

Learning *through* Play and Learning *to* Play: An Approach for All Children

For children with disabilities, learning through play goes hand-in-hand with learning to play. In 1892, educators at the Perkins School for the Blind reflected that learning is, "...carrying the fresh and natural ways of childhood into manhood; charming the pupil onward ever by the glow of discovery, making the old humdrum lesson new as the things the boy learns in the surprise of play." In 2017, Lego's Learning through Play concept reimagined learning in terms of five skills for holistic development, and play that should be joyful, active, meaningful, iterative, and social. If expanded to include support for learning to play, Learning Through Play can provide a framework for how best to unlock the potential of all children- including children with disabilities and developmental delays. When we unlock the power of all children, we can rebuild the world.



LEARNING TO PLAY

Like every child, children with disabilities can learn through play, especially during the first six years of life when children's brains are developing at a stunning rate. Children with disabilities and developmental delays, including children with delays due to trauma, first need to learn to play; to acquire the same play skills as their peers without disabilities, they need intentional support.

There are a few things children with disabilities need to boost their ability to learn to play, and learn through play. The holistic approach must be translated into a tangible, sensory learning experience. With a few adaptations, to learn to play children need:

- **ACCESSIBLE PLAY SPACE** that is safe and predictable, has stable positioning, defined borders and sections, some quiet areas with limited background noise, and appropriate



lighting/distances/visual contrast. When Universal Design is applied from the start, play spaces can be built that are accessible to all children. For children with limited movement, the placement of objects within the play space makes a difference; a few favorite objects may be placed within close reach. For children who may have difficulty moving their hands away from their

bodies to reach for toys, attaching interesting objects to a vest, bib or fingerless gloves may entice them to initiate active exploration. For others, pre-sorting blocks on a sectioned tray can help make building more efficient. Children with blindness/visual impairment can have more independent playground time when overhead obstacles are padded and areas for ball games and swings have clear visual and tactile borders.

Specialized or high-tech objects are not necessary. In every culture and country, children play and learn with everyday objects within their normal routines. A wash basin with a pillow can position a child so he feels secure and toys are within sight and reach. The shade of a tree can provide appropriate lighting, and toys made by a parent or a tin pan from the kitchen are the accessible playthings of children around the world. Families may need guidance, however, to imagine the possibilities simple household items such as a bowl and spoon provide for actively engaging their child in joyful play.



- **INFORMATION** about what's happening around them, in terms they can understand. "What is the goal of a game? What is the play space and are there defined borders? What materials/tools are used and where are they located?" With a quick scan across the play space, a sighted child can answer most of these questions and is ready to play. For children

Most incidental learning is visual. That is, most knowledge is acquired simply by looking. To gain the same knowledge as their sighted peers, children with limited or no vision need to be taught in clear, concrete and systematic ways.

who cannot gather information on their own, a mediator can help, including with social context. "What is the name or name sign of the child next to me? What are they playing right now? What are their facial expressions, body language, and body movements, and what does this nonverbal communication mean? How are other children joining in or leaving the playgroup?" Adult-child parallel play can enable information sharing, while minimizing distraction for other children. Extra support and time

may be needed especially in exploring toys/materials, transitioning from one activity to another without visual cues to anticipate what will happen next, and playing with other children whose movements may seem unpredictable. Without this careful mediation, the concepts children develop through limited or no vision may be inaccurate in some ways, there may be gaps in their concepts, and components of their concepts may not be integrated.

- **COMMUNICATION** and coaching in how to communicate thoughts, feelings, and interests to playmates, especially in the absence of eye contact and mutual gaze. Children with deaf-blindness and/or multiple disabilities may not have typical ways to communicate, like speech or sign language, and need particularly specialized support in play such as reciprocal interactions and turn-taking “conversations.”



All children expand their world by developing relationships and establishing early communication. Children with disabilities need specialized support to gradually expand their world and their communication over time, which is why communication strategies are at the core of teacher training and family support around the world.

