Examining Educators' Perspectives Regarding Implementing a Bimodal Bilingual Deaf Education Pedagogy in a Regional Program

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Abstract

Historically, deaf education pedagogy has shifted between oral/aural instructional methodology and sign systems. The problem addressed in this study is that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom. This leads to the perpetuation of inequities and marginalization of deaf students who use ASL and affiliate with Deaf culture and the Deaf community. The purpose of this study was to examine educators' perspectives regarding implementing a bimodal bilingual deaf education pedagogy in a program in the Western United States. The translanguaging framework for deaf education grounded the study. Research questions asked participants about student diversity, methods of instruction, assessment, and benefits and challenges of bimodal bilingual instruction. A qualitative descriptive design was used. Eighteen educators participated in either a focus group or an individual interview, and responses were analyzed using inductive thematic analysis. Five themes were identified: Educators prioritize language, vocabulary and self-advocacy skills by leveraging small group or individual instruction. ASL is used as the primary language for whole-group instruction. Deaf students' language needs and access to Deaf role models are prioritized over social integration in isolating mainstream environments. Active training is essential for effective incorporation of both ASL and spoken English instruction to accommodate language-diverse students. Finally, families need accessible resources for creating deaf-friendly spaces in the home. The implications of the results are that hearing educators should critically evaluate their own position, privilege, and power; training is a critical first step; regionalization and critical mass are critical for building language and self-advocacy skills; a formal language policy is warranted; and families need training and resources. The contributions to practice include addressing the gap between theory and practice of implementing a bimodal bilingual pedagogy.

Acknowledgements

This dissertation is dedicated to my family and my tribe. To my mother, you have made me the strong, independent woman I am today. To my father, thank you for your love and attention. It is never too late. To Marilyn for being my cheerleader. To my children and their children, this is for you! It is never too late to realize your dream. Go for it. To my girl clan who have been steadfast, we are all Wonder Women. To educators of the deaf who embrace change, never give up. To deaf children everywhere, I pray you all have access to a linguistically rich education and find success.

I would also like to acknowledge the support of my dissertation team. To my chair, Dr. John Harrison, thank you for your guidance and patience. Am I done now? To my subject matter expert, Dr. Patricia Kennedy, thank you for sharing your own journey with me and providing another perspective on both the research and culminating ADE. To my academic reader, thank you for your review, your time, and your feedback. You all have a wealth of knowledge, and I thank you for being part of my outstanding team.

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Section 1: Foundation

According to the National Center for Education Statistics (2022), in the 2019-2020 school year, there were approximately 42,000 students with hearing impairments (including deafness) receiving special education services in public schools in the United States. Seventy-seven percent of those students received their education within the general education classroom for more than 40% of their school day. Arnold (2022) discussed the ongoing debate about the education of deaf children and whether they should be educated for integration or autonomy. The author argued that both options have benefits and drawbacks and that the best approach depends on the child's needs and circumstances.

Silvestri and Hartman (2022) explored the movement towards inclusive public education for deaf students and its implementation over the past fifty years. The authors note that while legislative action has facilitated inclusive education, various interpretations of inclusion policy have resulted in isolating and inaccessible experiences for deaf students in the mainstream. They acknowledged a great deal of diversity within the deaf and hard-of-hearing population, with significant differences in the cause of deafness, level of hearing, age of onset, methods of communication, and cultural background. The authors argued that a shift towards bimodal bilingualism, involving fluency in a visual language, such as American Sign Language (ASL), and an auditory language, such as English, can promote inclusion and improve educational outcomes for deaf students.

Educators of the deaf have contrasting perspectives and approaches to addressing the language and literacy needs of deaf students within the classroom (Fullwood & Levinson, 2023). Deaf education pedagogy generally falls into two categories: those that focus on the child’s oral

and auditory skills and those that use sign language in some way (Scott & Henner, 2021; Secora & Smith, 2021; Skyer, 2020).

Background

Researchers have examined the history of deaf education in the United States over the past 50 years, focusing on the persistent challenges and ideological debates that have shaped the field (Arnold, 2022; De Clerck & Golos, 2020; Fullwood & Levinson, 2023). Various approaches to literacy development included oralism, cued speech, sign language, and total communication (Arnold, 2022; Fullwood & Levinson, 2023). Technology has also played a key role in changing the landscape of deaf education, particularly the development of cochlear implants (De Clerck & Golos, 2020; Fullwood & Levinson, 2023; Skyer & Cochell, 2020).

The increased use of cochlear implants and technological advances in digital hearing aids brought about a revival of the oralist philosophy (Fullwood & Levinson, 2023). Sign language was discouraged mainly in favor of emphasizing spoken language and lipreading (Arnold, 2022). Oralists suggest manual communication as a substitute for oral approaches when students struggle with the latter. The opposing perspective asserts that every deaf child ought to be raised with sign language as their primary means of communication (MacDougall, 2022). Supporters of this perspective believe in nurturing and cultivating a strong sense of identity within the deaf culture from the moment hearing loss is identified.

Signing systems were developed in the mid-twentieth century to respond to the ineffectiveness of a purely auditory/oral approach to foster language and literacy development in deaf students (Scott & Henner, 2021). Scott and Henner used *signing systems* as a catch-all phrase for manual communication tools that were artificially developed to visually represent spoken language, such as cued speech, signed exact English, manually coded English, and total

communication. Signing systems appeal to parents as they rely on spoken language grammar with sign vocabulary, but research shows they are challenging for deaf children to acquire (Scott & Henner, 2021). Even though signing systems are widely used in education, Scott and Henner (2021) found little evidence to support their effectiveness.

Alternately, a bilingual approach emphasizes acquiring and using American Sign Language (ASL) and English (Nussbaum et al., 2012). In bilingual-bicultural education (Bi-Bi), ASL is recommended as the primary language and mode of communication, while English is primarily addressed through reading and writing. Bimodal bilingualism focuses on the development of ASL and spoken English (Nussbaum et al., 2012). Both approaches recognize the importance of meeting the language accessibility needs, cultural needs, and identity needs of deaf learners.

Simultaneous communication (SimCom) was created as a form of bimodal bilingualism to improve the spoken language skills of deaf students by using a manual representation along with spoken English (Rozen-Blay et al., 2022). Rozen-Blay et al. (2022) investigated SimCom's effect on bimodal bilinguals' spoken language and found that while SimCom can be a helpful tool for communication, it can also negatively impact the quality and complexity of spoken language. They suggested that teachers and speech therapists working with bimodal bilinguals should be aware of the potential effects of SimCom and consider alternative communication strategies to promote spoken language development.

Despite significant technological advancements and a growing understanding of the benefits of bilingualism and bimodal communication, there remains resistance to change within the deaf education system (Fullwood & Levinson, 2023). Fullwood and Levinson (2023) found that this resistance is attributed to various factors, including entrenched beliefs about the

superiority of oralism, limited access to resources and professional development opportunities, and a lack of political will to enact meaningful reforms. They suggested that to move forward, deaf education must be reconceptualized as a social justice issue, and policies and practices must be reimagined to prioritize the needs and preferences of deaf students and their families. De Clerck (2018) noted that a social justice stance has ramifications for both classroom practice and future research endeavors.

In summary, although studies suggested that bimodal bilingual education can effectively support the learning and development of deaf students, particularly in terms of language and literacy outcomes (Hoffmeister et al., 2022; Musyoka, 2022; Pontecorvo et al., 2023), the lack of practical application in the literature was dismal (Mayer & Trezek, 2020). Gaps in the literature included: (a) how teachers develop students' linguistic repertoires (Cheng et al., 2021; Holcomb & Lawyer, 2020), (b) how teachers' epistemological perspectives of deafness impact instructional decisions (Fullwood & Levinson, 2023; Musyoka, 2022), (c) how multidisciplinary educational teams can work together to increase student achievement (Scott & Cohen, 2023; Smith & Allman, 2020), and (d) identifying bilingual resources to support educators (Musyoka, 2022). This study may address the gap between theory and practice regarding the bimodal bilingual education of deaf learners.

Statement of the Problem

The problem addressed in this study was that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom (Fullwood & Levinson, 2023). This leads to the perpetuation of inequities and marginalization of deaf students who use ASL, affiliate with Deaf culture, and the Deaf community. Historically, deaf education pedagogy has shifted between the oral/aural instructional methodology and the

use of sign systems. The argument of which approach is best for educating deaf students is hundreds of years old (Scott & Henner, 2021). Neither approach addresses the diverse language and educational needs of deaf students today (Basas et al., 2023). This historical conflict was also evident locally among the educational staff at XYZ Regional Deaf Education Program (a pseudonym) and was demonstrated through resistance to changing current modes of instruction to reflect current best practices. This resulted in the marginalization of deaf students unable to access English through speech and audition. Several educators at the study site, including speech-language pathologists, audiologists, teachers, interpreters, and paraprofessionals, verbally expressed to the school's administration their discontent with planned changes leading toward the incorporation of Deaf adults, Deaf culture, and ASL. It is important to understand the perspectives of educators regarding this issue and the perceived role of their choices on student learning.

Deaf scholars have conceptualized a new pedagogy in deaf education focusing on cultural and linguistic equity, both ASL and English, spoken and/or in print (Secora & Smith, 2021; Skyer, 2020). Bimodal bilingual education for deaf students is an educational pedagogy that uses both natural sign languages and spoken language to support the development of language and literacy in deaf education (Parks & Calderón, 2022). Scholars advocate for shifting the focus in deaf education towards enhancing bimodal bilingual teaching methods rather than debating the benefits of bimodal education for deaf children to ensure that deaf children have equal opportunities for education and development, similar to their hearing peers (Hoffmeister et al., 2022). Limited research has focused on the effectiveness of this approach and how it can be implemented in educational settings (Williams et al., 2022).

Purpose of the Study

The purpose of this qualitative descriptive study was to examine educators' perceptions about implementing a bimodal bilingual program for deaf students within a regional program in the Western United States. Theoretically, a bimodal bilingual pedagogy and implementation of translanguaging strategies increases metacognition, thus improving the academic and literacy outcomes of deaf students (Scott & Cohen, 2023; Wolbers et al., 2023). While 92% of state schools for the deaf across the US report a bilingual philosophy of education, only 49% of regionalized deaf education programs, typically housed on public school campuses, report using bilingualism as a standard of practice (Educational Programs for Deaf Students, 2022). Sixty-seven percent of those schools that identified bilingualism as a standard of practice also included total communication and English practices. Despite the growing corpus of empirical evidence demonstrating the ineffectiveness of auditory/oral and signing systems, some educators still advocate for monolingual practices to develop English skills for deaf students (Pichler, 2022; Rozen-Blay et al., 2022; Scott & Henner, 2021). Sociocultural worldviews embrace and value student cultural and linguistic diversity using bilingual strategies to develop equitable practices in deaf education, building competence in ASL and English (De Clerck, 2018).

To conduct this study, participants were purposefully selected based on their ability to provide information that would assist in answering the research questions within a regional deaf education program (Creswell & Poth, 2018). In addition, snowball sampling, which allows the researcher to ask participants to recommend other individuals (Mertler, 2019), was used to identify additional participants since enough participants were not obtained the first time, such as related service providers or general education teachers that might be able to contribute valuable perspectives on the phenomenon. I aimed to obtain 15-20 educators for this study. I desired to

have an equivalent number of hearing and deaf educators participate. The regional program originally selected in this study was chosen because of my professional experience as a deaf educational administrator overseeing the transition from a total communication program for the deaf and hard of hearing to a bimodal bilingual deaf education program.

