

The Science Behind *Learn with Sesame Street*

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Social and emotional skills (SEL) are a robust predictor of positive outcomes in academics, interpersonal relationships, and life satisfaction (Lechner, Anger & Rammstead, 2019). Learning these skills helps us develop a healthy sense of self, build long-lasting relationships and manage emotions and behaviors to achieve a desired goal. For toddlers, SEL tasks include identifying and naming their emotions to support self-regulation, playing well with others and maintaining friendships, and connecting with trusted adults to solve problems, among other skills (Edwards & Denham, 2018). Research suggests that the ability to do these things well requires appropriate scaffolding and guidance, positive reinforcement, and hands-on opportunities to practice the skills. Based on this work and research on best practices for teaching SEL skills, we created the Learn with Sesame Street program, described in detail below.

The research behind multi-modal learning

The Learn with Sesame Street program includes: an interactive digital app, three play kits with hands-on games and stories, and a Grown Up Guide with classes, blogs, and play tips for caregivers. The program takes a multi-modal approach to teaching SEL skills aligning with the theory that children learn best when the learning modality matches the learning objective they are trying to master (Rumenapp et al., 2018). Multi-modal learning is the idea that the learning is more impactful when the same concepts are presented across different modes- visually, via text, with audio, with games etc (Yelland, 2018). This approach is rooted in constructivist theory, which emphasizes child-led exploration and experimentation, allowing children to take an active role in creating knowledge by making connections among pieces of information (Herr-Stephenson, Alper & Reilly, 2013). Classroom-level interventions show the effectiveness of multi-modal learning not only for academic outcomes, but also for behavioral self-regulation in preschool children (Llorente et al., 2015). Multi-modal products also allow for multiple ways to play, allowing caregivers to participate for scaffolding and guidance during co-play (Sheridan et al, 2008), and independent learning so kids can practice skills on their own, building confidence (Temban et al., 2021). To that end, we decided on these three modes of learning (the app and kits for the child and resources for grown-ups). The app is best suited to introduce children to vocabulary around emotion identification and regulation, the kits allow them to practice regulation strategies and social skills with hands-on activities and both of the modes engage children with narratives and free play games that can be used on the go and in everyday life.

The Learn with Sesame Street App

Digital media can be an effective tool to foster SEL skills (Lu, 2022). Through engaging narratives, familiar characters, interactive components, and gamification elements like rewards and levels, media-based learning is particularly effective in supporting self-awareness and social awareness (Lu, 2022). In research by Oades-Sese et al. (2021), they compared the effectiveness of an SEL-focused digital media toolkit called Little Children, Big Challenges: General Resilience (LCBC) which included Sesame characters, with a general Healthy Habits for Life toolkit (that focused on good nutrition and physical activity). They found that LCBC had a greater impact than Healthy Habits on student emotion vocabulary knowledge, sustained attention, emotion regulation and social problem solving. The effect size of the LCBC intervention was also greater compared to other SEL interventions, leading the authors to conclude that one reason for positive behavior change was children's attraction to and engagement with the Sesame Street characters. Children tend to listen and model behaviors when they see trusted and familiar characters doing (Harris, 2012).

When it comes to learning behaviors such as playing with others, asking for help, and talking about emotions, the element of trust and safety may play an even greater role in fostering learning transfer compared to other subject areas. Our partnership with Sesame Workshop allowed us to leverage Sesame Street's IP and characters as conduits of knowledge transfer in the app. The app, designed with children's ages and stages in mind, includes both interactive games and linear videos for kids to engage with. All content was playtested to determine the appropriate level of difficulty, types of scaffolding needed (for example, voiceover hints and visual cues), and curricular datasets (for example, emotion words and regulation strategies for both early learners and older learners). The content is organized into "units" or "playlists" comprised of four pieces of thematically linked content (ex: Trying New Foods): a mix of interactive games, stories, and songs. The appeal of this format as well as all content was tested with children and iterated on based on feedback.

The Learn with Sesame Street Kits

While skills such as emotion identification and awareness can be effectively taught through digital play, skills related to building relationships and managing emotions are best learnt through hands-on play, where children can practice and apply skills in an emotionally safe setting. Hands-on play with kits, games, and stories give children space to be creative, try new things, problem solve, and think outside the box. For example, a study with kindergarteners showed that using calm-down toolkits in the classroom helped students learn and use emotion regulation skills (Sullivan, 2023). The three play kits in the Learn with Sesame Street program feature the same characters seen in the app, reinforcing children's parasocial relationships with them. The kits, however, also enable children to insert themselves into the story, making the experience more interactive and personal than possible in the digital app.

