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VISUAL LANGUAGE & VISUAL LEARNING RESEARCH BRIEF:



FAMILY INVOLVEMENT IN ASL ACQUISITION

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LEARNING FROM RESEARCH

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Key Findings on the Role of Family Involvement in ASL Acquisition

- Parental involvement is a critical factor in deaf children's language acquisition.
- Early language acquisition, whether spoken or signed, contributes to improved social, cognitive, and literacy skills.
- Natural signed languages, such as American Sign Language (ASL), have emerged from communities of Deaf people around the world.
- Signed language development is similar to spoken language development; similarities outnumber differences.
- There is a critical period for language learning; children who learn ASL later (age 5 years and beyond) are less fluent and make errors in language that carry on into adulthood.
- There is no evidence to suggest that learning ASL will negatively influence the development of speech.
- Resources for parents are essential to achieve optimal language learning for deaf children.

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“Teaching” vs. “Learning” Language

Hearing parents do not usually think about teaching language to their newborn babies. Babies have access to language from inside the womb and after their entrance into the world, they begin listening to and processing the sounds around them.¹ Language development follows a natural progression and is typically learned implicitly rather than explicitly taught.² However, deaf babies are not surrounded by spoken language in the way that their parents assume. Parents of deaf children often find themselves in the unique situation of not knowing how to communicate with their child. They can also be faced with conflicting or misleading information about communication paths involving signed language and amplification technology.

However, regardless of the language used (signing, talking, or a combination of both), parents of deaf children will need to take an active role in teaching and facilitating their child’s language learning.³ Families who communicate through a natural signed language, such as American Sign Language (ASL), are learning a new language in a new “modality” (using their eyes and hands instead of their ears and mouth). Parents will need to be familiar with language milestones and work on specific language targets with their children to be sure their child’s signed language learning is developing at an appropriate rate. Active involvement in promoting effective communication between the deaf child and the non-deaf people in the child’s environment is also important.⁴ Resources for parents with deaf children are essential to support them in their own language learning and to achieve optimal language development for their children.

This brief aims to provide parents with a fundamental understanding of ASL acquisition and to suggest strategies for how families can become involved in promoting ASL development and

learning.

Distinguishing Between “Speech” and “Language”

It is important to distinguish between the terms “speech” and “language,” as they are often used to mean the same thing, but they actually have very different meanings. Speech is simply the ability to make sounds through movements of the mouth. By contrast, language is our understanding and use of words, grammar, and conversational rules. Language includes all the words we know, how we put these words into sentences and how we understand and express ideas and feelings. Speech is one way to express language, but it is not the only way. Language can also be expressed through signs or writing. In signed languages, such as ASL, facial movements and the shapes, movements, and positions of the hands are used to express meaning and ideas.

Studies examining ASL show that it functions in the same way as spoken languages.⁵ It allows people to request, command, argue, and persuade as well as to express feelings, tell jokes, and create poetry. In this way, language, not speech, is the key to making friends, developing thinking and learning skills, and doing well in school. This is also true for children learning signed languages, like ASL, but there are some unique features about a language that is expressed through the hands and eyes instead of the mouth and ears.

Understanding the Unique Features of American Sign Language

American Sign Language is the primary language of the deaf population in Canada and the United States.⁶ ASL is not based on English or spoken language; it is a separate and independent linguistic system. Similar to all languages, ASL has its own

grammar rules that allow people to express complex ideas.⁷ ASL is expressed in unique ways because it is a visual language, as compared to a spoken language. In a spoken language, sounds are processed sequentially, meaning that a person cannot hear two sounds at the same time very well and louder sounds will block out other sounds. Spoken languages are organized in a sequential order (one sound following another) to accommodate this kind of processing. Speech sounds are added to words, or words are added to sentences, to change or add to the meaning. In contrast, visual information is processed spatially and simultaneously. This means that when we see things we remember where they are located and we can see two things at the same time. Signed languages take advantage of how we process visual information and use space and movement to incorporate grammatical information and change meaning.⁷ In the way that spoken languages are organized to accommodate the processing of sound, ASL is organized to fit with the way eyes and the other senses take in and make sense of visual information.

Although the differences between processing information through our eyes or our ears shape spoken and signed languages, it is important to emphasize that all language learning is really about the mind. So whether or not it is perceived through the eyes or the ears, expressed through the mouth or the hands, signed and spoken languages are processed by the brain in a similar way.⁸ This core assumption allows us to apply shared principles of language development across languages and across modalities (sign, speech, print).