Over the 2019-2020 school year, XYZ Regional Deaf Education Program (a pseudonym) committed to exploring programmatic needs for change by conducting a self-study using the *Optimizing Outcomes for Students Who Are Deaf or Hard of Hearing: Educational Service Guidelines* (NEASD, 2018). Following the study, in the fall of 2020, an executive summary was compiled outlining systematic changes the stakeholders identified as necessary to optimize student outcomes. In the spring of 2021, a strategic plan was finalized and submitted to the superintendent's cabinet. The program was formally renamed from *Manually Coded English (MCE)* to a *Bimodal Bilingual* program. In the 2021-2022 school year, the administrative team began reviewing and revising policies, job descriptions, and hiring practices as an initial step. Several staff members began voicing concerns and resistance regarding the programmatic changes that were occurring. Significant divisions among staff became evident. Despite the research provided, many staff continued to provide monolingual English practices through total communication, while other educators embraced the development of a natural sign language—ASL—along with English. This study was a logical response to identify educator perspectives about implementing a bimodal bilingual program and barriers that may impede implementation with fidelity.

This qualitative descriptive study involved individual semi-structured interviews and focus groups between the researcher and the participants (Creswell & Poth, 2018), who identified as educators within regional and district deaf education programs in a structured

environment. The semi-structured interviews and focus groups explored educators' perspectives about bimodal bilingual instructional practices. All data were collected in the participants' self-selected primary mode of communication. Certificated interpreters were utilized when necessary.

Data analysis for this qualitative descriptive study was conducted via inductive thematic analysis (Braun & Clarke, 2006). Critical techniques such as thoroughness, member checking, perspective-taking, and reflexivity were used.

Research Questions

RQ1

How do educators in a bimodal bilingual regional program describe how they address language diversity within the classroom?

RQ2

What are educators' perceptions of the benefits and challenges of implementing a bimodal bilingual pedagogy in a regional deaf education program?

RQ3

How do educators in a bimodal bilingual regional deaf education program describe how they assess, delineate, and address students' diverse language and communication needs?

Theoretical Framework

The translanguaging framework for deaf education (TFDE) guided this study (Wolbers et al., 2023). The TFDE is rooted in two perspectives on language and learning: crip linguistics and critical translanguaging space. It served as a pedagogical framework aimed at facilitating language learning in the field of deaf education. The TFDE encourages educators to adopt an asset-oriented approach toward language use and users. Emphasizing this perspective, the TFDE acknowledges and values the linguistic resources that deaf students possess and promotes their

utilization of diverse communication skills for effective expression. The framework also strives to broaden students' linguistic abilities and enhance their communicative adaptability.

Crip linguistics refers to the study and exploration of language and communication from a disability perspective, specifically focusing on the experiences and identities of disabled individuals (Henner & Robinson, 2021). It aims to challenge traditional linguistic norms and assumptions by centering the voices and perspectives of disabled people, examining how language can reinforce and challenge ableism, and exploring alternative ways of using language that affirm and empower disabled communities. Crip linguistics seeks to promote inclusivity, accessibility, and social justice within language and communication practices.

Translanguaging can be conceptualized as an internal perspective on an individual's language system, which acknowledges that the brain does not separate languages, variations, or registers into distinct compartments (Otheguy et al., 2015). Instead, it integrates all linguistic elements into an idiolect, a cohesive and fluid system. In this view, translanguaging recognizes the interconnected nature of language and embraces the dynamic integration of diverse linguistic features within an individual's unique language repertoire. Although translanguaging has been inherent in the everyday language practices of deaf individuals, previous research has often portrayed these practices in a problematic light (De Meulder et al., 2019).

A significant number of deaf children, by the time they reach the age of five, have not had prior exposure to "named" languages like spoken English or American Sign Language (ASL). Consequently, they undergo the traumatic effects of language deprivation (Hall & De Anda, 2021). Since their initial mode of communication is not a recognized or conventional language, it tends to be stigmatized or considered invalid. By incorporating principles from crip linguistics, TFDE offers valuable perspectives on translanguaging in the context of deaf school-

aged children who have encountered language deprivation and utilize home signs or gestural communication practices (often considered unconventional) instead of recognized languages. Multimodality is gaining recognition among translanguaging researchers, as they acknowledge the significant role that gestures frequently assume in communication between individuals with limited proficiency in a common language (Allard & Pichler, 2018).

The TFDE believes these communicative practices are legitimate components of an individual's communicative repertoire (Wolbers et al., 2023). It emphasizes the importance of validating all idiolects and striving for mutual comprehension through communication, thereby honoring individuals and facilitating the expansion of their linguistic resources. Crip linguistics expands this understanding by encompassing the notion of "linguistic care work" (Henner & Robinson, 2021, p. 6). It involves recognizing and supporting disabled individuals in their communication endeavors without imposing able-bodied norms as the benchmark for evaluation.

The TFDE approaches language pedagogy with critical and humanizing perspectives, respecting each student's unique languages, cultures, and life experiences (Wolbers et al., 2023). It is a versatile framework applicable in various educational contexts, offering pedagogical support to foster language development and enhance linguistic adaptability among deaf students. Notably, the TFDE is committed to promoting equitable and socially just education systems for deaf individuals, aiming for broader educational goals beyond language instruction.

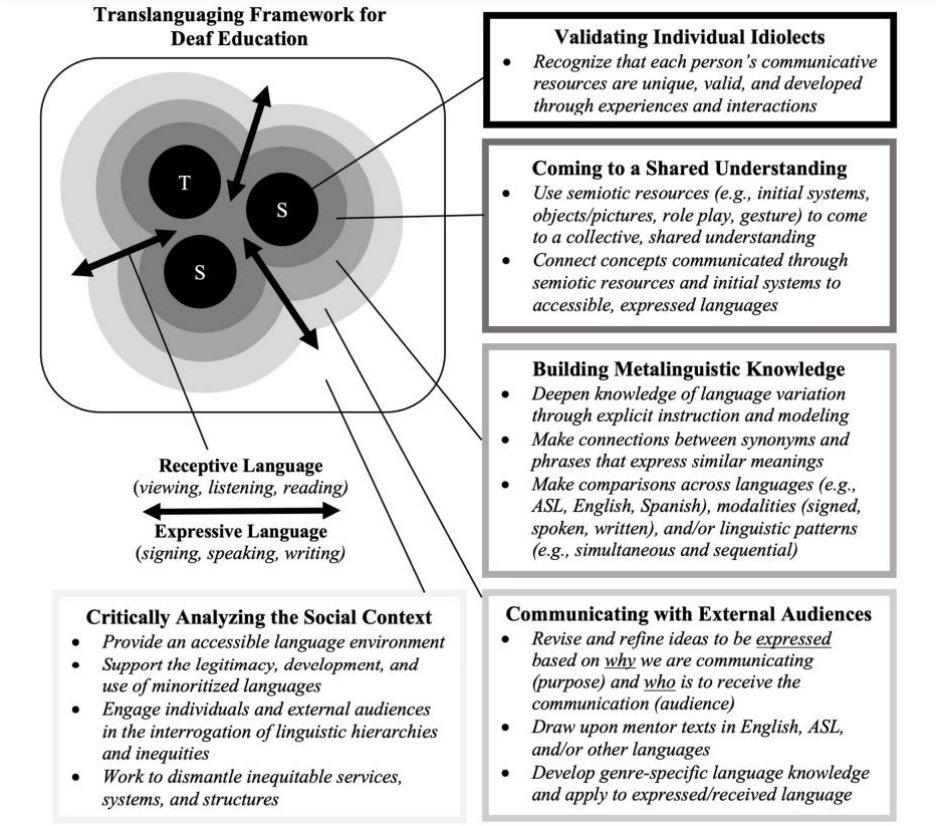
The core tenets and pedagogical principles of the TFDE include (see Figure 1):

1. Validating individuals' idiolects,
2. Coming to a shared understanding,
3. Building metalinguistic knowledge,
4. Communicating with external audiences, and

5. Critically considering social contexts.

Figure 1

Visual Model of the Translanguaging Framework for Deaf Education



Note: Reprinted from "Translanguaging Framework for Deaf Education," by Wolbers, K., Holcomb, L., and Hamman-Ortiz, L., 2023, *Languages, 8*(59) p. 12. Copyright by the authors. Reprinted with permission.

Definitions of Key Terms

Audism

Audism is the opinion that a person is superior based on the ability to hear or conform to hearing norms (Humphries, 1975).

American Sign Language (ASL)

ASL, or American Sign Language, is a unique language that employs hand gestures, facial expressions, and body movements to establish its own set of linguistic rules, including principles of semantics, syntax, morphology, and pragmatics (Rholetter, 2022).

Bimodal Bilingualism

Bimodal bilingualism is a term commonly applied to bilingual individuals who use languages that operate in distinct articulatory modalities, such as a signed language and a spoken language—for instance, American Sign Language (ASL) and spoken English (Lillo-Martin et al., 2016).

deaf

The lowercased term deaf is used to encompass individuals who may identify as deaf, deafblind, deafdisabled, hard of hearing, late-deafened, and hearing impaired. (NDC, 2021).

Deaf

The capitalized term Deaf is used to refer to a specific group of individuals who are deaf and share a language, which is American Sign Language (ASL), as well as a culture (NAD, 2023).

d/Deaf

The term d/Deaf is sometimes used to address the diversity of the deaf population to include those that identify with the Deaf community (D) and those that do not (d).

Deaf Cultural Capitol

Deaf cultural capital refers to the unique set of knowledge, skills, and cultural practices that individuals within the Deaf community acquire through their shared experiences, language, and identity (Jones & Singleton, 2020).

Deaf Lens

The Deaf lens is a viewpoint that explores learning by considering aspects such as modality and cultural differences, as well as emphasizing the significance of visual strengths to understand issues of access (Jones, 2021).

Idiolect

An idiolect is a child's initial communication system in which they make meaning with others, regardless of access to spoken, signed, and written languages, which may include ASL, English, and/or other home languages, and innovative home communication systems (Wolbers et al., 2023).

Language and Communication Plan

A language and communication plan is an individualized developmental plan that includes specific recommendations for personalized goals to enhance the development and usage of a specific language or languages used for communication (Easterbrooks & Baker, 2002).

Language Equity

Language equity is the state of ensuring fairness and impartiality when it comes to students' language differences, with the ultimate goal of all instruction facilitating comprehension (Cervantes-Soon et al., 2017).

Language Plan

A language plan is a strategy that specifies how each language will be taught in a dual-language program (Donley, 2023).

Language Rich Environment (LRE)

The term LRE, or Language Rich Environment is an acronym of the term least restrictive environment for deaf students suggesting that the communication and language needs of deaf students often contradicts inclusion in mainstream settings (NASDSE, 2018).

Languaging

The term languaging is employed to highlight language as an action performed in everyday activities, diverging from structuralist perspectives that view language as a static structure (Bloome & Beauchemin, 2016).

Signing Systems

Signing systems is a catch-all phrase for manual communication tools artificially developed to visually represent the spoken language, such as signed exact English, manually coded English, cued speech, simultaneous communication, and total communication (Scott & Henner, 2021).

Translanguaging

Translanguaging refers to the natural and genuine way bilingual and multilingual individuals communicate by utilizing all available means of communication to convey meaning, without being constrained by the established social and political boundaries of specific languages (Garcia, 2011).

Review of the Literature

The problem that was addressed in this study was that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom. This leads to the perpetuation of inequities and marginalization of deaf students who use ASL, affiliate with Deaf culture, and the Deaf community (Fullwood & Levinson, 2023).

Recent research has focused on the theoretical aspects of this approach and how it can be implemented in educational settings (Parks & Calderón, 2022). This qualitative descriptive study examined educators' perspectives about implementing recommended practices in a regional bimodal bilingual program for deaf students.

