

Print-Referencing Behaviors of Parents of Children with Hearing Loss

Mason C. Freeman and Krystal L. Werfel

KEYWORDS. Children with hearing loss, print-referencing, literacy achievement

BRIEF. The behaviors of parents of children with hearing loss and the behaviors of parents of children with normal hearing during shared book reading were compared.

ABSTRACT. Children with hearing loss have considerably lower literacy achievement than children with normal hearing. Print referencing improves emergent literacy knowledge of children with normal hearing but has yet to be evaluated for children with hearing loss. The purpose of this preliminary study was to compare print-referencing behaviors during shared book reading between parents of children with hearing loss and parents of children with normal hearing. Parents were videotaped reading two storybooks (one with high print salience and one with low print salience) to their child. The parent-child book-reading interactions were transcribed from videos and coded for print-referencing and illustration-referencing behaviors. Parents of children with normal hearing were much more likely to use print referencing than parents of children with hearing loss. Overall, parents were more likely to use illustration referencing than print referencing. Parents' use of print referencing strategies differed across print salience of storybooks. Within high print salience books, parents were most likely to use print-referencing behaviors with contextualized print. Given the substantially lower use of print-referencing behaviors by parents of children with hearing loss, future research should evaluate the effectiveness of parent training in this area.

INTRODUCTION.

Children with hearing loss are at risk for poor literacy achievement. Emergent literacy skills are the foundation for conventional literacy skills. Key areas of emergent literacy are print knowledge, oral language, and phonological awareness (Justice & Ezell, 2001). Children with hearing loss have delayed emergent literacy development, which hinders the development of more advanced literacy (Justice & Ezell, 2001).

Shared book reading is widely considered a vital activity for developing emergent literacy skills in young children (Lovelace & Stewart, 2007). However, the specific mechanisms by which shared book reading increase emergent literacy in children are not well elucidated. The benefits of shared book reading on print knowledge of children with hearing loss, who are at risk for poor literacy achievement, are particularly under-studied.

Research to date has focused almost exclusively on phonological awareness and oral language deficits of children with hearing loss (for a review, see Moeller *et al.*, 2007). The extent to which hearing loss affects children's print knowledge development has not been studied in depth. Using eye-gaze technology, Korrapati, Werfel, Barnett, and Schuele (2013) concluded that even with sufficient visual attention to print, children with hearing loss do not gain print knowledge during shared book reading when print is not referenced explicitly. Therefore, there is a need to examine the use of print-referencing behaviors with young children with hearing loss to determine whether such behaviors increase emergent literacy development.

Print-referencing behaviors are evidence-based strategies used by adults to increase young children's interaction with print during shared book reading. Print-referencing behaviors can be verbal (such as a question about print) or nonverbal (such as pointing to print). Research has determined that increasing adults' explicit print-referencing behaviors during shared book reading is an effective way for children with normal hearing, including children at risk for poor literacy achievement, to expand their emergent literacy and print knowledge. (Lovelace & Stewart, 2007). Interaction with print can be with the narrative text or with the contextualized print, if present. Narrative text is the print of the

story. Contextualized print is any text that is incorporated in the images, such as in speech bubbles or under picture flaps.

Adult print-referencing behaviors during shared book reading may be a vital method to facilitate emergent literacy development of children with hearing loss. As a first step towards an intervention study, this preliminary study compares the print-referencing behaviors of parents of children with hearing loss and those of parents of children with normal hearing. It is hypothesized that parents of children with hearing loss are less likely to use explicit print-referencing behaviors than parents of children with normal hearing. Although the primary goal of the study was to compare the illustration and print-referencing behaviors between parents of children with normal hearing and parents of children with hearing loss, the type and frequency of referencing was further explored as well.

MATERIALS AND METHODS.

Participants.

Eleven children participated in the study (mean age = 59 months; range 37 – 83 months). Two of the eleven children had hearing loss. Both wore bilateral cochlear implants. Children with known cognitive and/or visual impairments were not eligible to participate. One parent of each child read for both books. None of the parents had hearing loss.

General Procedures.

Parents were videotaped while reading two books to their children, *Spot Goes to the Circus* (high print salience) and *Night, Night Spot* (low print salience). High print salience books have fewer words and larger accompanying images per page. The words are in large, easy-to-read font, and often contextualized in speech bubbles. Low print salience books have more words per page, smaller fonts, and less contextualized print.