Language Acquisition Similarities and Differences

The process of acquiring ASL has been studied in families where deaf children are born to deaf parents. These children, who have access to ASL

from early childhood, share the typical language milestones and patterns of children learning a spoken language.⁹ During their first year, deaf babies develop their visual skills to focus on signing in the same way that non-deaf babies begin to discriminate speech sounds unique to the language spoken around them. Deaf babies also “babble” in signed language; they make random movements of their hands and fingers that resemble signs.¹⁰ At approximately one year of age these infants begin to use their first meaningful signs.¹¹ Some of these signs may be simplified, in the same way that non-deaf babies initially mispronounce words, i.e., “wawa” for “water.” A child then combines two signs together, using simple but grammatical sentences, and then acquires the more complex structures of ASL. At the age of five years old, these deaf children have mastered the majority of the structures of ASL. This development is similar to non-deaf children who enter kindergarten with a solid base in their spoken language. Children of deaf parents also experience periods of over- and under-generalization of ASL rules, just like children learning English.^{12, 13}

Importance of Parent-Child Interaction

Research has shown that children with more opportunities for communicating with parents, siblings, peers, and other adults develop better language skills.^{14, 15} Deaf children, like all children, need access to parents and peers they can communicate with easily so they learn about what is happening around them. Parents are learning ASL along with their deaf child and may sometimes feel like they are not skilled communication partners. However, research shows that it is important for parents to sign consistently and to the best of their ability; signing while children are very young leads to long-term cognitive and linguistic benefits. Children under five years of age tend to learn language at a faster pace than adults learning a

second language so it is possible that children will surpass their parents' skills in ASL.¹⁶ Early exposure to quality language is essential, and it is also essential that children receive constant positive regard from their parents in order to develop appropriate attachment.¹⁷ If parents or children feel frustrated when they try to communicate, it can influence the child's self-esteem.¹⁸ Positive and supportive relationships between parents and children can be maintained through developmentally appropriate play activities, with or without the use of language. For this reason, a balance between parenting, play, and language teaching and learning must be found in interactions between parents and their deaf children. Understanding and knowing ASL acquisition milestones can help parents foster their own ASL skills as well as those of their deaf children.

Sequence of ASL Acquisition

This section outlines what is known about the general sequence of ASL acquisition. Even so, exact ages are difficult to specify due to the large variation in exposure and access to ASL that deaf children experience. Please note that the following table is intended to provide a summary only. *The Deaf and Hard of Hearing Children's Visual Communication and Sign Language Milestones Checklist*,¹⁹ a more comprehensive checklist of ASL development, will be released by VL2 in the fall of 2013.

Age and ASL Acquisition Milestones

0 - 1 year old children:

- understand that signs are symbols to communicate meaning
- use sign babbling^{10, 11}
- first signs emerge (primarily nouns)²⁰

1 – 2 year old children:

- understand that eye gaze is needed to give and receive messages²¹

- follow simple directions
- use over 50 signs⁹
- sign about things that are present
- use two-sign combinations¹¹ and combine pointing with signs^{22, 23, 24}
- ask and understand basic questions, “who” and “what”²⁰

2 – 3 year old children:

- use over 250 signs²⁵
- begin to use fingerspelling^{26, 27}
- use negation (“no,” “none,” “not-want”)²⁵
- express emotions (signs for happy, sad, mad)²⁰
- use ASL to share daily experiences and events

3 – 5 year old children:

- maintain visual attention for ASL conversation (appropriate interruption, turn taking, gaze shifting)²⁸
- ask and understand questions, including “where,” “how,” and “why”²⁰
- use simple sentences, including subject-verb-object; complex sentences also emerge^{29, 30}
- use ASL to find out how things work, explain games, or tell stories

Activities to Encourage Visual Language Development

The interactions between parents and children that promote language development often occur naturally, including talking about the same things, repeating or expanding what children say, and simplifying language. The same behaviors and patterns of interaction between parents and children are also possible in signed language, although some adaptations are needed for visual communication. For example, it is important to make sure the child is looking at you (not the toy) when you are signing the name of the toy. In using a visual language, children and parents learn how to shift their eye gaze and attention appropriately. This is referred to as visual engagement, and it is a

unique phenomenon in the signed language acquisition process.^{33, 34, 35} Parents of deaf children can learn from the strategies that Deaf adults use for visual engagement and attention, such as tapping the child repeatedly, wiggling fingers in front of the child, and moving into the child's line of vision.^{26, 33, 36, 37, 38} Other strategies can also be used so that visual attention is not split, for example: a) allowing children to view the picture and then making sure their gaze shifts to you before signing about the picture, or b) when looking at a book with the child, signing on the page to keep all information in the child's view.³⁹ Parents will benefit from learning about these strategies and getting support and guidelines for how to use them when communicating with their deaf child. Once these strategies are learned, many games, books, and activities can easily be adapted into ASL.

ASL in Everyday Interactions

Language activities with your child can become part of your daily routine. Parents often talk to babies about what they are doing even if the baby is not understanding them. For example, a parent might say: "Now I am going to make lunch. I am going to make a sandwich. What do I need? I will need bread and cheese..." etc. Parents can initiate these kinds of interactions at home, during bath time, meal preparation time, and in the grocery store (especially if the child is in a shopping cart and eye contact is established). Parents can use these opportunities to sign to their children about the environment around them.

