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Language- and Literacy-Rich Environments: Strategies for Young Deaf Children

By Kristen Secora, Marissa Ramos, Brittany Lee, and Cheryl L. Shahan

Young children do not develop language skills by studying grammar and rules for forming sentences. Children's brains are wired to acquire language naturally; all they need is exposure (Petitto, 2000). This exposure occurs in many forms. Children learn as they see language directed at them. They learn as they see language that flows around them in their environment. They learn as they observe adults interacting through language with each other, adults interacting with other children, and children interacting with each other. Many opportunities for language learning are lost to deaf children if they are not surrounded by other signers (Hauser et al., 2010). In fact, the loss can be so severe that deaf and hard of hearing children can be at risk for language deprivation (Hall et al., 2019), a neurodevelopmental disorder that negatively impacts cognitive, linguistic, behavioral, and social development.

Just as exposure to a spoken language supports language development for hearing children, exposure to sign language—incidentally as well as directly—supports language development for deaf and hard of hearing children. With exposure to a visual language, deaf and hard of hearing children acquire language naturally, meet appropriate language milestones, and develop strong language skills. In turn, strong language skills are important for social-emotional and academic development as well as for establishing healthy relationships within the home, school, and community.

To promote environments that are rich in language for deaf and hard of hearing children, our team of American Sign Language (ASL)/English bilingual researchers, university professors, and speech-language pathologists from institutions in different parts of the country present some

Photos courtesy of Marissa Ramos





practical strategies. These strategies can help parents, especially those who did not learn signs as their first language, to communicate more frequently with their young deaf or hard of hearing children and help ensure the development of their strong early language skills.

Strategies to Increase Use of Signs in the Home

For families who learn sign language after the birth of their deaf or hard of hearing child, signing may not be natural or easy at first. In fact, it may require planning and conscious implementation. However, it is essential. When a child's family and all members of the educational team know sign—and foster sign language-rich interactions with children—the result is robust exposure to various language models and development of strong early language skills.

Here are some strategies that may help parents, caregivers, and educational professionals to increase their use of signs inside and outside of the home, enriching the language environment for deaf and hard of hearing children:

 Modeling—Modeling is the act of exposing the child to a variety of linguistic stimuli (e.g., individual signs and sentences with

Above: A speech-language pathologist models the sign *again* as a young child copies it.

two or more signs). This means engaging and communicating with the child in ways that are authentic and enjoyable. Validate what the child says by acknowledging and responding to them. Focus on modeling signs that are used frequently. These signs are often the same as the spoken words you would use frequently with a young hearing child, including signs for *more*, *open*, *help*, *go*, and *stop*. Be sure to use the signs in different contexts to help the child develop a versatile vocabulary.

Narration—Narration, sometimes referred
to as self-narration, is articulating what is
happening as it is happening. Articulate
what is happening from your own
perspective or from your child's perspective.
This can occur throughout the day as you
use language to describe your actions as you
are eating dinner or as your child is taking a
bath. Make sure to add how you are
thinking or feeling as you make note of your
actions through language.

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• Follow the child's lead—Get on the child's level. Literally sit or kneel on the floor so you and the child are at eye level with each other. Join the child in activities that are naturally motivating, such as playing with stuffed animals or cars, and communicate with them about these activities.

- Wait and prompt—Children understand vocabulary before they can use words to express themselves. When you engage children, give them time to respond but do not require a response. This is sometimes called the expectant pause. This pause provides children with an opportunity to sign without pressuring them to do so.
- Use more than nouns—Instead of pointing to an object and merely naming it, add information, perhaps noting what the object does, how it is used, or what it looks like. Use verbs and adjectives. Adding fingerspelling reinforces vocabulary and develops pre-literacy skills.
- Communicate for a variety of reasons—Comment on a picture, request a snack, describe a toy, express your thoughts and feelings, persuade a friend, or protest activities you do not like or want to do (e.g., "I don't want a bath."). The child will observe, and learn how to use, the language you use to express your wants, needs, and preferences.
- Incorporate signing into daily routines—Integrate some or all of

Left: Modeling more during meal times can provide important language learning opportunities, even when the child does not copy it immediately.

these strategies into your

ensure children have ample opportunities for receptive and expressive language practice. Start by choosing one daily activity or a 10-minute period to focus on language. Figure 1 shares some ideas for integrating language and literacy into everyday routines.