The kits include games where children “take turns” with Abby (a Sesame Street character) to meet a shared goal in a game, practice belly breathing with Elmo when he’s feeling nervous, and use situation cards to practice naming emotions in others. These games were designed to help kids actively practice strategies and apply skills to real life while staying true to the Sesame Street ethos, ensuring a sense of safety and familiarity. Since we wanted the kits to be engaging for kids across the 2-4 age range, we included multiple ways to play the games– one for early learners and one for growing learners). This allows caregivers to choose the appropriate level and extends the kits' usability over time.

The *Learn with Sesame Street* Grown-Up Guide

Another crucial component of teaching SEL skills in early childhood is the role of caregivers. A commonly used theory in parenting science is the Bronfenbrenner model of development (Bronfenbrenner, 1979) which posits that children learn through multiple contexts- the home, their school, their community, and the world around them. According to this model, when it comes to learning pro-social behavior and emotion management skills, caregivers are the first teachers. Development of healthy SEL is founded on healthy and positive parent-child relationships (Denham & Weissberg, 2014). However, in focus groups with parents, we heard they lack confidence in teaching these types of skills to their children. Thus, the Grown Up Guide portion of the *Learn with Sesame Street* program was designed to empower parents with language and ideas on how to foster these skills everyday through informal learning moments and open communication. The Guide includes actionable play tips parents can implement with little-to-no materials, short classes delivered by learning experts with the language parents can use to create an accepting and validating environment that encourages kids to share their feelings, and blog articles for them to dive deeper into developmental milestones around these skills.

The Sesame Street neighborhood

Learn with Sesame Street is intentionally designed and set in the fictional Sesame Street neighborhood, with familiar landmarks such as Hooper’s Store and the community center. This neighborhood format was used for a few reasons. For children who are familiar with Sesame Street characters, they know them as they exist in the Sesame Street world, (for example, they know Cookie Monster lives above Hooper’s store), which is an important part of a meaningful parasocial relationship (Bond & Calvert, 2014a; Brunick et al., 2015). The setting on Sesame Street also offers opportunities to model behaviors and vignettes in places children encounter in their daily life, for example, having an argument with a friend on the playground, joining new friends at school, going to the library with a caregiver, to name a few examples. Young children learn better from media when they can easily connect what they see to a real-world experience (Troseth, Saylor & Archer, 2006). Lastly, themes of friendship, feelings, and caring are interwoven into the design of Sesame Street, making it a natural context for SEL skills to be modeled.

Research behind the curriculum

The CASEL 5 is the gold standard for SEL curriculum for all ages and includes five broad and interrelated areas of competence- self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Denham, 2018). For our program, we grouped these larger skills into three easily digestible themes that build naturally on one another: self, social, and community or as covered in the program: All About Feelings, Managing Big Feelings, and Friendship and Kindness. In each bucket, as detailed below, we include content that introduces a concept, encourages children to apply the concept in a familiar and new context, and gives opportunities for co-play to practice the skill with a caregiver.

All About Feelings is the first theme that introduces children to the names of emotions, what they might feel like in our body, and what kinds of situations might evoke them. The app and kit content around this theme include naming feelings in themselves and others, talking about what situations might be causing those feelings, how we may have different feelings from others, and more generally, that all feelings are valid. The mantra used here to empower kids to name and accept their feelings is “I can say how I feel!” Games in the app such as *Face It Place It* allow kids to make up to 15 different feeling faces, mixing and matching eyes and mouths to see what expressions might look like on different faces. Designed as a free play experience, this game has no right or wrong answers in line with the idea that all feelings are valid and may look different. In the kit, the *Match and Imagine* cards and *Hop To It Tiles* introduce the concept of situational awareness, the idea that some situations evoke certain emotions. In the game, kids are encouraged to tell a story about what they see the characters doing and how they are feeling.