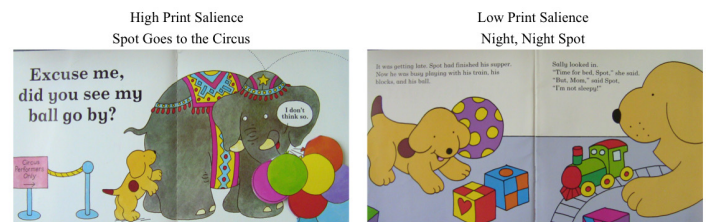


Figure 1. High and low print salience examples.

All of the videos were transcribed using InqScribe software. The verbal and nonverbal behaviors of the parent and child were transcribed. All of the transcription files were coded for print-referencing and illustration-referencing behaviors. The broad categories of print- and illustration-referencing behaviors that were coded are presented in Table 1 (adapted from Ezell & Justice, 2000). Coding included creating a unique coding system to use for all transcriptions, for example [nvp] was a code used for nonverbal print references. These codes were added in after the dialogue, utterances, and nonverbal behaviors were transcribed.

There were also specific referencing behaviors coded and they were as follows: pointing to print, tracking print, questions about print, comments about print, requests about print, pointing to illustration, questions about illustration, comments about illustration, requests about illustration, and interaction with pic-

Table 1. Broad print- and illustration-referencing behaviors.

Behavior	Description
Nonverbal Print	Any nonverbal print referencing behavior.
Verbal Print	Any verbal print referencing behavior.
Nonverbal Illustration	Any nonverbal illustration referencing behavior.
Verbal Illustration	Any verbal illustration referencing behavior.
Multiple Types of Referencing	Any combination of referencing behaviors that occur simultaneously.

ture flaps (adapted from Ezell & Justice, 2000). The files were also coded for the type of print being referenced (i.e., title, narrative, contextualized). After coding, the files were analyzed using SALT, a language sample analysis program, by programming it to count the amount of times each code was used in the transcriptions. Multiple analyses were run so that verbal and nonverbal could be separate, as well as parents of children with normal hearing and of children with hearing loss analyzed separately, and print and illustration references analyzed separately.

Data was collected regarding the total number of print- and illustration-references, the differences in referencing with high print and low print salience books, and the types of print referenced by parents.

RESULTS.

Do parents of children with normal hearing use print-referencing behaviors more frequently than parents of children with hearing loss?

Paired sample T-tests revealed that parents of children with normal hearing use print-referencing behaviors more frequently than parents of children with hearing loss ($p = .01$; $d = 1.53$). Effect sizes indicated large effects for both verbal and nonverbal print referencing for the parents of children with normal hearing (verbal: $p = .05$; $d = 1.25$; nonverbal: $p = .03$; $d = 1.26$). The parents of children with normal hearing averaged 30.4 print references during shared book reading, while the parents of children with hearing loss averaged only 2.5 print references (see Figure 2). Parents of children with normal hearing were also more likely to use nonverbal rather than verbal print referencing behaviors. Parents of children with hearing loss, however, are more likely to use verbal rather than nonverbal print referencing behaviors during shared book reading.

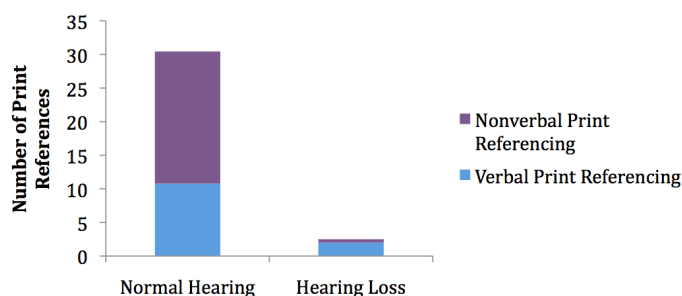


Figure 2. Use of Print Referencing Behaviors by Parents of Children with Normal Hearing and of Children with Hearing Loss

Are parents more likely to use illustration-referencing behaviors than print-referencing behaviors when reading to their young child?