The academic databases used to compile this review of the literature included EBSCO Host, Academic Search Complete, Education Research Complete, Science Direct, ERIC, and Google Scholar. Among the keywords and phrases used were *deaf education, bimodal bilingual, deaf education and bimodal bilingual, deaf education and bilingual, deaf education and cultural competency, deaf education and assessment, bimodal bilingual best practices, deaf education,* and *English literacy development*. Following the initial literature search, a list of additional resources and terms was compiled and investigated. These new search terms included *deaf epistemology, deaf education and translanguaging, deaf education and cultural capital, deaf education,* and *inclusive learning spaces.*

There were four areas explored in this review of the literature. It opens with a discussion of inclusive learning spaces through a deaf lens. Next, it explores language policy in the context of bilingual deaf education. This leads to a discussion of the appropriate assessment of language. Finally, it reviews languaging practices in bimodal bilingual deaf education.

Inclusive Learning Spaces

Three themes were investigated regarding inclusive learning spaces in deaf education. First, there is an investigation into the historical foundations of defectology. Contrastively, the notion of deaf epistemology is explored. Finally, cultural proficiency is discussed within the scope of deaf education.

Defectology. Seminal contributions in the field of deaf education have been made by Vygotsky (1993), who introduced the concept of defectology. Defectology refers to the study of developmental and educational issues in individuals with disabilities or impairments. It encompasses the examination of various aspects such as cognitive, social, and emotional development, as well as the design and implementation of educational interventions for individuals with disabilities. Vygotsky (1993) believed that understanding the unique needs and challenges faced by individuals with disabilities is essential for developing effective educational practices and fostering their optimal development and inclusion within society.

Paul (2018) contended that intense discussions arise when the central focus revolves around the meaning and interpretation of the construct of disability regarding deafness. He argues that questions arise as to whether this condition is truly a disability, whether it is socially or environmentally constructed, and whether we should aim to improve what has traditionally been perceived as negative effects. Moreover, he asserted that there is a fundamental question of who determines whether these effects are indeed negative or not.

In the earlier stages of his career, Vygotsky (1993) initially expressed support for oral instruction, although he posited its' harsh and even deadly nature. As he conducted extensive empirical and theoretical research, his perspective completely reversed. He recognized the profound importance of sign language, which he called *mimicry*, *gesture*, or *gesticulated language*. By the pinnacle of his career, Vygotsky advocated for polyglossia, an integrated and multisensory approach to deaf education that involved leveraging multiple sensory channels to tap into the nervous system's full potential. Polyglossia encompassed a variety of communication modes, including sign languages carefully selected to facilitate authentic and

fluent language use rather than detached oral training or phonological exercises characteristic of the oral pedagogy.

Historically, deafness has been seen as a defect of deaf individuals needing to be remediated (Vygotsky, 1993). The literature demonstrated that in the field of deaf education, the immediate associations regarding deafness involve efforts to enhance and alleviate speech and hearing conditions for individuals who are deaf (Paul, 2018; Reagan et al., 2021). This can lead to philanthropic underpinnings among teachers of the deaf, which impact pedagogy in the classroom (Smagorinsky & Lang, 2023). Research showed that students' academic outcomes were influenced by educators' perceptions and expectations of them (O'Brien, 2020). Furthermore, the perceptions of a group or culture by others can greatly influence the unity of the organizational culture, such as within a school setting. Vygotsky (1993) postulated that when a sense of superiority and dominance exists within one group towards another, it detrimentally affects the ability of both cultures, such as hearing and deaf, to collaborate, learn, and teach within the school environment. There has been a notable emergence of concepts originating from Deaf epistemologies emphasizing that, within this positive perspective, being Deaf is not regarded as a disability (Paul, 2018).

Smagorinsky and Lang (2023) argued that in order to foster more supportive environments for individuals with deafness, it is essential to engage in the process of re-educating the hearing population that surrounds them. Reagan et al. (2021) asserted that stakeholders must critically examine their own position, privilege, and power. Furthermore, Paul (2018) hypothesized that school organizations can become a powerful space for the education of deaf children if both deaf and hearing educators embrace acceptance, view each other as equals,

value and bridge ideas, and demonstrate respect for each other's cultural norms, beliefs, and values.

Deaf Epistemology. Refuting the concept of defectology is the recognition of deaf epistemology (Cue et al., 2019; Reagan, 2021). Deaf epistemologies explore how deaf individuals experience and construct knowledge. Deaf epistemologies are introduced as the *Deaf Way*, or ways of thinking and of viewing the world in contrast to hearing epistemologies (Cue et al., 2019) based on the notion that deafness shapes a greater emphasis on visual orientation in comparison to their hearing counterparts (O'Brien, 2020). Deaf epistemology focuses extensively on empowering deaf individuals and communities and dismantling audism (Cue et al., 2019).

The perspective that knowledge is shaped through social and individual processes carries substantial implications for education, particularly concerning historically marginalized communities, such as the Deaf community (Reagan et al., 2021). Scholars posited that Deaf epistemology is influenced by the type and depth of knowledge acquired by deaf individuals as they grow up in a society that primarily relies on auditory perception to navigate life (Cue et al., 2019; O'Brien, 2020). In addition, the way hearing individuals interact with deaf individuals influences how knowledge is acquired (Reagan et al., 2021).

The National Center for Educational Statistics (2022) reported that 77% of deaf students received their education in mainstream environments. However, O'Brien (2020) contended that educators frequently perpetuate and validate a traditional approach to education that upholds the dominant societal norms of hearing, language, and culture. The literature steered toward considerations for framing Deaf epistemology within education, including creating a sense of

belonging, cultural capital, and positive language experiences (Cue et al., 2019; Reagan et al., 2021).

Sense of Belonging. One theme in the literature was creating a sense of belonging. Human connection is essential, and one crucial aspect is the desire to be part of a community, to experience a sense of belonging synonymous with establishing meaningful and enduring relationships, creating a sense of security and acceptance, and fostering a natural inclination to form close and positive connections (Olsson & Gustafsson, 2022). Research indicated that deaf children from hearing families face challenges in finding their place within the Deaf community and finding their sense of belonging in the hearing world in comparison to deaf children born to Deaf parents (Cue et al., 2019; Eichengreen et al., 2022).

The majority of deaf children are born to hearing parents who have limited prior knowledge about hearing loss, which can lead to communication barriers within the family (Eichengreen et al., 2022; Johnson et al., 2020). Hearing parents typically elect oral methods of education, including signing systems replicating the English language (Scott & Henner, 2021). These decisions lead to exclusion from peer interactions at school, which can negatively impact a deaf child's socio-emotional development, sense of belonging, and self-identity (Eichengreen et al., 2022), potentially resulting in feelings of social isolation (Olsson & Gustafsson, 2022).

Cue et al. (2019) examined Deaf epistemology through d/Deaf individuals' experiences and perceptions. The first theme that arose in this research was that schooling had a significant influence on what it meant to be d/Deaf. Deaf students of Deaf parents frequently did not identify as different from the mainstream society until attending a mainstream school, such as college, indicating a strong sense of belonging. Alternately, deaf or hard-of-hearing participants, frequently in mainstream school settings, were aware of their differences much earlier in life.

Cue et al. (2019) reported that many of them felt relieved upon meeting fellow students who shared similar experiences and expressed a desire to spend more time with these peers rather than with students who did not use sign language, indicating a weak sense of belonging. Additionally, deaf of hearing participants emphasized the swift acculturation into Deaf culture once they began interacting with other deaf individuals. Most of them shared that they experienced a profound sense of comfort after fully immersing themselves in the Deaf community, understanding Deaf culture, and acquiring proficiency in ASL.

Smagorinsky and Lang (2023) explored the perceptions of teacher candidates on creating inclusive environments for deaf students following an exploration of human diversity by discussing authentic experiences of deaf adults. The inquiry included the Deaf experience, Deaf culture, the notion of disability, communication, and education. Prior to embarking on the course, it was reported that most participants held pathologizing views of deaf people. Following the course, they perceived deafness as an issue rooted in society rather than something inherently wrong with deaf individuals, similar to the earlier works of Vygotsky. Participants in this study acknowledged the problematic nature of educating deaf students in separate schools or mainstream environments (Smagorinsky & Lang, 2023). For example, they recognized the benefits of specialized schools for the deaf that cater to the unique needs of deaf students. However, they were cognizant of the potential drawbacks, such as creating a separation between deaf and hearing individuals and limiting opportunities for mutual understanding and acceptance. Additionally, they described that teachers in a mainstream setting are often unprepared to teach deaf students and can unknowingly treat their hearing loss as a deficit. Finally, they acknowledged that visible hearing aids can be a source of embarrassment for deaf students.

Cultural Capital. The second theme, cultural capital, embraces the cultural knowledge, skills, and abilities accumulated or gained from belonging to a community, including transmitting cultural knowledge, skills, abilities, and social connections (Cue et al., 2019; Jones & Singleton, 2020). Ninety percent of deaf children are born to hearing parents (Mitchell & Karchmer, 2005). Cue et al. (2019) asserted that these children often face barriers to accessing the cultural knowledge and resources of the Deaf community, known as cultural capital.

The literature revealed that engaging with deaf role models enhances the language abilities and cognitive development of deaf students (Jones et al., 2021). A distinctive characteristic of the culture capital is harnessing the sharing of information and resources of Deaf people (Johnson et al., 2020). For example, one study investigated the lived schooling experiences of Deaf adults (Jones, 2021). Participants expressed that their Deaf teachers possessed innate knowledge about the advantages of visual language in fostering communication and enhancing literacy comprehension, particularly in terms of spatial understanding. In the same study, participants shared that hearing teachers frequently held lower academic expectations and instilled a sense of inferiority among the students. Contrastively, they reported that when deaf teachers held higher expectations, learning and motivation increased. Johnson et al. (2020) contended that Deaf adults innately recognize that deaf students are linguistically and culturally marginalized, emphasizing the importance of their visual learning and communication instead of perceiving hearing loss as a deficiency. The literature demonstrated that the focus of literacy instruction as an asset-based approach that highlights the visual sensory strengths, sign-to-print mapping strategies, and the cultural capital of Deaf individuals enhances student performance and motivation (Holcomb, 2023; Johnson et al., 2020; Jones, 2021).

Positive Language Experiences. The third theme in the literature was creating positive learning experiences for deaf students who are frequently seen as deficient or inferior (Cue et al., 2019; Hall et al., 2019). Reagan et al. (2021) contended that to gain a comprehensive understanding of deaf epistemology, it is crucial to recognize the significant role of the community's vernacular language. Cue et al. (2019) asserted that the development of one's sense of being is intricately intertwined with language, as it validates and affirms our existence. Hall et al. (2019) hypothesized that deaf children deprived of sign language acquisition during their early years face a higher risk of language deprivation.

Throughout history, deaf individuals have endured oppression, marginalization (Ladd, 2016), and language deprivation (Hall et al., 2019). Hall et al. (2019) argued that language deprivation causes significant delays in language development, which can result in lifelong deficits such as cognitive impairments and social isolation. In the early stages of deaf epistemology in the context of the language controversy in deaf education, two significant themes emerged: (a) the conflict surrounding language, primarily driven by hearing individuals through the medical model, and (b) a pursuit for genuine language, where culturally Deaf individuals find a sense of wholeness within a linguistic and cultural environment that cherishes ASL and Deaf culture (Cue et al., 2019).