Language learning is best through playful interaction and also when it is meaningful. For example, parents may want to sign about going to the grocery store before they go. They might make a short list by cutting pictures out of a store flyer and gluing them to a piece of paper. Depending on the age of the child, she could hold the list at the store and try to find the items in the pictures. It is

important to establish eye contact and ensure you have the child's attention before signing. The child can also help with putting the item into a bag and the parent can help to count the number of items put in the bag. Once home the child can help put the items away. Here are a few more suggestions:

- When introducing a new game or toy to a child, it is a good idea to let the child explore the item first. If the game has many pieces the child may want to touch and play with all the pieces before they learn how to play the game. This is natural; children will need to explore and satisfy their curiosity before being ready to listen about how to play. When the child has satisfied their initial excitement, parents can then take the lead and play the game or read the book.
- Looking at books together is a common parent-child activity. For younger children (12 – 24 months), it is best to use one sign or short signed phrases. Pointing to a picture is important; make sure the child sees the picture and then makes eye contact with you to see the signs. It can be difficult for children to sit at this age so for this activity it might be helpful to try a chair such as a booster-style chair or a high chair.
- Other than the names of things and people, children generally learn opposites as part of early language, including: up/down, in/out, big/small. These concepts can be taught in the context of a game but may also be incorporated into daily life. When walking up stairs or going on an escalator, sign "up" or "down." When unpacking groceries or clothing, sign "apples out" or "shoe out."
- Turn-taking is an important social aspect of language development. When playing games it is good to sign "my turn" and "your turn" explicitly. This helps to establish a foundation for the back and forth nature of turn-taking in conversation.
- Playing games that have a hide and seek

component are often fun for young children. Parent and child can take turns hiding familiar objects. It is good to make the object easy to find. The child can hide their eyes while the parent hides the object. When the object is hidden the parent can tap the child on the shoulder and sign, “Where is the toy?” The child will then look for the toy and when they find it the parent can sign, “You found it!” Then the child can hide an object and so on.

Games with immediate consequences for young children are engaging and fun. This includes games where children can move the pieces (like cars or animals), or where something falls when they take a turn (like blocks or stacking rings). Simple board games are good for turn taking and learning to match colors and numbers.

When playing games with very young children, it is not important to follow the rules. Sometimes children will want to play with the game in a new way. This may be a wonderful opportunity to foster the child’s thinking and creativity.

For very young children the game or story may only last for a few minutes. As the child’s attention span increases (which may increase as the child learns more signs and language), they will be able to attend to games and books for longer periods of time.

Whatever the game, toy, or story, the primary goal is communication. As long as there is an opportunity to model ASL in a fun and meaningful setting, the interaction is successful.

Implications for Parents and Educators

With the development of more concrete information about the natural acquisition of ASL, there will be more explicit information available to guide parents

in facilitating their deaf children’s language development.

There are three key points we can take from the current research:

1. The similarities between signed and spoken language acquisition clearly show that both languages are processed by the brain in similar ways.
2. Because signed and spoken languages are processed in similar ways, then children require the same kind of input to learn signed language. This means early exposure to rich language and high-quality interactions with a variety of communication partners.
3. There is a window for early exposure to language that parents of deaf children can take advantage of by learning about visual engagement, positive communication, and interaction to promote ASL learning.

It is also clear that effective resources and guides are needed to provide parents with the information and tools required for the task of facilitating their own and their child’s ASL acquisition. Resources and materials, including an interactive ASL dictionary and video tutorials for parents, are currently being developed and will be available soon as part of the *VL2 Parent Toolkit*. This Parent Toolkit will be made accessible through the *VL2 Parent Information Package* website: www.vl2parentspackage.org

Translating VL2 Research

The National Science Foundation Science of Learning Center on Visual Language and Visual Learning (VL2) publishes research briefs as a resource for parents, educators, and others who work with deaf and hard of hearing children. These briefs review important research findings, summarize relevant scholarship, and present informed suggestions for parents, educators, and

professionals. The information provided in this brief is intended to explain the role of family involvement in a deaf or hard of hearing child's acquisition of ASL.

VL2 Resources for Your Family and Your Classroom

Scientific discoveries from the National Science Foundation Science of Learning Center on Visual Language and Visual Learning (VL2) at Gallaudet University have provided foundational knowledge that has been used to create important evidence-based translational resources. Key discoveries that contribute to VL2's translation of science span multiple VL2 laboratories and include the discovery that early exposure to a visual language provides visual processing and higher cognitive processing advantages; early bilingual ASL and English exposure provides powerful dual language benefits; and visual sign phonology plays an important facilitative role in the young deaf child's early acquisition of reading English in the same way that sound phonology has a facilitative role in young hearing children's accessing of meaning from English print.

VL2 has created translational, educational, and ethical resources for educators, practitioners, policymakers, parents, researchers, and the greater public. For more information, see: vl2.gallaudet.edu, www.vl2storybookapps.com and www.vl2parentspackage.org.



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