

Literacy Intervention Approaches for Multilingual Preschoolers with Hearing Loss

Jessica Gallagher, B.A., Dr. Brenda Gorman, Ph.D., CCC-SLP

Introduction

- Approximately two to three out of every 1,000 children are born with hearing loss in the United States (National Institute on Deafness and Other Communication Disorders [NIDCD], 2021).
- The Gallaudet Research Institute (2014) approximates that 82.1% of students with hearing loss speak English as the primary language, 17.9% of students speak Spanish, and 13.2% of students use American Sign Language (ASL).
- Children who are d/Deaf and/or hard of hearing (d/DHOH) often experience delays in early literacy outcomes (e.g., vocabulary acquisition, phonological awareness, and alphabetic knowledge) when compared to peers without hearing loss (Runnion & Gray, 2019).
- Previous literature addresses the impact of hearing loss on early literacy skills; however, few studies include multilingual children with hearing loss (Crowe et al. 2012).

Clinical Scenario

- Rose is a bilingual speech-language pathologist (SLP) who speaks English and Spanish.
- Her new client, Mia, is a 4-year-old with moderate, bilateral sensorineural hearing loss. Spanish is her native language, and English is her second language.
- Mia presents with few vocabulary words in English, Spanish, and sign language, limited phonological awareness, and limited alphabetic knowledge.

Clinical Research Question

- For a multilingual, preschool-age child with moderate hearing loss, will *Foundations for Literacy*, and/or *Pre-Teaching Reading Vocabulary* facilitate vocabulary acquisition and phonological awareness, when compared to *Enhanced Storybook Interaction*?

Enhanced Storybook Interaction

- *Enhanced Storybook Interaction* is an intervention designed to facilitate vocabulary acquisition for children who are d/DHOH in kindergarten and first grade (Trussell & Easterbrooks, 2014).
- During each session, a teacher of the d/DHOH (TOD) read books with real photos.
- After reading the book with the participants, the TOD asked scripted questions to elicit target vocabulary words. Figure 1 depicts examples of the scripted storybook questions (Trussell & Easterbrooks, 2014).
- Participants were asked to respond using ASL, spoken language, or both.
- Ultimately, the researchers argued that children in kindergarten and first grade who are d/DHOH can increase vocabulary identification skills given scripted storybook intervention.

Figure 1.

Scripted Storybook Questions

___ What are these? (sheep)
 ___ What is this? (calendar)
 ___ What do you do at a birthday (party)?
 ___ What is that? (raccoon)
 ___ What do you think they will buy?
 ___ Is this a raccoon? (mouse)
 ___ What did they find in the shop?
 ___ What is that? (register)
 ___ What are these? (blocks)
 ___ Is this a raccoon?
 ___ What would you want for your birthday?
 ___ What are they doing?

Pre-Teaching Reading Vocabulary

- *Pre-Teaching Reading Vocabulary* is designed to facilitate vocabulary acquisition for multilingual, school-age students with hearing loss (Cannon et al., 2010).
- The intervention consisted of pre-teaching vocabulary and administration of DVD stories in ASL.
- The researchers found that administration of the DVD stories alone was less effective in teaching expository vocabulary than when pre-teaching occurred. Thus, pre-teaching can promote vocabulary acquisition.

Foundations for Literacy

- *Foundations for Literacy* is designed to increase letter-sound correspondence, phonological awareness, and vocabulary acquisition for monolingual preschoolers with hearing loss (Lederberg et al., 2014).
- Participants used spoken language, ASL, or a combination of the two modalities.
- Intervention included the following procedures: storytelling, language activities, blending, segmenting, initial sound isolation, rhyming, and dialogic reading.
- Students in the intervention group demonstrated greater gains in phonological awareness, letter-sound knowledge, and expressive vocabulary than children in the comparison group. Thus, this curriculum supported and strengthened early literacy skills.

Evidence-Based Decision

- After appraising studies and reviewing case history information, Rose identified *Foundations for Literacy* as the strongest approach to use in intervention with Mia.
- This framework was easily adapted to address Mia's areas of need (i.e., phonological awareness, alphabetic knowledge, and receptive and expressive vocabulary).
- Additionally, Rose decided to conduct intervention in Spanish and English to promote Mia's language, literacy, and metalinguistic skills in both languages.
- Rose used sign language as a supplement in intervention.
- Rose selected picture books written in both English and Spanish (e.g., *La Princesa and the Pea* by Susan Middleton Elya and Juana Martinez-Neal).
- To target letter-sound correspondence, phonological awareness, and vocabulary acquisition, Rose selected words with initial /p/, /b/, /m/, and /n/.
- Lastly, Rose selected the following skills to support Mia throughout the intervention process: gestural cues, visual cues, pre-teaching, kinesthetic cues, and verbal cues.

Conclusion

- Multilingual preschoolers with hearing loss are underrepresented within the literature.
- Additional research should be conducted to examine effective literacy intervention protocols for multilingual preschoolers who are d/DHOH.
- Despite gaps in the literature, Rose chose the *Foundations for Literacy* curriculum as the evidence-based intervention for her client, Mia.
- She created lesson plans for SLPs working in private practice and school settings. Figure 2 shows a sample lesson plan (Gallagher, 2021).
- Rose altered the program to be administered in Spanish and English.
- Ultimately, clinicians must be prepared to utilize clinical expertise and critical thinking skills to adapt current literacy interventions for multilingual preschoolers with hearing loss.

Figure 2.

Sample Lesson Plan

Session	Lesson	Target	Vocabulary Word(s)	Books/Stories	Supplemental Activities
1	Letter-Sound Correspondence	/p/	princesa pea	La Princesa and the Pea	Craft
2	Blending	p-p-i-n-e-c-s-a p-p-i-n-e-c-s	princesa princess	La Princesa and the Pea	Dolls
3	Initial Phoneme Isolation	Initial /p/	princesa princess pea	La Princesa and the Pea	"Find the Pea"
4	Rhyming	-oca -ce	soca boca pea pea bee knee	La Princesa and the Pea	"Feed the Princess" Storytelling (Chased by a Bee)

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