In conclusion, the literature recognized the positive impact Deaf epistemologies have on deaf students, with the ultimate ideal of a Deaf world centering around a collective experience shared within the Deaf community (Basas et al., 2023; Jones & Singleton, 2020; Smagorinsky & Lang, 2023). However, Cue et al. (2019) warned that it is important to acknowledge the limited inclusion of individuals from multicultural backgrounds and their unique epistemologies arising from diverse experiences. They also argued that Deaf epistemology theorization may also

unknowingly exclude individuals who may or may not identify as members of the Deaf community but navigate the Deaf world differently, such as those who are hard of hearing, oral deaf, cochlear implant users, or non-signers. They postulated that these universal assumptions tend to marginalize specific segments of the Deaf world, which contradicts the very purpose of epistemology.

Culturally Responsive Pedagogy. The literature on culturally responsive pedagogy through a deaf lens, albeit minimal, demonstrates that the establishment of inclusive learning spaces for deaf students necessitates cultivating individual and collective dialogue and actions centered around investigating how cultural perspectives, experiences, and histories unite and separate members within the system (Jones et al., 2021; O'Brien, 2020). Culturally proficient practices refer to the skills, attitudes, and knowledge that professionals or institutions develop to effectively engage with individuals from diverse cultural backgrounds (CCPEP, 2020). It involves understanding and respecting different cultural perspectives, adapting instructional or service delivery approaches to meet the needs of culturally diverse individuals, and promoting inclusive and equitable practices. The literature indicated that as the field of deaf education becomes increasingly diverse, professionals must prioritize linguistically and culturally responsive practices to effectively serve the community's needs (Basas et al., 2023; De Meulder et al., 2019). Culturally proficient practices enhance linguistic and academic outcomes for all students. (Spiess & Cooper, 2020).

Like cultural capital, culturally responsive pedagogy emphasizes the importance of cultural understanding and inclusivity (Spiess & Cooper, 2020). However, deaf cultural capital focuses explicitly on the unique experiences and strengths of the Deaf community (Jones, 2021),

while culturally proficient practices encompass broader strategies for engaging with diverse cultures (Spiess & Cooper, 2020).

O'Brien (2020) pointed out that deafness is a social issue that places the responsibility for social inclusion on the hearing population rather than being a problem solely faced by deaf individuals. Jones et al. (2021) reported that acknowledging the cultural and linguistic diversity present within deaf communities is essential for the establishment of a robust and enduring infrastructure centered around sign language. Diversity is reflected in the various ways language, culture, and cognition are experienced visually (Basas et al., 2023; Jones et al., 2021).

Smagorinsky and Lang (2023) argued that educators who do not recognize how hidden social beliefs impact students create an environment that has the potential to be disabling, as it is naturally abundant with harmful forms of reinforcement that contribute to feelings of inferiority. Understanding how the social environment impacts the sense of self-worth in deaf individuals underscores the significance of empathy and collective responsibility in enhancing the quality and fulfillment of other people's lives (Smagorinsky & Lang, 2023). O'Brien (2020) asserted that the flaw lies in the disabling nature of the environment rather than the inherent biological factors of hearing. He proposed that, as a result, education should primarily address the social consequences of these factors rather than focusing solely on the biological aspects. Returning to the seminal works of Vygotsky (1993), more than 50 years prior, it was recommended that educators should strive to establish inclusive environments where deaf individuals can actively engage in society with dignity and appreciation. Vygotsky (1993) continued that altering the environment becomes more important than attempting to fix the deaf child.

Spiess and Cooper (2020) hypothesized that for a school to enhance its cultural proficiency, educators should engage in self-reflection and embark on a journey of self-discovery

to understand their value systems. They contended that by facilitating personal growth and fostering organizational transformation, these tools can serve as a roadmap for effectively transforming a culture. Furthermore, Smagorinsky and Lang (2023) postulated that honest discussions surrounding cultural diversity can foster empathy from Deaf and hearing cultures, fostering a more profound understanding that transcends group boundaries. For instance, they reported that pre-service teachers recognize that deaf students possess the ability to learn but may have their potential hindered by low expectations, which can lead to increased empathy and encourage them to create more supportive and nurturing environments.

Language Policy

Three elements related to language policy in deaf education were explored. First, the constructs of language separation and language allocation within bilingual education were examined. Next, a review of translanguaging theory in deaf education was synthesized. Finally, the concept of individual language and communication plans was explored.

Language Separation and Allocation. The most commonly used umbrella term for bilingual programs is *dual language education* (DLE), signifying that students receive instruction in two languages (Center for Applied Linguistics, n.d.). Models of DLE vary widely, with approximately 270 programs in the U.S. (Somerville & Faltis, 2019). Two-way dual language (TWDL) programs implement strict language separation policies (Somerville & Faltis, 2019), while dual language immersion (DLI) programs implement a flexible language allocation policy (Freiri & Delavan, 2021).

A literature review indicated that language separation was traditionally identified as a common practice in deaf bilingual education, especially during literacy activities (DeLana et al., 2007). Language separation involves purposefully utilizing either American ASL or spoken

English for a specific duration, guided by the activity, the facilitator, or the location of the activity (Nussbaum et al., 2012). The principle of this approach is to offer children the chance to acquire and engage with a clear distinction between ASL and spoken English. Further research on language separation models in the context of deaf education was scant.

Language allocation refers to the planned distribution of instructional time and resources between two languages in the program (de Jong et al., 2019). De Jong et al. (2019) proposed *language-as-a-resource* as a founding principle of this pedagogy. Language-as-resource emerged as a powerful metaphor embraced by proponents of dual-language education to challenge prevailing deficit-based approaches in the education of minority-language students (Somerville & Faltis, 2019). Language allocation involves determining the amount of time and emphasis dedicated to each language of instruction, typically the target language and the student's native language or the dominant societal language (Freiri & Delavan, 2021). The allocation can vary depending on the specific program model, grade levels, and program goals.

Two predominant models of language allocation within DLE are the 90:10 and the 50:50 (Billy & Medina Garriguez, 2019). The first number indicates the initial amount of instructional time dedicated to teaching in the target or non-English language, typically new bilinguals. The second number represents the time allocated for English instruction. In a 90:10 model, the target language time typically diminishes each year as English instruction increases until there is a 50:50 balance between the two languages. Alternately, a 50:50 model utilizes both English and the target language equally, each comprising 50% of the instructional time throughout the program's duration. Irrespective of the chosen model, both have successfully achieved bilingualism and biliteracy goals. However, studies suggest that the 90:10 model tends to yield higher levels of bilingualism (Billy & Medina Garriguez, 2019).

Freiri and Delavan (2021) reported that in the United States, the 90:10 model is less prevalent than the 50:50 model. In programs prioritizing equitable language allocation, more instructional time is dedicated to the less dominant language rather than maintaining a precisely equal split. The specific language allocation decisions depend on program goals, students' language backgrounds, community preferences, and available instructional resources (Freiri & Delavan., 2021). The goal is to provide a language-rich environment that promotes bilingualism, academic achievement, and cross-cultural understanding (de Jong et al., 2019; Freiri & Delavan, 2021; Somerville & Faltis, 2019).

Scholars expressed a shared concern regarding matters of educational equity in TWDL and DLI programs, especially for language-minoritized students who speak varieties of English and/or the partner language that are often stigmatized as nonstandard (de Jong et al., 2019; Somerville & Faltis, 2019). Somerville and Faltis (2019) argue that implementing a rigid dual language strategy may impose linguistic constraints on students' language practices, potentially hindering their ability to fully express their learning, make personal and real-world connections, draw upon prior experiences, and expand their thinking as they engage with subject-area topics throughout their school day and beyond.

Scholars in the field of translanguaging argue for the inclusion of spontaneous translanguaging among students and teachers, as well as intentional pedagogical translanguaging, in two-way bilingual programs (Hamman, 2018; Nicolarakis & Mitchell, 2023; Wolbers et al., 2023). McGovern (2023) contended that translanguaging research and pedagogy embrace a crucial foundational principle that rejects the imposition of boundaries between different named languages within an individual's multilingual system.

Translanguaging in Deaf Education. Translanguaging is characterized as an inclusive approach to bilingualism that acknowledges how individuals utilize their language resources to flexibly create meaning (Allard & Pichler, 2018). Translanguaging is seen as a means of creating linguistic equality and having the potential to reframe everyday language practices and legitimize the mixing of diverse semiotic and modal repertoires (De Meulder et al., 2019). As a teaching approach, translanguaging involves purposefully altering both the language input and output (Wawire & Barnes-Story, 2023). Students are actively encouraged to embrace their creativity, occasionally disregard language usage norms, and develop critical thinking skills by using evidence to question, problem-solve, and express their viewpoints (McGovern, 2023; Nicolarakis & Mitchell, 2023).

In monolingual language environments, the natural utilization of translanguaging practices and strategies is often considered an error that negatively impacts a student's perceived linguistic proficiency (McGovern, 2023). Teachers may mistakenly interpret *mixed* language expressions as a lack of comprehension or deliberate disregard for the conventions of the target language, typically the dominant spoken/written language. McGovern (2023) suggested that instead of being viewed as mistakes, the translanguaging practices of bilingual learners should be seen as manifestations of their rich semiotic repertoire, comprising multiple named languages.

In addition to advocating for inclusive education and comprehensive language development for deaf children, it is essential to acknowledge that translanguaging practices are essential to the bimodal bilingual experience to diminish language inequities (Nicolarakis & Mitchell, 2023; Snoddon, 2020). Moreover, recognizing and acknowledging the translanguaging practices, a natural outcome of cross-modal linguistic activation can be harnessed to facilitate the

literacy development of bimodal bilingual learners (McGovern, 2023; Nicolarakis & Mitchell, 2023).

Allard and Pichler (2018) reasoned that when discussing translanguaging in the context of deaf education, it is crucial to consider two interconnected factors that are specific to Deaf environments: (a) individuals who are unable to hear face significant challenges in accessing various aspects of spoken language; and, (b) these same features are visually represented in natural sign languages, making them accessible through visually salient means. Since deaf students enter school with varying hearing acuity and language deprivation degrees, educators must honor all linguistic repertoires with the ultimate goal of comprehension (Donley, 2023).

Individual Language and Communication Plans. The creation of an individual language and communication plan for each child represents an essential component of effective bimodal bilingual programming in deaf education (Nussbaum et al., 2012). Upon entering school, some deaf children utilize sign language as their primary communication mode, while others rely on oral and auditory means, sometimes with visual cues, and still others may lack significant language skills (Donley, 2023). Within the field, there is a growing recognition that every child possesses distinct and personalized requirements, strengths, and preferences concerning communication and education (Basas et al., 2023; Musyoka, 2022). Basas et al. (2023) stated that it is widely acknowledged that adopting a universal approach that assumes a single method can adequately cater to the needs of all d/Deaf children is impractical and insufficient.

An individual communication plan is mandated by the Individuals with Disabilities in Education Act (IDEA) (2004). The IDEA (2004) mandated that the communication needs of deaf children must be considered including opportunities for direct communications with peers and

professionals proficient in the child's primary mode of communication. Additional guidance was provided by "Deaf Students Education Services Policy Guidance" (U.S. Department of Education, 2020). It was recommended that each individual communication plan include: a) the primary language, which can be spoken, signed, or a combination of both, b) the availability of a critical mass of peers of similar age, cognitive ability and language, c) direct and ongoing language access to teachers and service providers proficient in the child's primary language mode, d) services necessary to ensure communication-accessible academic instruction, school services, and extra-curricular activities.

Assessment of Language

The first step to understanding students' unique language repertoires is the appropriate assessment of language (Graham & Shuler, 2020; Hall et al., 2019). Scholars reasoned that alternative assessments that move away from relying solely on standardized testing can offer advantages to students who are deaf (Holcomb & Lawyer, 2020) and provide a comprehensive understanding of the complete child (Neild & Fitzpatrick, 2020). Recommended practices included holistic assessment, language sample analysis, and dynamic assessment (Brandel & Petersen, 2018; Holcomb & Lawyer, 2020; Laurie & Pesco, 2023). Challenges to assessing deaf students' language will also be explored.