- **AVAILABLE AND EFFECTIVE PLAY PARTNERS** inside and outside the home. Family and friends are a child’s playmates. Some children with disabilities may not learn to play



because they’ve had limited exposure to playful situations. Unfortunately, families of young children with disabilities often live with so much stress and chronic sorrow that there is little room for play and fear, awkwardness, or negative attitudes often keep peers away. Would-be playmates hover, lose interest, tease or bully, limit choices, or protect children with disabilities, rather than playing. Children with disabilities may respond by developing “learned helplessness,” or play only where they feel more control, predictability and safety. Play easily becomes repetitive, narrow, delayed, less complex, less meaningful, and solitary.

- **EMOTIONAL/BEHAVIORAL SUPPORT** to learn self-regulation and self-calming strategies, which will allow them to more actively participate in play activities. Some children may need positive behavior support and strategies to increase quality of life and lessen challenging behavior through teaching and environmental changes. Time in quiet, safe and visually uncluttered play spaces with controlled external stimulation is also important, especially for children with cortical visual impairments, neurodiversity, or behaviors on the autism spectrum. Trauma-affected children, in particular, need safe and nurturing environments to support learning through play.

LEARNING THROUGH PLAY

Once children with disabilities learn to play, like any child they thrive and learn through play. The Learning Through Play characteristics of playful experiences, and the skills for holistic development are also relevant for children with disabilities and delays, when expanded to consider the special support some children need to fully enjoy experiences and acquire new skills.

Characteristics of playful experiences

Best practices for children with disabilities shed light on how children with disabilities enjoy and connect with the Lego characteristics of playful experiences. When Perkins began sharing best practices from our campus to build the capacity of programs outside the United states, we developed the “5 Big Ideas” as guidelines for teacher training. The 5 Big Ideas informed Perkins development of the first early childhood programs for children with multiple disabilities in China, Indonesia, Vietnam, India and Thailand. They are:

1. **Use real objects and meaningful activities.** For example, to teach about automobiles, a child can learn by exploring a real car, rather than a toy car,
2. **Give children time to be independent.** Allow time to process, respond, and participate as fully as possible. The extra minutes it takes a child to put on his own shoes and socks, for example, build skills for a lifetime.
3. **Partner with families and teachers** so that children learn in meaningful ways and generalize skills across settings.
4. **Provide consistent routines and provide opportunities for making choices** throughout a child’s day.
5. **Follow and build on a child’s interests.** Guided play promotes learning at least as well and sometimes better than direct, teacher-led instruction.



Creating environments that are safe, interesting and accessible for children, then stepping back so they can independently explore them, promotes active engagement. **Active Learning** principles give children with disabilities agency in learning through play so they can be, as Ferrell describes, “doers, not done-to-ers” and unlock play that is joyful, meaningful, iterative, engaging and socially interactive for themselves. Key principles of active learning include: active participation, developmental appropriateness, limited distractions, reinforcing to the child, and repeated opportunities. This approach stems from the work of Lilli Nielsen, who first wrote “The Comprehending Hand” in Danish in 1976. Internationally recognized for her Active Learning approach, Dr. Nielsen’s active learning strategies continue to be widely used for children with multiple disabilities and blindness/visual impairment.

Early braille literacy pedagogy and Transdisciplinary Play-Based Assessment and Intervention also play a role in supporting children with disabilities to enjoy all five characteristics of playful experiences. Early braille literacy pedagogy is introducing young children to braille. By emphasizing child-led activities like pretending to read and write, playfully exploring braille writing tools, and pairing literacy with music, it is possible to, as Hudson advocates, “Make it fun! Make it meaningful! Make it developmental!” Transdisciplinary Play-Based Assessment and Intervention are processes where teams of professionals and parents

together assess and support children in a holistic fashion. They assess by observing children’s spontaneous and semi-structured play, alone and with others, in everyday play spaces. The related Intervention is based on this assessment, and follows the same principles of team involvement, everyday play spaces, and phases of intervention.

