.001**

Toub, T. S., Hassinger-Das, B., Nesbitt, K. T., Ilgaz, H., Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., Nicolopoulou, A., & Dickinson, D. K. (2018). The language of play: Developing preschool vocabulary through play following shared book-reading. *Early Childhood Research Quarterly, 45*, 1–17. **https://doi.org/10.1016/j.ecresq.2018.01.010**

Tronick, E. Z. (1989). Emotions and Emotional Communication in Infants. *American Psychologist, 8*.

Valle, A., & Callanan, M. A. (2006). Similarity Comparisons and Relational Analogies in Parent-Child Conversations About Science Topics. *Merrill-Palmer Quarterly, 52*(1), 96–124.

Vandermaas-Peeler, M., Massey, K., & Kendall, A. (2016). Parent Guidance of Young Children's Scientific and Mathematical Reasoning in a Science Museum. *Early Childhood Education Journal, 44*(3), 217–224. **https://doi.org/10.1007/s10643-015-0714-5**

Vandermaas-Peeler, M., Westerberg, L., Fleishman, H., Sands, K., & Mischka, M. (2018). Parental guidance of young children's mathematics and scientific inquiry in games, cooking, and nature activities. *International Journal of Early Years Education, 26*(4), 369–386. **https://doi.org/10.1080/09669760.2018.1481734**

Vasquez, A. C., Patall, E. A., Fong, C. J., Corrigan, A. S., & Pine, L. (2016). Parent autonomy support, academic achievement, and psychosocial functioning: A meta-analysis of research. *Educational Psychology Review, 28*(3), 605–644. **https://doi.org/10.1007/s10648-015-9329-z**

Verdine, B. N., Golinkoff, R. M., Hirsh-Pasek, K., & Newcombe, N. S. (2014). Finding the missing piece: Blocks, puzzles, and shapes fuel school readiness. *Trends in Neuroscience and Education, 3*(1), 7–13. **https://doi.org/10.1016/j.tine.2014.02.005**

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Wakefield, M. A., Loken, B., & Hornik, R. C. (2010). Use of mass media campaigns to change health behaviour. *The Lancet, 376*(9748), 1261–1271. **https://doi.org/10.1016/S0140-6736(10)60809-4**

Waldfogel, J., Doran, E., & Pac, J. (2019). Paid Family and Medical Leave Improves the Well-Being of Children and Families. *SRCD Child Evidence Brief, 5*.

Waldman-Levi, A., Finzi-Dottan, R., & Cope, A. (2020). Mother-child joint play: The role of maternal caregiving and reflective function. *Journal of Child and Family Studies, 29*(1), 94–104. **https://doi.org/10.1007/s10826-019-01638-8**

Wei, R., Ronfard, S., Leyva, D., & Rowe, M. L. (2019). Teaching a novel word: Parenting styles and toddlers' word learning. *Journal of Experimental Child Psychology, 187*, 104639. **https://doi.org/10.1016/j.jecp.2019.05.006**

Weigel, D. J., Martin, S. S., & Bennett, K. K. (2006). Mothers' literacy beliefs: Connections with the home literacy environment and preschool children's literacy development. *Journal of Early Childhood Literacy, 6*(2), 191–211. **https://doi.org/10.1177/1468798406066444**

Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., Kittredge, A. K., & Klahr, D. (2016). Guided Play: Principles and Practices. *Current Directions in Psychological Science, 25*(3), 177–182. **https://doi.org/10.1177/0963721416645512**

Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., & McCandliss, B. D. (2014). Mise en place: Setting the stage for thought and action. *Trends in Cognitive Sciences, 18*(6), 276–278. **https://doi.org/10.1016/j.tics.2014.02.012**

Weisberg, D. S., Zosh, J. M., Hirsh-Pasek, K., & Golinkoff, R. M. (2013). Talking It Up: Play, Language Development, and the Role of Adult Support. *American Journal of Play, 6*(1), 39–54.

Weisleder, A., Cates, C. B., Harding, J. F., Johnson, S. B., Canfield, C. F., Seery, A. M., Raak, C. D., Alonso, A., Dreyer, B. P., & Mendelsohn, A. L. (2019). Links between Shared Reading and Play, Parent Psychosocial Functioning, and Child Behavior: Evidence from a Randomized Controlled Trial. *The Journal of Pediatrics, 213*, 187–195.e1. **https://doi.org/10.1016/j.jpeds.2019.06.037**

Whitebread, D., & Basilio, M. (2013). Play, culture and creativity. Cultures of Creativities.