Holistic Assessment. The acronym RIOT, which stands for record review, interview, observation, and test, is widely recognized as a valuable tool for conceptualizing a comprehensive assessment to holistically document, track, and support a student's academic or behavioral needs (Brandel & Petersen, 2018; Holcomb & Lawyer, 2020). The evaluation process involves thoroughly examining background information and data regarding the student's language exposure and usage, conducting interviews with key individuals involved in the

student's language development, observing the student in various settings, and employing multiple assessment measures to evaluate their language abilities in both languages (Holcomb & Lawyer, 2020). By incorporating a comprehensive assessment approach that considers factors such as instructional context, curriculum, environment, and learner characteristics, like the RIOT, educators can identify elements that impact the learner (Brandel & Petersen, 2018; Clark et al., 2020; Holcomb & Lawyer, 2020). Holcomb and Lawyer (2020) contended that exploration should include a systematic review, interview, and observation, and that formal assessment is only conducted if the environment is favorable.

Language Sample Analysis. The literature also revealed that analysis of language samples can serve as a valuable tool for capturing the authentic use of language by bilingual students in real-life situations, such as casual storytelling or conversations with peers, family members, and teachers (Brandel & Petersen, 2018; Holcomb & Lawyer, 2020). Language samples are obtained through various methods, including conversations, interviews, play-based samples, narratives, and expository samples (Holcomb & Lawyer, 2020). In specific contexts, the student may be given prompts to elicit a language sample in a specific language, both languages, or allow for natural translanguaging (Holcomb & Lawyer, 2020). These language samples are then analyzed using diverse measures, including metalinguistic ability, language flexibility, translanguaging, and grammatical complexity (Brandel & Petersen, 2018; Holcomb & Lawyer, 2020).

Dynamic Assessment. Dynamic assessment, with a particular emphasis on assessing narrative language, emerged as a recognized and valid method for evaluating the language skills of bilingual learners (Brandel & Petersen, 2018; Laurie & Pesco, 2023). The literature demonstrated that while conventional and fixed methods of language assessment, like norm-

referenced tests and language sampling, offer insights into a student's current language comprehension and production abilities, dynamic assessment shifts the focus to the student's learning potential instead of merely assessing their static knowledge (Brandel & Petersen; Holcomb & Lawyer, 2020; Laurie & Pesco, 2023).

Holcomb and Lawyer (2020) described the dynamic assessment process. It begins with a pretest, followed by a mediated learning or instructional period, and then a posttest is administered. The pre/post-test may or may not be a standardized assessment. They emphasized that this approach enables the assessor to observe the student's response to feedback, flexibility, problem-solving abilities, motivation, task orientation, and the level of support required for acquiring new skills. Similarly, Brandel and Petersen (2018) indicated that by evaluating a child's learning process instead of solely assessing their static knowledge, bias against culturally and linguistically diverse children is reduced. Moreover, since the assessment centers around learning, it accurately measures a student's language learning abilities (Brandel & Petersen, 2018; Holcomb & Lawyer, 2020). One critique of the dynamic assessment approach is the potential mismatch between the assessment goals and the specific learning expectations outlined in a school's curriculum for children (Laurie & Pesco, 2023).

Challenges. The literature highlighted a range of obstacles that impede the effectiveness of assessment for deaf students. Neild and Fitzpatrick (2020) advised that multidisciplinary teams should consider the factors and variables that influence language development when assessing a student's language proficiency. They explain that language encompasses many factors, including expressive and receptive language skills, tone, and body language. Furthermore, variables encompass aspects such as the primary language used at home and school, socioeconomic status, gender, and age of onset.

Research on the assessment of deaf bilingual learners was dearth; however, findings indicated that assessing the linguistic proficiency of monolingual students using established approaches may not be directly applicable to assessing bilingual populations who do not have English as their native language, such as deaf students who use ASL (Graham & Shuler, 2020; Holcomb & Lawyer, 2020). In deaf populations, the combination of potential language deprivation and the striking similarities between language deprivation and learning disabilities can create challenges in making diagnoses (Graham & Shuler, 2020; Henner et al., 2018).

Test translation, commonly used with students whose primary language is not English, was another identified challenge (Henner et al., 2018; Holcomb & Lawyer, 2020). Frequently, professionals evaluate a student using a standardized tool for hearing students while being assisted by an interpreter throughout the assessment process (Holcomb & Lawyer, 2020). The interpreter communicates instructions and translates assessment test items from the source language, typically English, into the target language, such as ASL. The literature cautioned that test translation creates linguistic and cultural limitations (Henner et al., 2018; Holcomb & Lawyer, 2020; Smith & Allman, 2020). One significant drawback of this approach is that the quality of the interpretation could significantly influence the student's performance (Holcomb & Lawyer, 2020). Professionals who utilize an ASL-English interpreter during an individual's assessment must be aware of the inherent challenges in translating a test (Smith & Allman, 2020).

Ultimately, the literature advocated for multidisciplinary teams to consider the collective results from all assessments (Neild & Fitzpatrick, 2020). Additionally, when evaluating students who are deaf, team members need to carefully consider the influence of accommodations and modifications on test results (Smith & Allman, 2020). They should consider the individual

student's diversity, cognitive abilities, language of instruction, cultural perspective, and language learning experiences. Furthermore, assessments were recommended to supplement daily observations and the judgments of families and teachers rather than replacing them (Holcomb & Lawyer, 2020; Neild & Clark, 2020).

Languaging Practices

Instructional practices for languaging in a bimodal bilingual program were explored in the literature. First, instructional techniques for translanguaging across the curriculum were reviewed. Next, the concept of literacy through a deaf lens and instructional practices was explored. The concept of language therapy within the framework of the Language Zone was investigated. Then, technology tools that support the development of bimodal bilingualism were reviewed. Finally, the controversy regarding the development of spoken language was addressed.

Translanguaging Across the Curriculum. Several methods of natural translanguaging practices have been identified through observations of deaf children of Deaf parents (Holcomb, 2023), Deaf adults within natural conversations (Allard & Pichler, 2018), and Deaf teachers of the deaf interacting with their deaf students (McGovern, 2023).

Improvised Sign (IS). Allard and Pichler (2018) observed Deaf-led approaches to multilingual and multimodal communication and documented successful strategies for improvised sign (IS) production. IS was described as using mime and gesture rather than formal signs to negotiate meaning. This strategy was observed among Deaf signers who use different languages, aiming to bridge the inevitable lexical gaps encountered (Allard & Pichler, 2018).

Self-Talk and Rehearsal. Holcomb (2023) describes rehearsing, or self-talk, as a process where an individual explores various words in a language, such as ASL, to identify the most suitable one that aligns with the intended meaning in their other language, such as English. This

practice considers different word options before selecting the one that best captures the desired meaning.

Backtranslation. McGovern (2023) described the use of backtranslation, which involves translating a text from one language, such as English, to another language, such as ASL, typically by the educator. Next, the translated text is retranslated back into the source language by the student unaware of the original text. He explained that the purpose of backtranslation is to assess understanding and ensure the intended meaning is preserved.

To successfully and fairly implement translanguaging pedagogy, teachers must comprehend the impact of language ideologies and power dynamics on language and semiotic resources within the classroom (Wolbers et al., 2023). In addition, Allard and Pichler (2018) suggested that successful translanguaging in deaf education necessitates proficiency in at least one native sign language, which, regrettably, is not fulfilled by most educators working with Deaf students. This understanding is essential to effectively engage in translanguaging practices and promote equitable language learning environments.

Literacy through a Deaf Lens. The *deaf lens* provides a perspective through which literacy learning can be examined, emphasizing exploring access issues related to modality, cultural differences, and visual strengths (Jones, 2021). Copious literature suggested that linguistic and cultural assets, such as sign-to-print mapping and deaf cultural capital, are the foundation for literacy instruction (Cheng et al., 2021; Jones, 2021; Paul & Editor, 2021). Furthermore, multiple empirical studies have provided evidence that sign language proficiency is one of the most influential factors in predicting the development of written language skills in deaf children (Hoffmeister et al., 2022; Scott & Hoffmeister, 2018). The literature predominately focused on instructional practices navigating signed language and print, including the

development of print vocabulary (Alawad & Musyoka, 2018; Di Perri, 2021; Falk et al., 2020), shared reading and writing experiences (Dostal et al., 2019; Holcomb, 2023; Wolsey et al., 2018), and translanguaging practices such as using the placeholder strategy when writing (Di Perri, 2021; Holcomb, 2023).

Developing Print Vocabulary. Numerous researchers have extensively documented that vocabulary knowledge is a crucial factor contributing to reading comprehension (Allard & Pichler, 2018; Paul & Yan, 2023; Scott et al., 2019). The literature identified three practices for developing print vocabulary among deaf students. First, the literature review provided evidence of a strong correlation between fingerspelling and vocabulary acquisition in children (Alawad & Musyoka, 2018). Second, a study by Falk et al. (2020) examined the effectiveness of visual sight word intervention outlined in the Bedrock Literacy Curriculum. Third, the review evidenced that multiple-meaning vocabulary development supports conceptually accurate reading comprehension within the Fairview Learning program (Alasim, 2021; Schimmel et al., 2012).

Several studies have investigated the impact of ASL, along with fingerspelling and English orthography, on the advancement of early and emergent English literacy skills, as well as cognitive abilities and social adaptation (Alawad & Musyoka, 2018; Allen & Morere, 2020; Paul & Yan, 2023). The visual representation of orthography through hand movements and fingerspelling was identified as a possible connection between ASL and English (Alawad & Musyoka, 2018; Scott et al., 2019). Scott et al. (2019) indicated that neuroscientific findings suggested deaf readers process printed and fingerspelled words similarly.

Various teaching strategies were identified to integrate fingerspelling with print (Allard & Pichler, 2018; Holmström & Schönström, 2018; Scott et al., 2019). Two approaches include *chaining* and *sandwiching*. Chaining involves establishing meaningful connections between

different representations of words, such as the printed word, the corresponding sign, a picture, and its fingerspelled form (Alawad & Musyoka, 2018; Allard & Pichler, 2018; Holmström & Schönström, 2018). On the other hand, sandwiching involves fingerspelling and signs, with one form "sandwiched" between the other to create connections (Scott et al., 2019). In this method, the target word can be presented in either fingerspelled, signed, and fingerspelled or signed, fingerspelled, and signed format. Deaf teachers employ both instructional approaches to establish links between printed words, fingerspelling, and ASL signs (Allard & Pichler, 2018; Scott et al., 2019).

There was substantial evidence supporting the effectiveness of employing a combination of signs, fingerspelling, printed words, and various bilingual fingerspelling strategies, including lexicalized fingerspelling, chaining, fingerspelling stories, and the connecting-explaining strategy, in aiding deaf students in the recognition and learning of new vocabulary and the development of their reading and writing abilities (Alawad & Musyoka, 2018). In conclusion, multiple studies indicated that deaf students utilize fingerspelling as a visual method to remember, decipher, read, and write English words (Alawad & Musyoka, 2018; Scott et al., 2018; Paul & Yan, 2023). Additionally, fingerspelling serves as a means for them to express their cultural identity (Allen & Morere, 2020).