Understanding the Lego Characteristics of Playful Experiences Through Best Practices for Children with Disabilities

Lego Foundation Characteristics of Play	5 Big Ideas (Perkins International)	Active Learning	Early Braille Literacy Pedagogy	Transdisciplinary Play-Based Assessment and Intervention
Joyful	Follow children’s interests, giving children time to explore.... and to experience success.	Provide a variety of interesting objects, accessible through multiple senses, encouraging active experimentation, curiosity and joyful discovery.	Make it fun! Pair writing and reading with music, like singing an alphabet song while reading braille ABCs.	Both the assessment and intervention revolve around the pleasurable activities of play.
Active engagement	Follow and build upon each child’s interests. Consistent routines facilitate children’s active engagement.	Active engagement is a key principle of active learning. Create accessible play spaces with interesting objects to facilitate child-initiated activity.	Balance teacher-guided and child led activities.	Children should take the lead, and the play facilitators follow the child’s lead.
Meaningful	Use real objects and meaningful activities.	Children relate new experiences to familiar ones, expanding their understanding through exploring collections of “comparables”, such as a variety of balls, or various brushes.	Make it meaningful! Children are often motivated to read and write their own names, and those of friends and family members.	Assess child performance within natural contexts.
Iterative	Give children time to independently experiment and explore, and sufficient time to process and respond.	Provide uninterrupted time and repetitive opportunities for young children to learn by exploring and actively experimenting in a consistent, interesting and accessible space.	Give children freedom to playfully explore braille symbols and braille writing tools.	In play, children explore their environment, and connect what they already know with new knowledge, skills and attitudes.
Socially Interactive	Integrate choice-making throughout a child’s day. Partnership with families is essential.	Children determine when and how to make contact and engage with others. During interactions, use approaches of offering, imitation, and sharing.	Model braille reading and writing, as children do what they notice adults and older children do.	Parents are involved throughout the assessment and intervention processes, and social interaction is child-related.

Skills for holistic development

Facilitating skills for children with disabilities and delays always requires looking at the whole child within the context of the family and community, beyond academic skills. As set out in the Expanded Core Curricula for children with visual impairment/blindness of all ages, holistic, lifelong foundations for learning include self-determination, activities of daily living, orientation & mobility, recreation and leisure, assistive technology, social interaction, and career education. This holistic approach is not new: it has been part of learning for children at Perkins since the 19th century, as noted in 1883, *“The moral, intellectual, and physical nature of the pupils is developed by a division of their time, and a variety in their occupations, which calls each into daily exercise. Four hours are devoted to intellectual pursuits, four hours to music, four to mechanical labor, four to recreation and play, and eight to sleep.”*

Six concrete examples best illustrate how children build these skills today:

1. Block Play: Bhutan Blocks

Perkins and Hejo ECCD drew on universal design principles to develop Bhutan Blocks. Children group the interlocking wooden blocks in different combinations as they build: the size and shape facilitate manipulation by children with physical disabilities or limited motor skills; the high contrast yellow and black patterns support children with low vision; and the traditional Bhutanese patterns embossed on the blocks are accessible for children who are blind, and help all children connect with their culture.



2. Action Songs: Machhli jal ki rani hain

Children the world over joyfully sing and move together to familiar action songs. Young children in an Anganwadi (early childhood program in India), for example, enjoy participating together in a familiar Hindi finger play song, “Machhli jal ki rani hain.” All children sit in a circle. Children with disabilities are strategically seated next to peers who can offer peer-to-peer support, such as modeling the hand movements, signing or gesturing. Children take turns leading the group activity. Sometimes a child who does not yet speak but who can model the hand movements is the leader, paired with a peer who sings the words of the song.

3. Word play: A pasta story

A preschool girl is enticed by long Italian words. Before she learns to read and write braille basics like the alphabet, she asks to feel braille words like “farfalle” and “fettuccine.” Her teacher makes braille flashcards, and brings uncooked samples of the pasta. In exploring them, the girl asks for vocabulary to describe the pasta she feels: “ruffled,” “spiral,” and “hollow.” Eventually, she begins practicing the alphabet. Years later this girl wins first place in a national braille contest.