In this study, parents were more likely to reference illustrations rather than print. Cohen's d indicated a moderate effect for parents of children with normal hearing ($d = .42$) and a large effect for parents of children with hearing loss ($d = .79$) (see Figure 3). Illustration-referencing has not been shown in studies to improve literacy achievement. However, illustration referencing is still important for understanding the narrative. For the purpose of this study, print-referencing behaviors are being explored because they have shown promise for success in improving literacy achievement in children in previous studies.

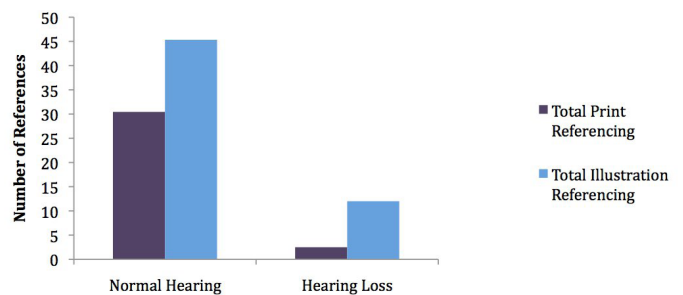


Figure 3. Print and Illustration Referencing Behaviors by Parents of Children with Normal Hearing and Parents of Children with Hearing Loss

Are parents more likely to use print-referencing behaviors in books with high print salience compared to book with low print salience?

Parents of children with hearing loss were more likely to use print-referencing behaviors in book with high print salience. However, a significant difference in the use of print-referencing behaviors was not observed for parents of children with normal hearing. For parents of children with hearing loss, there was a large effect ($d = 1.66$), but there was no effect for parents of children with normal hearing ($d = .13$). Furthermore, parents of children with hearing loss were more likely to use print-referencing behaviors with the high print salience book, but the behaviors were still used much less frequently than by the parents of children with normal hearing. The parents of children with normal hearing used an average of 16.2 print-references when reading the high print salience book and 14.2 print-references when reading the low print salience book. In comparison, the parents of children with hearing loss used an average of 2.5 print-references when reading the high print salience book and 0 print-references when reading the low print salience book.

What type of print are parents most likely to reference?

Parents were found most likely to reference contextualized print during shared book reading, with 64% of all print references recorded being references to contextualized print. The other types of print referencing were references to narrative print and print associated with the title, which accounted for 20% and 16% of all references, respectively. Contextualized print is a common characteristic in high print salience books, however it is rare in low print salience books.

DISCUSSION.

Consistent with previous findings, parents were more likely to reference illustrations than print. Novel findings from this study include (a) parents of children with hearing loss use print-referencing behaviors less often than parents of children with normal hearing, and (b) contextualized print is most frequently referenced by parents. Parents of children with hearing loss may be using print referencing behaviors less because they do not want to add stress to their child during shared book reading, or are unsure of how to communicate with them during shared book reading. This hypothesis should be studied in the future to determine the underlying causes for the lack of print referencing behaviors used by the parents. It was also found that parents of children with hearing loss are more likely to use verbal than nonverbal print referencing behaviors, even though their children may have a more difficult time understanding verbal cues because of their hearing loss.

Previous studies of print-referencing behaviors have not examined the different types of print that parents reference during shared book-reading. The present finding that contextualized print is most frequently referenced has important implications for intervention. Because contextualized print is a prominent feature in high print salience books, perhaps encouraging parents of children with hearing loss to read books with high print salience would result in a more frequent use of print-referencing behaviors.

Future research should evaluate whether training parents of children with hearing loss can increase print-referencing behaviors during shared book reading. In addition, future research should assess the effects of print-referencing behaviors

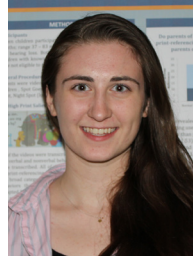
on the literacy achievement of children with hearing loss. Further investigation of specific print features in high print salience books could be conducted to determine what causes parents to reference print more. Another research direction could be with verbal versus nonverbal print referencing behaviors in parents of children with hearing loss because this study found that the parents were more likely to use verbal referencing behaviors.

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Mason Freeman is a student at Hillsboro High School in Nashville, Tennessee; she participated in the Research Experience for High School Students (REHSS) program at Vanderbilt University.