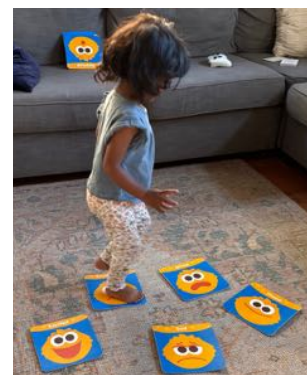
Match and Imagine Cards: memory game encourages kids to notice how the same emotions can look different in different faces



Situation Cards: encourage storytelling and narrative play



Face It, Place It: free play game that allows kids to make faces and provides celebratory feedback when they get a correct match



Hop To It Tiles: encourages kids to name the emotions they see as they hop to them

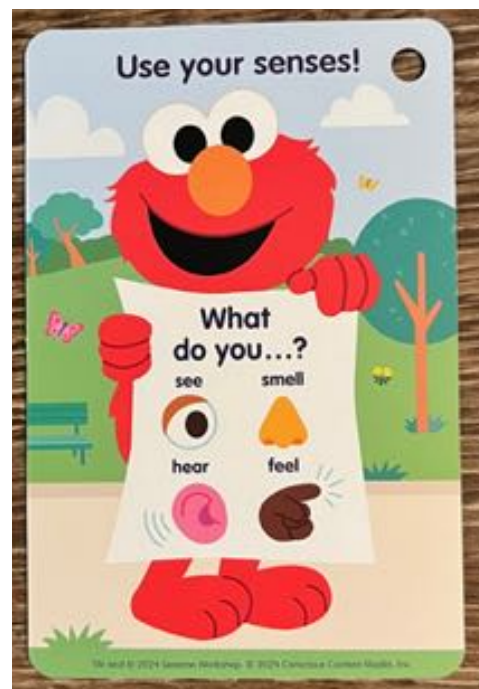
Managing Big Feelings is the next step to emotion identification, focusing on regulation of emotions and responsible management of behavior. The content here focuses on equipping kids with a “toolkit” of child-friendly strategies that can be used to manage a big feeling. It includes sensory, cognitive, breathing, and body-awareness strategies to accommodate different situations and allow the child to see what works for them. Branching stories and classes in the app such as Duckie Dispute and Bedtime Team allow kids to choose which strategies the characters use so they can see them modeled in real life situations. The mantra repeated here empowers kids to try new strategies and notice how they feel after with “I notice...I feel...I can”. In the kits, children explore how they can do these strategies in the real world, such as going on a mindful scavenger hunt around the house to ground themselves or using an Elmo stuffie as a sensory toy to support them when they have a big feeling.



Duckie Dispute: Bert and Ernie need help with their big feelings and the child helps them find a solution



What To Do Choo Choo: gets kids practicing the strategies they land on (sensory, cognitive, body-awareness, breathing)



Mindful Scavenger Hunt: encourages kids to use all five senses to ground themselves

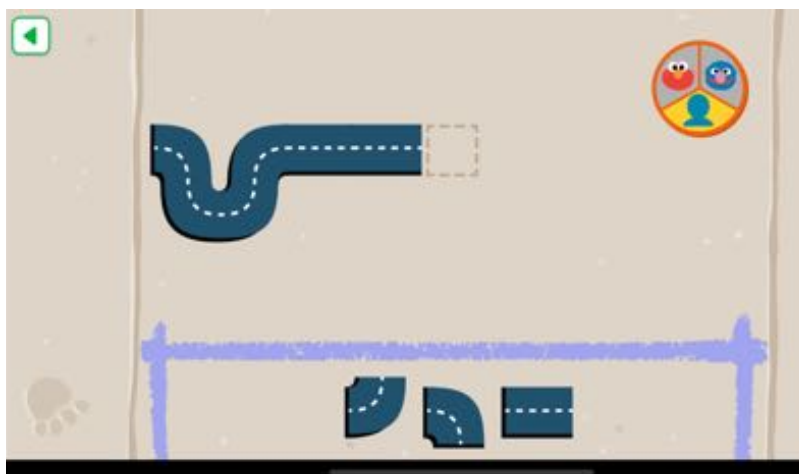
Friendship and Kindness, the final theme, takes the child into social spaces they participate in with peers and caregivers: at home, in classrooms, and in their community. It helps them apply the foundational emotion and regulation skills in the broader context they live in, by helping them make new friends, manage conflicts, and show kindness to others. The app has short vignettes and stories that show how we can do small things to show friends and family we care about them. Games in the app such as Taking Turns Track and A Toy for Slimey model and depict how when friends listen to each other and work together, they can make new games and new friends. The mantra repeated here is “It feels good to be kind”. In the kits, children practice working towards a shared goal in a game where they have to take turns to make ice cream sandwiches and work with a friend to complete a balancing task.