4. Active exploration play: The Little Room



Lilli Nielsen's "Little Room" is a small space with walls and a top that is designed to encourage self-initiated movement, experimentation and active engagement for children with complex disabilities. Children lie down or sit inside and a variety of objects that interest the child are attached to the walls and ceiling. The objects are consistently available in predictable places for the child to find, explore and compare again and again with his/her hands and feet and with no help or distraction from adults.

5. Sharing Stories: Experience Books

Children create and re-tell their own stories using Experience Books. The process can begin with an adult and child together collecting items during a meaningful activity, such as a walk or a trip to a zoo. The child places each item into a small, clear plastic bag, attaches each bag to a page, then combines these pages in a certain order to make a "book." The child may dictate a simple story or key words, which the adult writes in print and/or braille on the page. The objects help the child to intentionally organize and elaborate on her thoughts for story-telling.

6. Early literacy play: Story Boxes

Story Boxes" are collections of real items to represent concepts in children's books. A story about a "Roly Poly Man" comes to life for children using clay and a rolling pin from the story box. The book itself includes print and braille, as well as visual and tactual illustrations. Originally developed to allow access for children with little or no vision, story boxes enhance active engagement in story time for all children.



Mapping these examples to the Lego five skills for holistic development demonstrates how Learning through Play, when expanded to include proven pedagogy in education for children with disabilities, is indeed relevant to help all children build skills for learning throughout a lifetime...from the critical early childhood milestones, to adolescence, to an adulthood of enjoying and sharing their full potential:

Lego “Super Skills” Learned Through Play Activities for Children with Disabilities

	Physical Skills	Cognitive Skills	Social Skills	Emotional Skills	Creative Skills
Block play: “Bhutan Blocks”	Manipulate the blocks, fit interlocking blocks together, balance blocks	Measure, match, sort and sequence block patterns; concentration	Sharing, turn-taking and friendship	Persistence in solving challenges Cooperative play with peers	Creative, imaginative and expressive skills by creating patterns and building with the blocks
Action Songs: Machhli jal ki rani hain	Finger and body movements accompanying the song, sitting with group	Concepts in song; following sequence of hand movements	Participation of all children together in shared activity Peer-to-peer support Collaboration in jointly leading finger play	Self-esteem, sense of achievement from active participation with peers Confidence and leadership as song leader	Represent ideas in song through movement; create own songs with accompanying expressive movements
Word Play: “A Pasta Story”	Tracking braille words with fingers in left to right movement Exploring pasta samples	Learning about lines, remembering braille letters and words Develop shape concepts, pasta concepts and descriptive vocabulary such as “ruffled”	Sharing favorite items and words with teacher	Confidence from leading the activity Advocating for her interests	Finding joy in long Italian names
Active Exploration Play: “The Little Room”	Reach, kick, shake, grasp, finger, tap, bang; use of one hand, use of two hands together	Spatial relations Object concepts (size, function, texture, sounds, shape, quantity) Comparison Object permanence	Empowerment in self-initiated movement and playing alone	Agency in a space that becomes highly familiar Self-pacing	Manipulating objects in a variety of ways, experimenting with and comparing objects
Sharing Stories: “Experience books”	Manipulating objects Book making Turning pages of books	Naming objects Beginning to understand the purpose of a book Using objects to organize thinking	Story telling Discuss, remember and share the book with others Story is based on shared experiences	Sustain interest from beginning to middle to end of project Develop confidence in telling stories	Creating a book Using objects to make up a story Making pictures to create new books
Early Literacy Play: “Story boxes”	Manipulating objects	Develop concepts, story comprehension with real objects	Use objects to retell stories to others	Develop interest in books Develop confidence in telling stories	Use objects to create own stories

LEARNING TO REBUILD THE WORLD

All children can learn to play and learn through play to become creative, engaged, lifelong learners. In 1841 a Perkins educator reflected, “A dozen blind children put into a clear room or



play-ground will make it so ring with their merry shouts, and so heartily play their simple games, as to show that bare existence is a boon...”

