

Research team describes novel approach to bilingual speech therapy

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It's a difficult, impressive feat on its own to help children work through speech problems. It's even more inspiring when you take into account the bridge of language itself.

That's a path just crossed by UNM Speech & Hearing Sciences Assistant Professor Carlos Irizarry-Pérez, in his newly published research, titled "A Complexity Approach to Promoting Within- and Cross-Language Generalization in Bilingual Children With Phonological Delays."

The work is published in the journal *Language, Speech, and Hearing Services in Schools*.

"Generalization is taking a skill that you've learned in one particular context and being able to use it in another context. Best practice is to approach generalization from the most complex aspects of [speech](#) with the belief that the simpler pieces fall in place," Irizarry-Pérez said.

This was part of a massive undertaking. Phonological delays, the inability to fully and correctly form the sound system of a [language](#), is a predictable and therefore treatable speech disorder. Irizarry-Pérez found a new way to do so.

"Speech sound disorders, which can look a lot of different ways, but in really simple terms, are difficulty with producing sounds accurately," he said. "With [bilingual children](#), there's more than one language, so it's harder, and there just hasn't been a lot done in that area for bilingual children."

Whether it's missing a certain sound, or replacing one sound with another, the causeless condition is a difficult one when working with bilingual children. It's even more challenging, given the lack of bilingual speech therapists working—a startlingly low 8%.

"We don't have a lot of bilingual therapists. So how do we address this need for children that are bilingual and have these disorders? We kind of have to be creative in how we do that," Irizarry-Pérez said.

"Try to be the most efficient about things; that's the strategy I at least recommend that clinicians take. You can always find the pieces within languages that are complex. Then find the pieces that overlap with English. That is really the novel piece we were testing and that I think is applicable to most bilingual children and their clinicians."

Irizarry-Pérez's unique approach focused on choosing complex sounds, consonant clusters, similar to both languages and integrating those sounds into children's sound systems for them to generalize.

"If we also choose sounds that are harder for the child, they will have the least amount of information, so we'll get even more generalization within the child's sound system. This is really important for children that have difficulty organizing sounds in their sound system," he said.

Once that sound gets acquired in one language, then the concept of generalization should get the child to acquire similar sounds in the other language.

"When we choose sounds as intervention targets, they're the same or very similar, at least across the child's languages, so those skills generalize," Irizarry-Pérez said. "If we can get a child to be accurate with those sounds, either of the languages will typically generalize into the other with intervention."

It's different from many other processes, which escalate from simple, single sounds to piecing harder sounds together one by one.

"We took shared sounds, complex clusters that were shared across

Spanish and English, and provided intervention in just Spanish. We looked for the generalization of the skills to be able to produce that cluster in both languages," Irizarry-Pérez said.

For a year, a handful of 4 to 7-year-olds practiced weekly in one-hour sessions. They were guided tirelessly by Clinical Instructor Andrea Martinez-Fischer and their dedicated graduate students.

"It was really interesting to watch the students grow from being brand new clinicians to being able to independently scaffold and support their clients," she said. "It is difficult to find speech therapy done in Spanish, so this work with bilingual graduate clinicians is so important not only for them and their training but also for putting out research that informs our bilingual practice as a whole."

Not only did the children themselves come out of this process with notable speech improvement, but parents earned new tools with immense gratitude.

"They all expressed gratitude and happiness just for the fact that we were considering both of the child's languages and their experiences," Irizarry-Pérez said. "These children come home in most cases to bilingual or Spanish-only environments, and the parents and children need to communicate and understand each other as well."

The marked success is just one piece of the puzzle involving phonological delays, but Irizarry-Pérez and Martinez-Fischer believe speech therapists across the country can learn something from this.

"In a minority-majority state like NM, services delivered in a child's native/home language should be accessible and is best practice," Martinez-Fischer said. "The research completed, and training of our graduate students assists in making the services provided to our Spanish-

speaking population evidence-based and appropriate for the people we serve. "

It could even help fill the current gap of bilingual speech therapists. On top of training UNM graduate students early on, if this research gains steam, it could inspire positive interventions for speech therapists hesitant to take the extra step.

"Any time I think that a therapist has a bilingual child on their caseload that has difficulty with phonology, speech sounds, and falls within that kind of age range and characteristics, the approach we were testing does work. That is to choose sounds first that are shared and that are complex," Irizarry-Pérez said.

This theory is something he hopes to eventually apply to additional language pairs beyond Spanish and English.

"We know that these language systems are connected through interdependence. There are aspects as well that are shared across languages. It's just a matter of whether those complex sounds and the sounds that are shared overlap enough to take this approach," Irizarry-Pérez said.

More information: Carlos D. Irizarry-Pérez et al, A Complexity Approach to Promoting Within- and Cross-Language Generalization in Bilingual Children With Phonological Delays, *Language, Speech, and Hearing Services in Schools* (2023). [DOI: 10.1044/2023_LSHSS-22-00128](https://doi.org/10.1044/2023_LSHSS-22-00128)

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