

Defining Bimodal Bilingualism within the field of speech language pathology

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BACKGROUND

- Speech-language pathologists work with a variety of individuals that each uniquely have their own journey in learning and using language for communication. Many times, professionals are working with those with hearing loss, who are diverse in their use of communication.
- 14.9% of children in between the ages of 6-19 years suffer from hearing loss (Niskar, 1998). This is a large group of individuals that speech-language pathologists serve, each with different goals and needs.
- According to the CDC, around 90% of children born with a congenital hearing loss are born to parents who are not deaf, which leaves a variety of options for communication and language learning. It is important to mention that identifying as one who is deaf and participating in the Deaf can mean two different things to an individual or family. The Deaf community identifies as those are deaf and communicate with a signed language (Humphries, T., & Humphries, J., 2011).

PURPOSE

- The purpose of this study is to explore how literature from the field of speech language pathology defines bimodal bilingualism in the context of research.

METHODS

- To examine what operational definitions there are within the available literature, a content review was conducted that used databases and journals within the University of Arkansas' library.
- The process examined all literature available within two databases and five preselected journals in the field of speech-language pathology using selected terminology for searches that would reflect articles that would include participants who are bimodal bilingual (see Table 1).

Table 1. Databases, Selected Journals, and Search Words Used in Content Search.

Data Base:	Journal:	Search Words:
<ul style="list-style-type: none"> CINAHL Complete Communication Source with Communication Abstracts 	<ul style="list-style-type: none"> American Journal of Audiology American Journal of Speech-Language Pathology Journal of Speech, and Hearing Research Language, Speech, and Hearing Services in School Communication Disorders Quarterly 	<ul style="list-style-type: none"> AND bilingualism or multilingualism or bilingual AND hard of hearing or hearing impairment or deaf AND bilingualism or multilingualism or bilingual AND Modality AND bilingualism or multilingualism or bilingual AND Cochlear Implants AND sign language or American sign language AND bilingual or bilingualism or dual language or multilingual or multilingualism AND hard of hearing or hearing impairment or deaf/ American Sign Language or Sign language

ANALYSIS

- Articles were analyzed for the terminology: bilingualism, multilingualism, bilingual, dual language, or multilingual and then selected if they were not excluded for the following reasons
- Exclusionary criteria used:
 - participants were not within the specific age range (0 months - 21 years) or answering questionnaires in reference to children, clients, or students that did not meet the specific age range
 - not from a peer reviewed journal
 - publishing year is before the year 1997
 - The full text of the article was unavailable
 - the use of bilingualism was referring to languages other than a sign language or English
 - the participants hearing loss was secondary to another syndrome or a syndrome or other primary disorder was causing the hearing loss in the participant,
 - lack of empirical data or a review of empirical data, and if the article or study was not relevant to answering the present question
- A qualitative thematic coding approach was used to analyze the content of the definitions used for language

RESULTS

- The results yielded 25 different articles that were synthesized for the purpose of this study. The articles that were included after reviewed for inclusionary criteria are listed below in Table 2.
- The results included 4 articles:
 - Two of which had specific operational definitions for the terminology
 - Two that had similar definitions that were pieced together through the article, but different terminology used
- Articles were also reviewed for inclusion of participants that identified as bimodal bilingual
 - The results included 2 articles listed above in Table 3

