

The Benefits of Multimedia Tools: Understanding Character Perspectives for Deaf/Hard of Hearing Children Who Use Sign Language

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Understanding others' perspectives (such as what someone thinks, knows, believes, and feels) is important for building social relationships, academic success, and reading comprehension (Lecce & Devine, 2022; Dore et al., 2018). The skills associated with perspective taking (sometimes termed Theory of Mind, or ToM) develop in stages and can be impacted by a child's language abilities. These skills include understanding, predicting, and inferring others' thoughts, knowledge, feelings, or desires. ToM also includes understanding that the perspectives of others can differ from one's own thoughts, knowledge, feelings, or desires. At a more advanced level, ToM involves understanding the concepts in the table below.

Concept	Example
Figurative language	Bugs Bunny asks Elmer Fudd if he brought "his wheels," meaning his car.
Sarcasm	Bugs Bunny wanted to have a picnic today, but it is raining really hard. Bugs Bunny looks at the pouring rain and tells Tweety, "What a beautiful day for a picnic!"
Deception	Bugs Bunny told Elmer Fudd the movie ticket had cost \$15, when the ticket really cost \$12.
Lies	Bugs Bunny blamed the broken vase on Charlie Dog, but really Bugs knocked over the vase.
Someone's thoughts about another person's thoughts	Elmer Fudd thought that Bugs Bunny thought the box was empty.

One of the hallmark tests of ToM is whether a child understands that someone can have a belief that is false or not reflective of reality. An example of a false belief is seen when Sully from the movie *Monster's Inc.* (Docter, 2001) believes that Boo (the little girl) is in the trash compactor.

The audience knows that she is not. In order to interpret Sully's shocked and upset emotions, a child viewing the movie must understand that Sully thinks Boo is in the trash compactor even though she is not really in there.

Understanding this scene involves:

- Having an awareness that Sully has thoughts
- Inferring what his thoughts or beliefs are
- Understanding that Sully does not know the same thing that the viewer knows
- Realizing that Sully's mistaken beliefs cause his emotional reaction

This resource is intended to support families in building ToM skills for deaf and hard of hearing children in kindergarten through third grade.

Deaf and Hard of Hearing (DHH) Children Frequently Experience Delays in ToM

For Deaf and Hard of Hearing (DHH) children, ToM skills can be delayed if there are difficulties with full access to language (Schick et al., 2007; Lundy, 2002). This can occur in a number of ways. For example, DHH children who rely on listening in order to learn spoken language often have incomplete access to sounds. Sounds may not be clear if there are technological difficulties with hearing devices (e.g., cochlear implants) or background noise. DHH children who mostly rely on sign language may have different reasons for their difficulties accessing language. Approximately 90-95% of DHH children are born to hearing families (Mitchell & Karchmer, 2004), so the families frequently are learning sign language at the same time as their DHH child. Because the families do not know many signs at first or are not as comfortable communicating in sign, their DHH child experiences less complex language during their early years.

DHH children who use spoken or signed language can have difficulties with developing ToM skills (Schick et al., 2007).

This would include delays in learning vocabulary words like think, know, and believe that are used in understanding others' perspectives. It is important to note that DHH children with parents who are fluent sign language users (such as those with Deaf signing parents) do not typically have difficulty with acquiring ToM components because they have full access to grammatically-complex language from birth (Courtin & Melot, 2005).

How can Families Support DHH Children in Perspective-Taking?

Fortunately, intervention studies have helped to identify what families can do to improve their DHH children's ToM skills. DHH children who use spoken language can learn and practice a specific sentence structure for understanding false beliefs (Durrleman et al., 2022). An example is seen in the following sentence where the false belief is underlined: She yelled because she saw a spider in the bathtub, *but really it was a stain that looked like a spider.*



Caregivers can explain the underlined part is false and the part of the sentence in italics is reality. This direct contrast between what someone thinks or says vs. reality can help children start to figure out how people can have thoughts that are false.

Children's books can provide a good context for discussing ToM skills with DHH children who use spoken language to communicate (Chilton & Beazley, 2018).

While reading the book, a caregiver should stop every couple of pages to ask questions about what the characters see, know, think, and believe. Below are some sample questions to ask.

- Why does the character think _____?
- What does the character think about [describe an event that happened]?
- Why do you think the character felt disappointed/upset/happy about that?
- Does the one character know that the other character has those thoughts? How do you know that?
- How would you feel if the same thing happened to you? Why?

Also, while reading a book to a DHH child using spoken language, caregivers can stop to share what they think the character is thinking. The table below provides a list of the books used in research on asking questions and thinking about what book characters are thinking.

Title	Author	Publication Year
<i>The Gruffalo</i>	Julia Donaldson	1999
<i>Handa's Surprise</i>	Eileen Browne	2006
<i>Mrs. Rainbow</i>	Neil Griffiths	2006
<i>Eat Your Peas</i>	Kes Gray	2007
<i>Arthur's Tractor: A Fairy Tale with Mechanical Parts</i>	Pippa Goodhart	2003

One example from the books above is in *Handa's Surprise* (by Eileen Browne). When reading this, an adult might say, "Akeyo might be thinking that Handa is a wonderful friend."