Two studies evidenced increased reading trajectories among deaf students via sight word intervention (Davenport et al., 2019; Falk et al., 2020). One such intervention, the Bedrock Literacy Curriculum, developed a developmental sight word list for deaf students based on concrete, meaningful words instead of traditional phonemic-based or common sight words implemented with hearing students (Di Perri, 2021). The Bedrock approach to vocabulary development emphasizes two key principles: a) the construction of lists that incorporate a

developmentally suitable progression of words, ranging from concrete to abstract, and b) strategies to ensure that lexical items are effectively stored in long-term memory. Di Perri (2021) contended that storing vocabulary in long-term memory is crucial to effective vocabulary instruction. A study by Falk et al. (2020) examined the effectiveness of this intervention and evidenced increased reading vocabulary among deaf students. Likewise, a sight word intervention conducted through a single-case design revealed that consistent and repeated exposure to sight words via one-to-one intervention aided kindergarten-age deaf children within a bimodal bilingual setting in acquiring sight words (Davenport et al., 2019).

The last strategy identified to develop print literacy was teaching multiple-meaning words and phrases, such as the Fairview Learning program (FV). Not much attention was given to FV within the literature. However, it is a widely employed literacy intervention that utilizes sight word instruction, phonology, and morphology instruction to teach children how to read words (Schimmel et al., 2012). FV places a strong emphasis on structured vocabulary development and improving reading fluency through the utilization of the adapted Dolch and bridge Lists (Deming, 2010; Schimmel et al., 2012) while concurrently fostering writing skills and ASL proficiency (Schimmel et al., 2012). Schimmel et al. (2012) asserted that to implement these approaches effectively, it is crucial to have a clear distinction between languages, and teachers employ advanced techniques such as codeswitching and translanguaging to incorporate both languages seamlessly. The inherent nature of decoding multiple meanings and approximating semantics enriches the development of language, enhances metalinguistic awareness, boosts cognitive flexibility, and promotes a deeper understanding of concepts in terms of their semantics and pragmatics (Hoffmeister et al., 2022; Lederberg et al., 2019; Schimmel et al., 2012).

Reading Practices. The most prominent approach to teaching reading in the literature was the practice of shared book reading (SBR). During ASL and English bilingual SBR lessons, there is active engagement and interaction between the teacher and students as they read a storybook together (Wolsey et al., 2018). During SBR, adults demonstrate translanguaging practices by providing deaf children access to videos and books in multiple languages, including ASL/English bilingual storybooks that exemplify the integration and connections between ASL, English, and other languages (Holcomb, 2023). Through discussions and interactions with the texts, deaf children develop implicit and explicit awareness of vocabulary and linguistic features across different languages and diverse ways of expressing similar concepts (Holcomb, 2023; Wolsey et al., 2018). Research revealed that implementation of SBR led to improved ASL and English proficiency in deaf children (Wolsey et al., 2018).

Writing Practices. Similar to shared reading, shared writing—also called interactive writing (IW) or strategic interactive writing instruction (SIWI)—is a strategic and collaborative writing approach where a teacher and students work together to create a written text (Dostal et al., 2019; Secora et al., 2023; Wolbers et al., 2022). SIWI integrates various evidence-based practices in writing instruction, including teaching strategies for writing processes and skill development, encouraging the creation of authentic and purposeful written pieces, and utilizing model texts as examples (Bowers et al., 2018; Secora et al., 2023). It involves shared decision-making, with the teacher strategically guiding the writing process and students actively participating in generating ideas, composing sentences, and constructing the text as a group (Dostal et al., 2019). Additionally, SIWI incorporates translanguaging strategies used to address expressive or receptive communication breakdowns among deaf children with diverse language needs, including role play, drawing, using objects/pictures, and gesturing (Bowers et al., 2018;

Secora et al., 2023). Holcomb (2023) points out that these intentional activities create opportunities for genuine translanguaging practices to flourish among deaf children, considering their internal linguistic perspectives and external language influences.

The placeholder technique was commonly used in the literature during independent writing activities (Di Perri, 2021; Hamman, 2018). Holcomb (2023) explained that children's early language and literacy experiences guide them to express their thoughts through print, beginning with drawing and scribbling and progressing to writing letters, words, and phrases. In addition, Wei (2018) asserted that to foster effective writing development, it is important to provide children with opportunities to express themselves freely, utilizing any available linguistic features. The placeholder technique, also called the handshape holder, encourages creative expression and allows children to explore language without constantly conforming to external pressures that promote language separation, strict adherence to monolingual communication norms, or the use of specific language registers (Di Perri, 2021; Hamman, 2018).

Di Perri (2021) contended that conveying internal ASL thoughts in logographic form using the placeholder technique necessitates explicit instruction to develop the necessary skills. In a daily independent writing activity, students are instructed to use a handshape holder to substitute an unfamiliar English word. This technique enables students to maintain a fluent flow of thought without relying on external help (Di Perri, 2021) and revisit it later to replace it with a word in English with a similar meaning (Bauer et al., 2020). Holcomb (2023) illustrated this when she observed deaf children of deaf parents naturally utilizing this technique in their independent writing. One example included a bilingual deaf child who used the phonetic handshape-5 by writing *55* to represent *BEAR* since the 5-handshape is used with two hands to produce the ASL sign for BEAR.

Dostal et al. (2019) articulated that ASL can manifest in a student's writing by including a single signed word at the phrase or sentence level. Holcomb (2023) attested that by utilizing translanguaging strategies such as the placeholder technique, children can make sense of newly encountered words in the target language and integrate them into their written expressions.

Language Zone. The main objective of the language zone, also called language therapy (McGovern, 2023), is to create opportunities for affirming language experiences and foster linguistic agency, allowing students to take control of their language development within a structured environment (McGovern, 2023; Secora et al., 2023). In a recent case study conducted by McGovern (2023), students were introduced to a translanguaging framework and strategies in their bimodal language work, and they experienced improvements in their conventional written English and underwent positive changes in their overall language approach. McGovern (2023) explained that students initially displayed hesitancy and disinterest in writing, often feeling discouraged by the difficulties of expressing their thoughts in written form. At the end of one year, students showed heightened engagement, greater independence, and a stronger sense of agency. Moreover, he theorized that individuals could develop sensory-cultural resilience by cultivating a sense of linguistic agency and empowerment, enabling them to resist harmful ideologies.

The language zone, or language therapy, provided students with opportunities and resources to utilize their entire linguistic repertoire, including exercises focused on production in specific languages (McGovern, 2023; Secora et al., 2023). Various tools, such as bilingual dictionaries, a whiteboard for brainstorming in multiple languages, and a computer equipped with a camera for capturing expressions in ASL and spoken language, supported practice to enhance language skills (McGovern, 2023). Translanguaging practices are emphasized through

modeling and discussions (McGovern, 2023; Secora et al., 2023). Additionally, metalinguistic processes such as clarifying conversations, comprehending language mechanisms, or employing strategies to enhance students' expressions are frequently used (Secora et al., 2023).

Technology Tools. Research indicated that technology is a powerful tool in the deaf translanguaging classroom (Holmström & Schönström, 2018; McGovern, 2023). In the literature, translanguaging classrooms were equipped with multimedia tools, including whiteboards, computers, projectors, and other resources (Holmström & Schönström, 2018; McGovern, 2023). Computer software such as PowerPoint and Word were also available for instructional purposes. While using white screens, computers, projectors, and PowerPoint slides is prevalent in teaching in general, Holmström and Schönström (2018) argued that they hold particular importance in deaf-led classrooms for translanguaging purposes. These technological tools allow instructors to utilize both signed and print/spoken languages in visual formats during instruction. In addition, the study found that the available resources in these classrooms predominantly rely on visual accessibility, including images, diagrams/figures, and enactments. This is complemented by languages that primarily manifest in signed and written modes.

The use of technology in the bilingual classroom for deaf students is expanded on by Kourbetis and Karipi (2021). They described using interactive sign language dictionaries and signing books to support sign language development and provide a resource for bilingual literacy development. Teachers of the deaf evaluated the effectiveness of these applications implemented within a K-12 instructional setting (Kourbetis & Karipi, 2021). According to the participants' feedback, incorporating accessible educational resources in the classroom and employing distinct materials specifically designed for teaching a native signed language, such as ASL, proved beneficial in multiple ways. These approaches offered teachers visual aids, facilitated the

availability of curriculum-aligned assessment materials in sign language, and provided valuable support to non-native signing teachers in enhancing their language proficiency. Observational data further indicated that utilizing online educational materials was an effective and cohesive pedagogical strategy for achieving bilingual education success among deaf children.

Spoken Language. The theoretical foundation of bimodal bilingualism follows an additive approach, encompassing both a visual language (such as sign language) and an auditory/spoken language (Cheng et al., 2021). Proponents argue that using a signed language can facilitate spoken language development (Pontecorvo et al., 2023; Sanzo, 2022). Rhoades (2018) suggested that children with reduced hearing who engage in bimodal communication are more likely to acquire spoken language skills that align with their age and other positive developmental outcomes.

A study by Cheng et al. (2021) demonstrated that children can develop in a bilingual environment that incorporates both modalities through early exposure to both sign and spoken language. After 1 year of intervention within a bimodal bilingual preschool, a deaf child in the study demonstrated an average of two years of growth in spoken language, including an increase from one- to three-word utterances, use of subject-verb-object, and asking questions. They reported that the collaboration between the speech-language pathologist (SLP) and the teacher of the deaf was instrumental. It was recommended within the research that educators should closely monitor language development milestones and educate families about the possibility of achieving these milestones in any language (Clark et al., 2020; Hall et al., 2019).

Furthermore, Sanzo (2022) and Secora et al. (2023) reasoned that the speech-language pathologist (SLP) could use translanguaging by encouraging deaf students to use their language of choice within a sentence or conversation and providing the natural transition between

languages. Furthermore, implementing bilingual strategies such as chaining exposes the deaf child to both languages, spoken and signed (Sanzo, 2022). Clark et al. (2020) cautioned that given the differences in hearing levels and the varying efficacy of hearing technology, it cannot be assumed that spoken language is always fully accessible to deaf children.

SimCom. In a typical classroom for deaf students, teachers encounter difficulty accommodating students with a wide range of hearing abilities, signing skills, spoken/written language proficiency, and communication preferences (Allard & Pichler, 2018). SimCom provides a logical solution that aligns with translanguaging practices by tailoring instruction to meet all students' cognitive, social, and creative needs while providing them with the appropriate linguistic input. While Deaf adults have been observed using SimCom as a form of negotiating meaning, especially in communications with non-signers, Allard & Pichler (2018) cautioned that in this context, the prescriptive application of translanguaging through SimCom can raise valid concerns, as it may be seen as endorsing sign systems derived from spoken languages or promoting fluid language practices that mix codes. This goes against advocates' goals to preserve sign language as a minority language and promote using sign language(s) in the classroom (De Meulder et al., 2019).

Using the term translanguaging to describe SimCom behaviors employed by hearing teachers of deaf students can often conceal underlying power dynamics between speech and sign languages (McGovern, 2023). When sign and speech are used together by hearing teachers who lack fluency in sign language, sign language grammar and vocabulary are likely to be undermined or marginalized (Scott & Henner, 2021). This is distinct from language production in bimodal bilingual children and adults, where translanguaging naturally occurs through cross-modal language mixing and responsively employs ASL or English, with ASL or English as the

dominant syntactic framework (McGovern, 2023). In addition, De Meulder et al. (2019) forewarned that not all forms of combining sign and speech are accessible to every deaf individual in all situations. They continued that SimCom is used in this context to exacerbate unequal access, resulting in a widening gap between individuals with greater sensory access to English and those with less.

Summary

In summary, this literature review explored inclusive learning spaces through a deaf lens, language policy, appropriate assessment, and languaging practices in bimodal bilingual education. Findings indicated that the existing systematic practices in the field of deaf education are insufficient in effectively addressing the ongoing language delay challenges among deaf students (Czubek, 2021; Hall et al., 2019; Silvestri & Hartman, 2022). Copious literature recommended the implementation of bimodal bilingual interventions as a solution (Clark et al., 2020; Pichler, 2022; Pontecorvo et al., 2023). Scholars advocated for shifting the focus in deaf education towards enhancing bilingual/bimodal teaching methods rather than debating the benefits of bimodal education for deaf children to ensure that deaf children have equal opportunities for education and development, similar to their hearing peers (Hoffmeister et al., 2022).