Expanding Learning Through Play to include the evidence on appropriate support for and experience of children with disabilities and developmental delays could yield a truly inclusive approach- in every part of the world that children live and learn. In a time when so much is broken, an expanded, bigger, more inclusive understanding of **LEARNING THROUGH PLAY, AND LEARNING TO PLAY** taps the potential of more children to rebuild the world.

AUTHORS

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REFERENCE LIST

- Active Learning Space. (n.d.) *Limited distractions*. Active Learning Space.
<https://activelearningspace.org/principles/key-points-of-active-learning/limited-distractions>
- Active Learning Space. (n.d.) *Active participation*. Active Learning Space.
<https://activelearningspace.org/principles/key-points-of-active-learning/active-participation>
- Active Learning Space. (n.d.) *Vests, aprons, gloves, belts*. Active Learning Space.
<https://activelearningspace.org/equipment/make-your-own-equipment/vests-aprons-gloves-scarves-belts>
- Allman, C.B., Lewis, S., & Spungin, S. (2014). *ECC essentials: Teaching the Expanded Core Curriculum to students with visual impairments*. AFB Press.
- Bhutan Foundation. (2020). *Introducing Bhutan blocks*. [video]. YouTube.
<https://www.youtube.com/watch?v=EpqeWk2CtwI>
- Bohm, D. (2020). Make your own baggie experience book. *Paths to Literacy*.
<https://www.pathstoliteracy.org/strategies/make-your-own-baggie-experience-book>
- Brauner, D. (2015). Rhyming dust bunnies. *Paths to Literacy*.
<https://www.pathstoliteracy.org/blog/rhyming-dust-bunnies>
- Bridgeo, W. & Caruso, B. (2014) *Total life learning: Preparing for transition. A curriculum for all students with sensory impairments*. Perkins School for the Blind.
- Bruce, S.M., Bashinski, S.M., Covelli, A.J., Bernstein, V., Zatta, M.C. & Briggs, S. (2018). Positive behavior supports for individuals who are deafblind with CHARGE syndrome. *Journal of Visual Impairment & Blindness* 112(5 - September-October), 497-508.
- Burroughs, A. & Ralmadge, A. (2002). *Learning through play with homemade toys*. Arizona State Schools for the Deaf and the Blind.
- Center for the Developing Child. (n.d.). *Enhancing and practicing executive function skills with children from infancy to adolescence*. Center for the Developing Child at Harvard University.
<http://developingchild.harvard.edu/wp-content/uploads/2015/05/Enhancing-and-Practicing-Executive-Function-Skills-with-Children-from-Infancy-to-Adolescence-1.pdf>
- Child Welfare Information Gateway. (2017). *Supporting brain development in traumatized children and youth*. U.S. Department of Health and Human Services, Children's Bureau.
<https://www.childwelfare.gov/pubpdfs/braindevtrauma.pdf>
- Cushman, C. (2015). *Designing a playground for children who are blind*. Perkins eLearning.
<https://www.perkinselearning.org/activity/designing-playground-children-who-are-blind>.
- Diamond, K.E. & Hong, S. (2010). Young children's decisions to include peers with physical disabilities in play. *Journal of Early Intervention* 32(3), 163-177.
- Drissel, N. (n.d.). Making a story box. *Paths to Literacy*. <https://www.pathstoliteracy.org/making-story-box>
- Ferrell, K.A. (1997). *Equal in partnerships: Basic rights for families of children with blindness or visual impairments*. Perkins School for the Blind.
- Gianna, V. (2018). Blind kids create online inclusive games and play at their first tournament. *Paths to Literacy*. <https://www.pathstoliteracy.org/news/blind-kids-create-online-inclusive-games-and-play-their-first-tournament>