Begin Building Literacy with a Signing **Foundation**

Literacy skills are built on the foundation of language skills. In fact, ASL skill and fingerspelling skill are two leading predictors of a child's reading ability (Sehyr & Emmorey, 2022). A language-rich environment supports literacy skills by allowing children to explore text both in their books and in their environment. To help signing children connect language to literacy, try the following techniques:

- Use chaining (Humphries & MacDougall, 1997)—This technique presents a concept through a chain of expressions that mean the same thing. For example, to illustrate the meaning of sand, you would sign sand, then show actual sand, then fingerspell S-A-N-D. You can also add the spoken or printed word to the chain. This technique facilitates children connecting signed vocabulary to printed language.
- Fingerspell—During a walk or a drive, fingerspell the road signs to

DAY IN THE LIFE LANGUAGE STRATEGIES FROM BREAKFAST TO BEDTIME PLAYTIME · Rather than quizzing your child on the names, number, or colors of toys, build language by narrating what they are doing with them. AT HOME · Model a variety of ASL and English vocabulary as part of your everyday routines like washing the dishes or walking the dog AROUND TOWN · Draw attention to signs and logos. Understanding that symbols carry meaning is an important pre-literacu skill OUTDOORS - Play hide and seek with your child's favorite stuffed animal. Build joint attention by pointing to and exploring spots where the toy might be hiding. MEALTIME · Build ASL and fingerspelling games into everyday tasks. Think of signs that use the same handshape: FRUIT, FRENCH FRIES BATHTIME · Try repeating a new word in many phrases to build vocabulary: DUCK YELLOW, DUCK DIVE. THREE DUCK SWIM STORYTIME · Take turns pointing to pictures or words and labeling them with the sign or fingerspelling BEDTIME · Have your child reflect on their day and recount a story of one thing that happened to them that day

> your child. For preliterate children, emphasize the overall movement of the fingerspelled word and match handshapes to printed letters as they learn to read. Fingerspelling can build awareness of signed and spoken phonology, which can both support reading.

 Play language games in ASL— Remember, signs are not made up of sounds but of handshapes, positions,

and movements. Think of the sign for *flower* and the sign for *home*. Note how the handshapes are the same, making these words rhyme in ASL much like *cat* and *bat* rhyme in English. Tell ASL number stories and ABC stories that play with handshapes. If you need help finding these stories, there are some good ones on the internet.

- Place signs on the page near the print that represents the English translations—It can be difficult for children to attend to pictures, text, and a signing communication partner all at once. Adjust the usual sign placement by producing the sign on the page or on the child's body to keep the child's attention focused on the story.
- Connect concepts from the book to the real world—This means books about sand or turtles might support a trip to the beach or the zoo.
 Ensure attention is drawn to the connection between the pictures of turtles in the book and the live ones at the beach or in the zoo.
- Compare how you would say something in ASL and English—
 For example, "Where do you want to have lunch?" might translate in ASL to two signs and a specific facial expression. Translating and noticing differences between languages builds metalinguistic knowledge for multilingual children.
- Call attention to print in the environment—Draw attention to signs and logos around town, like stop signs or the McDonald's arches. This builds awareness and teaches the important pre-literacy skill that symbols carry meaning.
- Make reading special—Trips to the library and bedtime stories are shared experiences that facilitate bonding and enjoyment and build positive attitudes toward reading.

For more suggestions, check out the



Laurent Clerc National Deaf Education Center's (n.d.) online resource, 15 Principles for Reading to Deaf Children, at https://clerccenter.gallaudet.edu.

As Much as Possible As Often as Possible

Children—deaf, hard of hearing, and hearing—need exposure to accessible language from birth to develop strong language skills. Strong early language skills lay the foundation for social interactions, literacy skills, and educational success. Further, deaf children who do not experience access to language when they are very young may experience language deprivation

Left: A parent and a child both sign *pig* during a shared reading activity.

(Hall et al., 2019), which requires focused intervention from a variety of professionals, including teachers of the deaf, speech-language pathologists, Deaf Mentors, and the child's parents.

Children are naturally motivated to communicate. By following their lead, adults can model language and enrich their children's learning anywhere and at any time. Equally important, while helping them develop language and literacy skills, parents, caregivers, and educators will be communicating with their deaf or hard of hearing child and building interpersonal connections. With a bit of awareness and creativity, adults can nurture the language and literacy development of their deaf or hard of hearing child, enjoy meaningful communication, and form deep emotional bonds all at the same time.

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References

Hall, M. L., Hall, W. C., & Caselli, N. K. (2019). Deaf children need language, not (just) speech. *First Language*, *39*(4), 367-395.

Hauser, P. C., O'Hearn, A., McKee, M., Steider, A., & Thew, D. (2010). Deaf epistemology: Deafhood and deafness. *American Annals of the Deaf*, 154(5), 486-492.

Humphries, T., & MacDougall, F. (1997). *Adding links to the chain: Discourse strategies in ASL teaching.* Manuscript. Teacher Education Program, University of California, San Diego.

Laurent Clerc National Deaf Education Center. (n.d.). 15 principles for reading to deaf children. Retrieved from https://clerccenter.gallaudet.edu/ndec/early intervention/15-principles-for-reading-to-deaf-children/

Petitto, L. A. (2000). The acquisition of natural signed languages: Lessons in the nature of human language and its biological foundations. In C. Chamberlain, J. P. Morford, & R. I. Mayberry (Eds.), *Language acquisition by eye* (pp. 41-50). New York: Psychology Press.

Sehyr, Z. S., & Emmorey, K. (2022). Contribution of lexical quality and sign language variables to reading comprehension. *Journal of Deaf Studies and Deaf Education*, 27(4), 355-372.