Ethical Assurances

The American Educational Research Association (AERA, 2011) Code of Ethics sets forth ethical principles and standards that govern the professional work of education researchers. This Code was a roadmap for adhering to the highest possible standards for professional, legal, and ethical issues that impact this study. Given the sensitivity of the information being shared in this study and the power relationships involved, strict adherence to the standards of

nondiscrimination and nonexploitation is important. Obtaining informed consent is a fundamental ethical principle in scientific research involving human populations (AERA, 2011, 13). Written consent was obtained from each research participant, and particular emphasis was placed on ensuring consent is not coerced [13(d)], primarily since the study will involve subordinates within the researchers' workplace. It was communicated to participants that they have the freedom to withdraw their consent [13.02(d)] at any point during the study without adverse consequences [7(a); 13.03; 14.02]. Approval from the school where the research was undertaken was obtained before the university's Institutional Review Board (IRB) approval. Once IRB approval was obtained, participants were recruited, and consent was received. Open communication with participants was established to safeguard the confidentiality of sensitive information collected during the data-gathering process and dissemination of research results by removing any identifiable information such as program name, location, participant names [12(a); 12(b)]. Each participant was assigned an identifier consisting of a letter and a numeral, such as R1, R2, R3, and so on. This identifying label is affixed to all paper files and binders, which are then stored in a secure, locked file cabinet, ensuring the confidentiality and autonomy of the participants. If names are necessary in the description of the study or analysis of the data, pseudo-names were used as identifiers. In accordance with IRB regulations, all data were shredded or securely deleted three years after this study is published.

Researcher Positionality

The subject of this research is connected to my personal experience as a bimodal bilingual Deaf adult and administrator at the site of this study. As a daily user of ASL and English, I have encountered the implicit bias of educators who hold biomedical epistemic beliefs which impact our interactions. I also recognize the limitation of my perspective as a Deaf adult

striving to overcome the disabled identity and the social oppression central to my lived experience. To eliminate potential bias, I used an interview protocol that was carefully designed to ask questions in a neutral manner and shared my analysis of findings with participants to ensure accurate representation. Furthermore, a reflexive journal was maintained throughout the research process to document and identify the line between personal bias and accurate representation of the data in order to assist in analysis of the data.

Summary

The preceding literature provided a foundational understanding surrounding the language tensions persistent in the education of deaf students (Full & La, 2023; Secora & Smith, 2021), which influence instructional practices within the classroom (Musyoka, 2022). Educators of the deaf have contrasting perspectives on and approaches to addressing the language and literacy needs of deaf students within the classroom (Full & La, 2023). Even among the growing evidence suggesting the benefits of bimodal bilingual education (Villwock et al., 2021), some educators of the deaf cling to the biomedical epistemic beliefs that influence deficit-focused practices such as English monolingualism, perpetuating limited language outcomes which impact academic performance (Fullwood & Levinson, 2023). Scholars advocated for shifting the focus in deaf education towards enhancing bimodal bilingual teaching methods rather than debating the benefits to ensure that deaf children have equitable access to education and linguistic development, similar to their hearing peers (Hoffmeister et al., 2022).

This qualitative descriptive study examines educator's perspectives about implementing practices in a regional bimodal bilingual regional program for deaf students. This study is a logical response to understand the diverse perspectives of educators within a regional program

for deaf students. Data will be collected through individual semi-structured interviews and focus groups between the researcher and the participants.

The translanguaging framework for deaf education (TFDE) guides this study (Wolbers et al., 2023). The TFDE serves as a pedagogical framework aimed at facilitating language learning in the field of deaf education. The TFDE encourages educators to adopt an asset-oriented approach towards language use and users. The core tenets and pedagogical principles of the TFDE guided the creation of the research questions for this study.

Finally, the literature review revealed that the establishment of inclusive learning spaces through a deaf lens necessitates cultivating individual and collective dialogue and actions centered around investigating how cultural perspectives, experiences, and histories unite and separate members within the system (Jones et al., 2021; O'Brien, 2020). This viewpoint shifts the focus of literacy instruction to an asset-based approach that highlights the visual sensory strengths, sign-to-print mapping strategies (Jones, 2021). The research also indicated considering the unique strengths and experiences deafness brings to individuals rather than focusing solely on the challenges associated with hearing loss (Basas et al., 2023; Smagorinsky & Lang, 2023) and the indicated the need for programs to harness the cultural capital of Deaf individuals to enhances student performance and motivation (Holcomb, 2023; Johnson et al., 2020; Jones, 2021).

The following section will contain a discussion of this qualitative descriptive study design. It will review how participants will be selected, how the data will be collected, and how the data will be analyzed. Assumption, limitations, and delimitations will also be discussed.

Section 2: Methodology and Design

The problem that was addressed in this study is that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom (Fullwood & Levinson, 2023). This leads to the perpetuation of inequities and marginalization of deaf students who use ASL and affiliate with deaf culture and the Deaf community. The purpose of this study was to examine educators' perspectives on implementing bimodal bilingual practices in a regional program for deaf students. A qualitative methodology and a descriptive research design allowed robust data collection within a constructivist framework and addresses the following research questions:

RQ1**:** How do educators in a bimodal bilingual regional program describe how they address language diversity within the classroom?

RQ2: What are educators' perceptions of the benefits and challenges of implementing a bimodal bilingual pedagogy in a regional deaf education program?

RQ3: How do educators in a bimodal bilingual regional deaf education program describe how they assess, delineate, and address students' diverse language and communication needs?

The following section provides details of the study, including research design and methodology, population and sample descriptions, materials and instrumentation, and data collection and analysis processes. This section further provides assumptions, limitations, and delimitations of the research.

Design and Method

A qualitative methodology emphasizes the importance of comprehending intricate phenomena by considering the diverse subjective realities the participants perceive, often called

their *insider* perspectives (Creswell & Poth, 2018). My assumptions, along with a theoretical framework, guided my research to identify a problem focused on how individuals or groups perceive the human issue of selecting educational pedagogy in deaf education. A qualitative approach involves employing an emergent qualitative methodology, collecting data in authentic settings with attentiveness to the individuals and contexts involved (Creswell & Poth, 2018). The analysis of the data encompasses both inductive and deductive reasoning, identifying and establishing patterns or themes. The ultimate report or presentation integrates participant perspectives, my own reflection as a researcher, a comprehensive depiction and understanding of the problem, and highlights its significance in the existing body of knowledge.

Quantitative research depends on gathering and examining numeric data to depict, elucidate, forecast, or manage significant variables and phenomena (Mertler, 2019). A quantitative methodology would not have accurately described educators' autonomy in implementing bimodal bilingual practices within the classroom setting. ASL/English bilingual programs are more diverse than strictly listening and spoken language programs (Tanner & Harrison, 2023). Gathering teacher perspectives on implementing bimodal bilingual practices is a first step to examining the variability in ASL/English bilingual programs to add to the current research.

The most suitable approach for this study was qualitative descriptive research due to its informal and flexible structure (Kahlke, 2014). This flexible structure enabled the blending of methods, creating opportunities to explore various facets within the research to capture a deeper understanding of individual participants' perceptions (Doyle et al., 2020). As Sandelowski (2010) highlighted, employing qualitative descriptive research involves embracing a constructivist epistemology to comprehend participants' viewpoints of their world, experiences,

and how they create meaning. The qualitative methodology employs a naturalistic inquiry, supporting the research design (Sandelowski, 2010). In education, descriptive research can result in a holistic understanding of key stakeholders, specifically those involved in implementing bimodal bilingual pedagogy across different educational tiers (Aguas, 2021). Consequently, the flexible nature of this qualitative descriptive study enriches knowledge that is highly pertinent and beneficial for the field of deaf education.

Initially, several other qualitative designs were explored. A qualitative phenomenological study could have examined natural events to better understand educators' shared experiences (Creswell & Poth, 2018). Participants are meticulously selected, ensuring they are individuals who have collectively encountered the phenomenon under investigation. This ensures that, ultimately, the researcher can establish a shared comprehension. However, I wanted to uncover the diversity of the experience among educators that hinders the fidelity of implementing bimodal bilingual practices. Similarly, the objective of a grounded theory study goes beyond mere description, aiming to generate or uncover an encompassing theoretical explanation (Creswell & Poth, 2018). In a grounded theory study, the ultimate goal for the researcher is to construct a theory that encapsulates a particular process or action. While this was a consideration, a first step would be to understand the diverse perspectives of educators that hinder the fidelity of implementing a bimodal bilingual pedagogy, then examine the process to align views, such as through training. A descriptive design was appropriate for adding to current research on bimodal bilingual pedagogy in deaf education.

Data for this study were collected through semi-structured individual interviews and focus groups held via Zoom, using audio and video recording along with written translation and transcription. Since this study integrated perspectives of both hearing and deaf educators using

English and ASL, certified bilingual translators enabled the full participation of all participants. At the same time, audio and video recordings accurately captured the participants' statements. Temple & Young (2008) conveyed that translation can reinforce or counteract long-held beliefs of language powers. They reasoned that the power lies in how the qualitative researcher transparently executes and integrates translation into the research design.

The collected data were analyzed using a thematic approach supported by computer-assisted qualitative data analysis software (CAQDAS), NVivo 15. NVivo 15 facilitates the translation and sorting of data into coding categories (*NVivo Resources,* n.d.). Open coding was applied to the written transcripts of interviews and focus group discussions, leading to rich and authentic data that genuinely reflected the participants' descriptions. As Sandelowski (2010) emphasized, language is a crucial communication vehicle; hence, the coding categories naturally emerged from the participants' transcripts. Within five days, transcripts were member-checked by emailing them to the interview participants for corrections to enhance trustworthiness.

By employing a qualitative methodology and descriptive research design, the study achieved a comprehensive summary, descriptive validity, and accurate representation of the perspectives captured through the data collection process (Kahlke, 2014). As a social constructivist, I saw myself as objective and valued the need to examine the act of translating, defining cross-cultural language hierarchies, and acknowledging different language paradigms and potential biases that may arise. Audio translations were converted into written transcripts, and both languages within this study were packed into the written form, English, which fits the NVivo 15 software, enhancing the trustworthiness of data collected from all participants. When necessary, the interview or focus group video was re-observed to ensure accurate translation and intention.

Population and Sample

The population for this study was comprised of educators of the deaf, including administrators, paraprofessionals, teachers, interpreters, and related service providers. Educators of the deaf have contrasting perspectives and approaches to addressing the language and literacy needs of deaf students within the classroom (Full & La, 2023). In 2020, eighty-four schools serving deaf students, including regional programs, day schools, and schools for the deaf, were reported in the *American Annals of the Deaf* reference issue. Of these reported schools, 54 reported using both ASL and English in some format. As Tanner and Harrison (2023) reported, ASL/English bilingual programs exhibit greater diversity than programs focused solely on listening and spoken language. The target population of this study encompassed educators within these diverse educational programs implementing ASL and English with deaf students within the Western United States. The target population from which the sample was drawn for this study was originally comprised of employees from regional and district programs in the Western United States, including three administrators, ten teachers of the deaf, ten paraprofessionals, eleven ASL interpreters, and one audiologist (n = 35). The site was a bimodal bilingual regional program that served 53 deaf students from ages three through twenty-two. Participants were required to meet the following criteria to be considered for this study:

1. Participants must be age 18 or older.
2. Participants must currently work with deaf students in a bimodal bilingual program with students from preschool through 12th grade.
3. Participants must have one or more years of experience working with deaf students in an educational program, preschool through 12th grade.