Table 2. Articles, Terminology, and Operational Definition of Bimodal Bilingual

Article Reference :	Terminology found in article:	Operational Definition:
Crowe, K., & Guiberson, M. (2019). Evidence-Based Interventions for Learners Who Are Deaf and/or Multilingual: A Systematic Quality Review. <i>American Journal of Speech-Language Pathology</i> , 28(3), 964–983. https://doi.org/10.1044/2019_AJSLP-IDLL-19-0003	Bimodal bilingual	"Knowledge and/or use of a spoken language (in oral/aural and/or written form) and a signed language (e.g., American Sign Language) or signing system (e.g., Signed Exact English, keyword signing)" pg. 967
Coryell J. & Holcomb TK. (1997). The use of sign language and sign systems in facilitating the language acquisition and communication of deaf students. <i>Language, Speech & Hearing Services in Schools</i> , 28(4), 384–394. https://doi.org/10.1044/0161-1461.2804.384	Bilingual Movement/ Bilingual approach/ Bilingual Education	"which promotes the incorporation of ASL and English (in printed and spoken forms) in teaching of deaf children" pg. 385 "fluent development in primary/first language (ASL) and transference of that language knowledge to fluency and literacy in a second language (English)" pg. 385 "In the Bilingual Education model, ASL and English are maintained as two distinct languages, with ASL serving as the primary language of instruction, ASL is introduced as an early age as the first language, and English is learned as a second language, primarily in its print form." pg.391
Hall, M. L., Eigsti, I.-M., Bortfeld, H., & Lillo-Martin, D. (2018). Executive Function in Deaf Children: Auditory Access and Language Access. <i>Journal of Speech, Language & Hearing Research</i> , 61(8), 1970–1988. https://doi.org/10.1044/2018_JSLHR-L-17-0281	Bimodal Bilingualism	"knowing the grammar of a sign language and of a spoken language" pg.1984
Nelson, L. H., Poole, B., Muñoz, K., Nippold, M., & Pratt, S. (2013). Preschool Teachers' Perception and Use of Hearing Assistive Technology in Educational Settings. <i>Language, Speech & Hearing Services in Schools</i> , 44(3), 239–251. https://doi.org/10.1044/0161-1461(2013)12-0038	Bi-Bi (bilingual bicultural)	Primary use of ASL and possible individual training in speech training for English pg. 242

Table 3. Demographics of Participants with Hearing Loss.

Article Reference:	Auditory Ability:	Communication Modality:	Number of Participants:	Age of Participants:
Crowe, K., & Guiberson, M. (2019). Evidence-Based Interventions for Learners Who Are Deaf and/or Multilingual: A Systematic Quality Review. <i>American Journal of Speech-Language Pathology</i> , 28(3), 964–983. https://doi.org/10.1044/2019_AJSLP-IDLL-19-0003	Diagnosed hearing loss	BiBi (Bimodal Bilingual)	13	4;3 to 10;8 (years:months)
Hall, M. L., Eigsti, I.-M., Bortfeld, H., & Lillo-Martin, D. (2018). Executive Function in Deaf Children: Auditory Access and Language Access. <i>Journal of Speech, Language & Hearing Research</i> , 61(8), 1970–1988. https://doi.org/10.1044/2018_JSLHR-L-17-0281	Severe or profound congenital sensorineural deafness	All deaf signers are assumed to communicate in ASL and written English	45	5;0 to 12;11 (years:months)

LIMITATIONS

- Limitations to the study and its design for the results yielded are:
 - This study was a content review; a full comprehensive systematic review that may have encompassed more articles.
 - The use of different terminology made it difficult to determine if the participants referred or used matched the bimodal bilingual definition.
 - The lack of clarity in articles to define the terminology also made it difficult to determine the exact definition.

DISCUSSION & FUTURE DIRECTIONS

- The results from this study show the lack of consistency when using the term bimodal bilingual and the need for more clarity and unity within the field of speech-language pathology to create an operational definition, as well as include more participants in research studies that identify as bimodal bilingual. There are only two studies that use the terminology, bimodal bilingual and clearly define. The two other articles introduce similar definitions, but different terminology.
- Future directions from this study:
 - This research could be continued by more publishing's in the five speech language pathology journals researched to include more studies that include bimodal bilingual participants
 - A survey could be conducted for a study that inquires professionals, educators, and parents who are working or raising children who are deaf and hard of hearing to give operational definitions for terminology: bimodal bilingual, bimodal bicultural, multilingualism, and more that are used for those who are learning multiple languages in different modalities.

REFERENCES

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- Center of Disease Control and Preventions. (2020, June 8). *Data and Statistics About Hearing Loss in Children*. Retrieved from <https://www.cdc.gov/ncbddd/hearingloss/data.html>