- Gleason, D. (2017). Early interactions with children who are deaf-blind. *National Center on Deaf-Blindness*. <https://www.nationaldb.org/info-center/early-interactions-factsheet/>
- Gleason, D., Hudson, L., & Jacobs, L. (2003-2020). *Five big ideas: Education of children with visual impairment and multiple disabilities*. [Trainings conducted in China, Vietnam, India, Thailand, Indonesia, Malaysia, Japan, Singapore, & the United States]. Perkins School for the Blind.
- Goodsir, D. (2013). Extreme Frisbee: A wholistic approach to developing literacy. *Paths to Literacy*. <https://www.pathstoliteracy.org/blog/extreme-frisbee-wholistic-approach-developing-literacy>
- Greeley, J.C. & McCall, M.D. (2018). *Teaching life differently: The expanded core curriculum for babies and young children with visual impairments*. Perkins School for the Blind.
- Hudson, L.J. (1997). *Classroom collaboration*. Perkins School for the Blind.
- Hudson, L.J. (2014). *Introducing braille*. Perkins School for the Blind.
- Jacobs, L., Perera, M.C., Tango-Limketkai, A. (2018). *A home visiting teacher's manual*. Seeing Is Believing Project / Perkins School for the Blind. <https://perkinsglobalcommunity.org/asia/resources/home-visiting-manual-for-teachers-of-children-with-multiple-disabilities-and-visual-impairment/>
- Koninklijke Visio. (2018). *Active Learning* [video]. YouTube. <https://www.youtube.com/watch?v=Y6JCeJ1HP9w>
- Linder, T. (2008). *Transdisciplinary play-based assessment, second edition*. Brookes Publishing.
- Lee, M. & MacWilliam, L. (2008). *Learning together: A creative approach to learning for children with multiple disabilities and a visual impairment (Second edition)*. RNIB.
- Marks, S.B. (1998). Understanding and preventing learned helplessness in children who are congenitally deaf-blind. *Journal of Visual Impairment & Blindness* 92(3), 200-211.
- Martin, M.B.C., Santos-Lozano, A., Martin-Hernández, J., López-Miguel, A., Maldonado, M., Baladrón, C., Bauer, C.M. & Merabet, L.B. (2016). Cerebral vs ocular visual impairment: The impact on developmental neuroplasticity. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2016.01958>
- McCarthy, M.L. & deWit, N.C.I. (2017). *Getting ready for braille!* Perkins School for the Blind.
- McDowell, N. & Budd, J. (2018). The perspectives of teachers and paraeducators on the relationship between classroom clutter and learning experiences with Cerebral Visual Impairment. *Journal of Visual Impairment & Blindness* 112(3), 248-260.
- Merimee, S., Brown, K. & Marvin, E. (2019). Promoting student engagement through partial symbols and story boxes. *Visual Impairment and Deafblind Education Quarterly* 64(2 - Spring), 30-37.
- Miles, B. (2003). Talking the language of the hands to the hands. <https://www.nationaldb.org/media/doc/hands-to-hands-english.pdf>
- Miles, B. & Riggio, M. (1999). *Remarkable conversations: A guide to developing meaningful communication with children and young adults who are deafblind*. Perkins School for the Blind.
- Minvielle, J. (2016). Learning and communication through movement. *DbI Review*, 57 (July), 5-10.
- Moore, B., Parker-Strafaci, S. (2010) Story boxes: a treasure hunt for literacy. *CTEBVI Journal* LII(3), 37.

Moore, B., Parker-Strafaci, S. (2011). Literacy starts now: a few thoughts on the importance of concept development and early literacy. *CTEBVI Journal* LIII(1), 18.

Montague, A. (n.d.). *The importance of play in the development of children with disabilities*. Training & Technical Assistance Center at Old Dominion University. <https://www.ttac.odu.edu/Articles/play.html>

Nannemann, A.C., Bruce, S.M., & Covelli, A. (2017). Positive behavior supports for a young adult with CHARGE syndrome. *Journal of Visual Impairment & Blindness* 111(2), 175-180.

Narayan, J. & Riggio, M. (2005). *Creating play environment for children with sensory impairment and additional disabilities*. Hilton/Perkins Program.