Spin and Stack: builds prosocial skills as kids take turns spinning to get the ingredient they need for the ice cream sandwiches



It Feels Good To Be Kind: Carly helps Elmo understand that kindness can be shown in small ways



Taking Turns Track: Grover and Elmo learn that it's always better when they play together! Your child gets to help them build a road



Buddy Balance: encourages kids to take turns feeding Cookie Monster his favorite cookies

Implications and Use

The *Learn with Sesame Street* program is intended for individual use, though it can be used in classrooms and larger settings as well. A pilot study with 2.5-4 year old children showed that the program was effective in improving children's observed receptive and expressive emotion knowledge and parent reports of their emotion regulation skills (Chary, Wright, Kaplan, Gibson & LeVos, 2024). After three weeks of use, children showed statistically significant gains on emotion expression and knowledge tasks. In questionnaires, parents also reported a statistically significant increase in use of sensory and mindfulness emotion regulation strategies from Time 1 to Time 2. Parents reported their children enjoyed using the app and kits on their own and with them. They reported enjoying the multi-modal nature of the program, as it allowed them to choose activities based on whether they wanted something to do at home or on the go. A larger scale study is planned to explore the effectiveness of the program with a larger sample size and to elucidate the mechanisms through which the program is effecting learning and behavior change.

References

- Bond, B. J., & Calvert, S. L. (2014). A model and measure of US parents' perceptions of young children's parasocial relationships. *Journal of children and media*, 8(3), 286-304.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard university press.
- Brunick, K. L., Putnam, M. M., McGarry, L. E., Richards, M. N., & Calvert, S. L. (2016). Children's future parasocial relationships with media characters: The age of intelligent characters. *Journal of Children and Media*, 10(2), 181-190.
- Chary, M., Wright, C., Kaplan, M., Gibson, A., & LeVos, J. (2024). Exploring the Effectiveness of the Learn With Sesame Multi-Modal SEL Program on Child Social and Emotional Outcomes.
- Cole, E. (2024). Media Literacy: Empowering Critical Engagement in the Digital Age. *Global Media Journal*, 22(70), 1-3.
- Denham, S. A., & Zinsser, K. M. (2014). Social and emotional learning during early childhood. *Encyclopedia of primary prevention and health promotion*, 925-935.
- Denham, S. A. (2018). Keeping SEL developmental: The importance of a developmental lens for fostering and assessing SEL competencies. *Frameworks Briefs*, 1(2), 127-152.

Edwards, N. M., & Denham, S. (2018). *Early social-emotional development*. Baltimore, MA: Brookes Publishing.

Harris, P. L. (2012). *Trusting what you're told: How children learn from others*. Harvard University Press.

Herr-Stephenson, B., Alper, M., Reilly, E., & Jenkins, H. (2013). *T is for transmedia: Learning through transmedia play*. In Los Angeles and New York: USC Annenberg Innovation Lab and The Joan Ganz Cooney Center at Sesame Workshop.

Lechner, C. M., Anger, S., & Rammstedt, B. (2019). *Socio-emotional skills in education and beyond: recent evidence and future research avenues*. In *Research handbook on the sociology of education* (pp. 427-453). Edward Elgar Publishing.

Llorente, C., Pasnik, S., Moorthy, S., Hupert, N., Rosenfeld, D., & Gerard, S. (2015). *Preschool Teachers Can Use a PBS KIDS Transmedia Curriculum Supplement to Support Young Children's Mathematics Learning: Results of a Randomized Controlled Trial*. Society for Research on Educational Effectiveness.

Lu, X. (2022). *Social and emotional learning through digital media: a systematic review of literature from 2010 to present*.

Oades-Sese, G. V., Cahill, A., Allen, J. W. P., Rubic, W. L., & Mahmood, N. (2021). *Effectiveness of Sesame Workshop's Little Children, Big Challenges: A digital media SEL intervention for preschool classrooms*. *Psychology in the Schools*, 58(10), 2041-2067.

Rumenapp, J. C., Morales, P. Z., & Lykouratzos, A. M. (2018). *Building a cohesive multimodal environment for diverse learners*. *YC Young Children*, 73(5), 72-78.

Sheridan, S. M., Marvin, C., Knoche, L., & Edwards, C. P. (2008). *Getting ready: Promoting school readiness through a relationship-based partnership model*.

Temban, M. M., Hua, T. K., & Said, N. E. M. (2021). *Exploring informal learning opportunities via youtube kids among children during COVID-19*. *Academic Journal of Interdisciplinary Studies*, 10.

Troseth, G. L., Saylor, M. M., & Archer, A. H. (2006). *Young children's use of video as a source of socially relevant information*. *Child development*, 77(3), 786-799.

Yelland, N. J. (2018). *A pedagogy of multiliteracies: Young children and multimodal learning with tablets*. *British Journal of Educational Technology*, 49(5), 847-858.