White, R. E., Thibodeau-Nielsen, R. B., Palermo, F., & Mikulski, A. M. (2021). Engagement in social pretend play predicts preschoolers' executive function gains across the school year. *Early Childhood Research Quarterly, 56*, 103–113. **https://doi.org/10.1016/j.ecresq.2021.03.005**

Willard, A. K., Busch, J. T. A., Cullum, K. A., Letourneau, S. M., Sobel, D. M., Callanan, M., & Legare, C. H. (2019). Explain This, Explore That: A Study of Parent-Child Interaction in a Children's Museum. *Child Development, 90*(5), e598–e617. **https://doi.org/10.1111/cdev.13232**

Winthrop, R., Barton, A., Ershadi, M., & Ziegler, L. (2021). *Collaborating to transform and improve education systems: A playbook for family-school engagement.* Brookings Institution. **https://www.brookings.edu/essay/collaborating-to-transform-and-improve-education-systems-a-playbook-for-family-school-engagement/**

Wilton, K., Shioiri-Clark, M., Galanek, G., & Murphy, K. (2017). Parenting in Displacement. *International Rescue Committee.*

Wood, D., Bruner, J. S., & Ross, G. (1976). The Role of Tutoring in Problem Solving*. *Journal of Child Psychology and Psychiatry, 17*(2), 89–100. **https://doi.org/10.1111/j.1469-7610.1976.tb00381.x**

Wood, D., & Middleton, D. (1975). A Study of Assisted Problem-Solving. *British Journal of Psychology, 66*(2), 181–191. **https://doi.org/10.1111/j.2044-8295.1975.tb01454.**

Yannier, N., Hudson, S. E., Koedinger, K. R., Hirsh-Pasek, K., Golinkoff, R. M., Munakata, Y., Doebel, S., Schwartz, D. L., Deslauriers, L., McCarty, L., Callaghan, K., Theobald, E. J., Freeman, S., Cooper, K. M., & Brownell, S. E. (2021). Active learning: 'Hands-on' meets 'minds-on.' *Science, 374*(6563), 26–30. **https://doi.org/10.1126/science.abj9957**

York, B. N., Loeb, S., & Doss, C. (2019). One step at a time the effects of an early literacy text-messaging program for parents of preschoolers. *Journal of Human Resources, 54*(3), 537–566.

Yu, Y., Bonawitz, E., & Shafto, P. (2019). Pedagogical Questions in Parent–Child Conversations. *Child Development, 90*(1), 147–161. **https://doi.org/10.1111/cdev.12850**

Zaber, M. A., Karoly, L. A., & Whipkey, K. (2019). Reimagining the Workforce Development and Employment System for the 21st Century and Beyond. RAND Corporation. **https://www.rand.org/pubs/research_reports/RR2768.html**

Zimmerman, H. T., & McClain, L. R. (2014). Intergenerational learning at a nature center: Families using prior experiences and participation frameworks to understand raptors. *Environmental Education Research, 20*(2), 177–201. **https://doi.org/10.1080/13504622.2013.775219**

Zosh, J. M., Brinster, M., & Halberda, J. (2013). Optimal Contrast: Competition Between Two Referents Improves Word Learning. *Applied Developmental Science, 17*(1), 20–28. **https://doi.org/10.1080/10888691.2013.74 8420**

Zosh, J. M., Gaudreau, C., Golinkoff, R. M., & Hirsh-Pasek, K. (2022). The power of playful learning in the early childhood setting. In NAEYC (Ed.), *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (4th ed., pp. 83–107). NAEYC.

Zosh, J. M., Hirsh-Pasek, K., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., Solis, S. L., & Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in Psychology, 9*, 1124. **https://doi.org/10.3389/fpsyg.2018.01124**

Zosh, J., Hopkins, E., Jensen, H., Liu, C., Neale, D., Hirsh-Pasek, K., Solis, S. L. & Whitebread, D. (2017). Learning through play: A review of the evidence. LEGO Foundation.

Zosh, J. M., Verdine, B. N., Filipowicz, A., Golinkoff, R. M., Hirsh-Pasek, K., & Newcombe, N. S. (2015). Talking Shape: Parental Language With Electronic Versus Traditional Shape Sorters. *Mind, Brain, and Education, 9*(3), 136–144. **https://doi.org/10.1111/mbe.12082**