<http://www.transitionplanningasia.org/sites/tpa.perkinsdev1.org/files/creating%20play.pdf>

Newton, Gigi. (2018). The active learning approach: Using the Resonance Board and the Little Room with young blind and multiply disabled children. *Future Reflections* 37(2), 21-25.

Nielsen, L. & Robinson, A. (translator). (1994). *The Comprehending Hand*. Sikou.

Nielsen, L. (2004). Active learning and the blind, multiply disabled child. *Future Reflections* 23(2), 15–20.

Perkins School for the Blind. (n.d.). *Making play accessible*. Perkins School for the Blind.

<https://www.perkins.org/resource/making-play-accessible/>

Perkins School for the Blind Annual Reports.

(1839). *Seventh annual report of the trustees of the New-England Institution for the Education of the Blind to the Corporation* (p.3). Lewis.

(1841). *Ninth annual report of the trustees of the Perkins Institution and Massachusetts Asylum for the Blind to the Corporation*. (p.4). Eastburn.

(1892). *Sixty-first annual report of the trustees of the Perkins Institution and Massachusetts Asylum for the Blind to the Corporation for the year ending September 30, 1892* (p. 22). Ellis.

Pyle, A., Prioletta, J. & Poliszczuk, D. (2018). The play-literacy interface in full-day kindergarten classrooms. *Early Childhood Education Journal* 46(1), 117-127

Pfizer, S. (Host). (2022). Building resilience through play. [Audio podcast episode with transcript]. In *The brain architects*. Center on the Developing Child, Harvard University.

<https://developingchild.harvard.edu/resources/podcast-resilience-play/>

Recchia, S.L. (1987). *Learning to play*. Blind Children's Center.

Sandall, S.R. (2003). *Play modifications for children with disabilities*. National Associations for the Education of Young Children.

<https://qualitystartoc.org/Documents/Play%20Modifications%20for%20Children%20with%20Disabilities.pdf>

Shafer, S. (2004) An introduction to Dr. Lilli Nielsen's active learning. *Future Reflections Winter/Spring 2005*. <https://nfb.org/sites/default/files/images/nfb/publications/fr/fr24/issue1/f240111.htm>

Schultz, M. (2017). Understanding concept development and related challenges for academic students with blindness. *TX SenseAbilities* 10(3, Summer), 12-17.

Skene, K., O'Farrelly, C.M., Byrne, E.M., Kirby, N., Stevens, E.C., & Ramchandani, P.F. (2022). Can guidance during play enhance children's learning and development in educational contexts? A systemic review and meta-analysis. *Child Development* 00, 1– 19 <https://doi.org/10.1111/cdev.13730>

Stanton-Chapman, T.L. & Schmidt, E.L. (2019). Building playgrounds for children of all abilities: Legal requirements and professional recommendations. *Early Childhood Education Journal* 47(5), 509-517.

Smith, P.K & Pellegrini, A. Play. (2013). *Encyclopedia on Early Childhood Development*.
<https://www.child-encyclopedia.com/pdf/complet/play>

Swenson, A.M. (2013). Beginning with braille: Challenges and choices. *Braille Monitor*, February 2013.
<https://nfb.org/sites/default/files/images/nfb/publications/bm/bm13/bm1302/bm130206.htm>

Szumski, G., Smorgorzewska, J. & Grygiel, P. (2020). Attitudes of students toward people with disabilities, moral identity and inclusive education - a two-level analysis. *Research in Developmental Disabilities* 102(July). <https://doi.org/10.1016/j.ridd.2020.103685>

Wright, D. (2014). *Adapting environments for individuals with vision loss*. [Webinar with transcript]. Perkins eLearning. <https://www.perkinselearning.org/videos/webcast/adapting-environments-individuals-vision-loss>

Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K. & Golinkoff, R.M. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics* 142(3).
<https://doi.org/10.1542/peds.2018-2058>

To cite this article:

Hudson, L., Gleason, D., Holland, K., Udovicic, D., Shevde, S., Gissara, D., & Arnott, J. (2022). *Learning through play and learning to play: An approach for all children*. Forthcoming.