Using Technology to Support Perspective Understanding

Videos of storybooks in American Sign Language (ASL) can be great resources for caregivers who do not feel as confident in their signing or who want to experience a book with their children rather than be the reader. Adults can view the videos with their DHH child and pause every couple of minutes (or pages if shown in the video) to ask the same types of questions provided above. Below you will find a list of websites that have repositories of ASL signed stories for you to check out.

Sample webpages with links to ASL signed stories:

- ASL Storytelling Statewide Outreach Center; Texas School for the Deaf (tiny.utk.edu/TxASLStory)
- ASL Stories Directory; American Society for Deaf Children (tiny.utk.edu/ASLDirectory)
- Video Read Alouds in American Sign Language (ASL); The Indianapolis Public Library (tiny.utk.edu/VideoReadAloudsASL)

How to Use Videos of ASL Signed Stories to Build ToM Skills

Below you will find a table of sample stories available in the ASL repositories including suggestions for ToM topics that each story can address.

Title	Reference	Possible Ways to Focus on ToM or Perspective Taking
<i>Good Night, Gorilla</i>	Rathmann, P. (1996). <i>Good night, gorilla</i> (P. Rathmann, Illus.). G. P. Putnam's Sons Books for Young Readers.	<ul style="list-style-type: none">• Point out what the zookeeper thinks and why he thinks that.• Discuss if he has a false belief.
<i>There's an Alligator Under My Bed</i>	Mayer, M. (1987). <i>There's an alligator under my bed</i> (M. Mayer, Illus.). Dial Books.	<ul style="list-style-type: none">• Discuss whether there is really an alligator under the child's bed.• Contrast what the child thinks with what is real.• Wonder together about whether the alligator is real or pretend.

Title	Reference	Possible Ways to Focus on ToM or Perspective Taking
<i>Llama Llama Red Pajama</i>	Dewdney, A. (2015). <i>Llama llama red pajama</i> (A. Dewdney, Illus.). Viking Books for Young Readers.	<ul style="list-style-type: none"> • Discuss how Llama Llama feels when Mama Llama is downstairs. • Point out that Llama Llama thinks his mama has left him. • Ask your child whether Mama Llama actually left him or if that is a false belief (a misunderstanding).
<i>Are You My Mother?</i>	Eastman, P. D. (1960). <i>Are you my mother?</i> (P.D. Eastman, Illus.). Random House Books for Young Readers.	<ul style="list-style-type: none"> • Ask your child what the baby bird thinks each time he encounters a new animal. • Ask your child if that animal is really his mother or if he just thinks it is his mother.
<i>Stone Soup</i>	Muth, J. J. (2004). <i>Stone soup</i> (J.J. Muth, Illus.). Scholastic Press.	<ul style="list-style-type: none"> • Discuss with your child whether the villagers think the stones make the soup or the vegetables. • Contrast their beliefs with what the monks know.

One example to use with a DHH child comes from the book *Good Night, Gorilla* (by Peggy Rathmann). In this book and the [ASL video](#), a gorilla secretly takes the keys from the zookeeper, gets out of its cage, and lets out other zoo animals. But all the animals stay hidden from the zookeeper, so the zookeeper does not know that they have escaped. Viewing this signed story together creates an opportunity to build the ToM skill of “seeing leads to knowing.” In the case of *Good Night, Gorilla*, it actually is not seeing the animals that leads to not knowing that they escaped.

Below are other recommendations and examples for building ToM skills while reading a variety of books with a DHH child.

1. Look for instances when the character's thoughts or beliefs are reflected in their actions. For example, in *Good Night, Gorilla*, the zookeeper thinks that the animals are all locked up tight. That is why the zookeeper goes home. Pause the video and ask your child, "What does the zookeeper think after he locks all the cages?" "What is he thinking as he is walking home for the night?" You also can model what the zookeeper might be thinking, "Maybe the zookeeper thinks, 'I'm glad all the animals are locked in their cages for the night,' or 'I'm tired and ready for bed after a long day's work.'"
2. Point out when the characters have a false belief. For example, when viewing *Llama Llama Red Pajama*, ask your child what Llama Llama thinks when his mother does not come right away. Encourage your child to think about whether Llama Llama's thoughts are real or if he made a mistake.
3. Pause when viewing the videos to predict what the character might do next based on their thoughts or beliefs. For example, ask your child, "If the baby bird in *Are You My Mother?* thinks that the chicken is his mother, what do you think he will ask her?" You can follow up with a discussion of the character's feelings: "If she says no, how do you think the baby bird will feel?"

When selecting which videos to watch, follow your child's interests and what they like. You will be surprised how frequently you can point out characters' thoughts, feelings, beliefs, and desires in almost every children's book.

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