4. Participants who work with students from linguistically diverse backgrounds were sought out. These will include English-only homes, non-English-speaking homes, multilingual homes, and homes with signed languages.
5. Participants must work with students with diverse hearing acuities: mild to profound hearing loss with or without amplification.

Since not enough participants from the XYZ regional deaf education program participated, the final sample for this study was 18 educators who work within regional or district deaf education programs in the Western United States. Participants could participate in either a focus group or an individual interview. Comparatively equal numbers of Deaf and hearing professionals participated (respectively, $n = 7$; $n = 8$; *other* = 2), ensuring both perspectives were captured and increasing the study's credibility.

This qualitative descriptive study involved purposeful sampling in which participants were selected initially due to their association with the XYZ regional deaf education program. As noted by Creswell and Poth (2018), the sample size should be large enough to capture the full range of perspectives, experiences, or information related to the research topic, ensuring that the research reaches a point of data saturation where additional data would not enhance the study's findings. Only four educators who work within the XYZ regional deaf education program in the Western United States ($n = 35$) agreed to participate in this study. Since not enough participants were initially secured, snowball sampling, which allows the researcher to ask participants to recommend other individuals (Mertler, 2019), was used to identify additional participants outside of the XYZ regional deaf education program who met the inclusion criteria. Additionally, neighboring regional programs with similar demographics that serve the same student population were contacted to locate participants. Participants' recruitment for this study was voluntary, and

confidentiality was preserved. Participants were not awarded any incentives or any form of compensation for this study and were free to leave the study at any time. One participant elected to withdraw participation 15 minutes into the interview.

Instrumentation

This study used two methods of data collection: interviews and focus groups. An expert panel of three deaf educators familiar with the current research in bimodal bilingual education and the translanguaging framework reviewed the interview and focus group questions. Each data source is discussed in detail below.

Interviews

Interviews entail collecting data by posing base questions to participants within a predefined thematic framework (Creswell & Poth, 2018). The semistructured interview within this study allowed participants to elect not to participate in a focus group and the ability to contribute to the larger group discussion individually. Interviews lasted approximately 45 minutes each using a researcher-developed interview protocol (see Appendix A). The interview questions were based on the literature and grounded in the framework of translanguaging in deaf education to assess current perceptions regarding bimodal bilingual deaf education. Each question resulted in data that addressed one or more elements of the framework; however, every question was developed to focus on one particular element, which is noted in parentheses after the question in the protocol. The interview protocol contains an opening script including a welcome and reminder of informed consent (see Appendix B). The questions follow. The protocol contains a closing script thanking the interviewee for their participation and discussing member checking. All interviews were audio- and video-recorded. All data was collected in the participants' self-selected primary mode of communication. Since the researcher is deaf, an ASL

interpreter was used for all spoken language users. Interpreters signed a confidentiality agreement before the interview process (see Appendix C). Recordings were transcribed and returned to participants to verify accuracy before analysis.

Focus Groups

For participants electing to participate in a focus group, two focus groups lasting approximately one hour each were conducted with two and four participants. Focus groups were audio- and video-recorded. As with the interviews, focus groups were conducted using a focus group protocol (see Appendix D) based on the literature and grounded in the translanguaging framework to assess current perceptions regarding bimodal bilingual deaf education. As with the interview protocol, each question resulted in data that addressed one or more elements of the framework; however, every question was developed in order to focus on one particular element, which is noted in parentheses after the question in the protocol. The focus group protocol contains an opening script, including a welcome and a reminder of the informed consent. The questions follow. The protocol contains a closing script thanking the focus group participants for their participation. All data was collected in the participants' self-selected primary mode of communication. Interpreters were used to allow for a free flow of communication between participants using ASL and spoken English. Interpreters signed a confidentiality agreement before the focus group (see Appendix C). Recordings were transcribed and returned to participants to verify accuracy before analysis.

Data Collection and Analysis

Participant recruitment commenced following the receipt of site authorization (see Appendix E) and approval from the University Institutional Review Board (IRB) (see Appendix F). A recruitment email was dispatched to each educator within the XYZ regional program (see

Appendix G). The email provided a clear overview of the study's purpose, its nature, desired participants, and extended an invitation for them to contact the researcher for any inquiries and to express an interest in participating in this study. The same recruitment email was later sent to neighboring regional programs in an effort to gather more participants. Additionally, a participation flyer (see Appendix H) was shared with educators at a local deaf education conference. Upon establishing contact with potential participants, an informed consent form (see Appendix B), as a PDF email attachment, was sent to each prospective participant. To acknowledge consent, participants were asked to complete a short demographic survey using the Qualtrics survey tool (see Appendix I). This survey included relevant questions to determine eligibility in this study, in addition to identifying the participants' desired language and mode of communication throughout the study. After completing the demographic survey, an email was returned to the researcher, and the interview or focus group times were scheduled. Since interpreters were used during the data collection process, they were asked to sign a confidentiality agreement (see Appendix C). This information was shared with participants.

Data Collection

Semi-structured interviews (see Appendix A) and focus groups (see Appendix D) were the primary tools of data collection for this study to gather insights into participants' perceptions of and experiences using a bimodal bilingual pedagogy in the classroom. The questions were designed to align with the study's framework in order to address the overall problem and purpose. Specific data regarding educators' perspectives regarding language diversity, addressing individual communication needs, and other challenges related to bimodal bilingual pedagogy were obtained through these tools.

Interviews. Following the receipt of site authorization (see Appendix E) and IRB approval (see Appendix F), participants who requested to participate via interview were contacted through email to schedule an individual interview in the language selected by the participant. Interviews took place virtually, after school hours, for approximately 45 minutes each to ensure confidentiality. When necessary, a highly qualified bilingual interpreter was provided. Standardized interview questions were provided to ensure consistency and relevance to each participant's perspectives (see Appendix A). At times, interviewees were directed to expand on responses to facilitate categorization within the theoretical framework of translanguaging in deaf education. Following the interview, the recording and transcript were shared with the respective participants for member checking to ensure accuracy (Creswell & Poth, 2018). Participants were emailed transcripts and asked to return corrections within five business days, after which time the interviews were considered to be accurate as transcribed.

Focus Groups. Two separate focus groups were scheduled based on the timing of participants' acceptance into the study. Participants were permitted to select a date that best fit their schedule. A maximum of four different participants per focus group ensured each individual had the opportunity to participate in the discussion. Focus groups were held virtually after school hours to maintain confidentiality. Each focus group was audio- and video-recorded. Bilingual ASL/English interpreters were provided to ensure access to all participants. Within five days of each focus group, the audio/video recordings were captioned, and a transcript was produced.

Member checking, as described by Bloomberg and Volpe (2019), involves validating participants' responses regarding their experiences. In this study, participants had the opportunity to review transcriptions for accuracy and suggest corrections. This member-checking process significantly enhances the study's credibility by ensuring that participants agreed that the

transcriptions faithfully represented their viewpoints (Motulsky, 2021). Additionally, it served to mitigate the risk of data misrepresentation, aligning with the insights of Bloomberg and Volpe (2019). Overall credibility was strengthened through triangulation, incorporating two distinct sampling methods, two varied data collection approaches, and the implementation of member checking.

Data Analysis

Data were analyzed using thematic analysis and supported through NVivo 15. The focus group data set and the interview data set were analyzed separately, and then the final themes were reconciled. Thematic analysis is a versatile and valuable approach offering theoretical flexibility that has the potential to yield a comprehensive and intricate understanding of data (Braun & Clarke, 2012). Braun and Clarke (2021) and Ellis and Hart (2023) emphasized the importance of personal reflexivity, recognizing assumptions and biases, and engaging personally in the thematic analysis process. Roberts et al. (2019) characterized thematic analysis as a nonlinear and iterative process that necessitates continual review. Computer-assisted qualitative data analysis software (CAQDAS), NVivo 15, provided valuable support in categorizing, organizing, archiving, storing, and rearranging data to facilitate analytical contemplation (Bloomberg & Poth, 2019). NVivo 15 enabled a rigorous and systematic approach to qualitative data analysis, ensuring the credibility and dependability of research findings (*NVivo Resources*, n.d.).

According to Braun and Clarke (2006), the phases of inductive thematic analysis can be outlined as follows:

- Familiarization with the data by deep immersion into it; gaining a comprehensive understanding of both its depth and breadth.

- Generate initial codes by identifying features that appear interesting and organizing the data into meaningful groups.
- Sort various codes into potential themes and gather all pertinent coded data excerpts under these identified themes, thereby shifting the focus of analysis from codes to a broader thematic level.
- Review the themes initially to confirm their alignment with the dataset and, subsequently, to identify and code any extra data within themes that may have been overlooked during the earlier coding phases, and potentially merging, splitting, or discarding themes as needed.
- Define and name themes by pinpointing the core essence of each theme, comprehending the collective theme essence, and establishing which aspect of the data each theme encapsulates.
- Produce the final analysis and write-up of the report.

All data was imported into NVivo 15, including interview transcripts, focus group transcripts, videos, and audio files and organized by creating folders. Through thematic analysis codes and sub-codes were identified that will be used to categorize and annotate segments of the data. Using NVivo 15, documents and transcripts can be highlighted and assigned one or more codes. NVivo allows the researcher to create nodes (codes) and sub-nodes to capture the complexity of the data (*NVivo Resources*, n.d.). Furthermore, NVivo's media analysis features allow for coding specific time segments of audio and video data as well as the transcribed text within these media files. Memos and annotations were added to the coded segments to provide explanations, notes, or reflections about why a particular code was assigned. A key aspect of qualitative analysis using NVivo 15 is the ability to compare codes and themes as more data is

coded, and refine coding structure to develop a deeper understanding of the topic (*NVivo Resources*, n.d.).

Once a significant portion of the data was coded, NVivo enabled a further exploration of the data (*NVivo Resources*, n.d.). Queries were run and visualizations were generated to identify patterns, relationships, and newly emerging themes previously not considered. Finally, retrieving the coded data and running searches for specific codes, code combinations, or by characteristics of the data, such as pseudo name, date, or source, facilitated narrating the findings to generate reports supporting final documentation. NVivo 15 enabled a rigorous and systematic approach to qualitative data analysis, ensuring the credibility and dependability of the research findings (*NVivo Resources*, n.d.). In addition, the software provided an audit trail, helping maintain transparency in the research process by tracking all changes, codes, and annotations made during the analysis.

Braun and Clarke (2021) argued that novice researchers tend to favor thematic analyses, particularly when employing exploratory approaches. Thematic analysis was inherently qualitative and aligned with the research problem, purpose, questions, methodology, and design. In discussions on data analysis, Saldaña and Omasta (2017) acknowledged that data analysis is an interpretive procedure. Aguas (2022) emphasized the need to fuse data analysis and data interpretation by connecting the descriptive aspect with interpretation through an ongoing reflection process facilitated by a reflexive journal, employing intuition as a foundation for comprehending the essence or fundamental nature of the experiences of research participants. This rendered interpretations meaningful by integrating prior understandings and collaborative contributions while upholding a sense of epistemological impartiality. Finally, participants provided input to confirm the accuracy of the descriptions and interpretations. These two

processes intertwined to reveal not only an understanding of the phenomenon being studied but also the significance of this understanding in the research (Aguas, 2021).

Assumptions

The main objective of this research was to examine educator perspectives about implementing a bimodal bilingual pedagogy in a regionalized or district program with a diverse population of deaf students. It was initially presumed that each participant would be professional and provide truthful, detailed responses to aid in effectively implementing a bimodal bilingual pedagogy. Moreover, it was also assumed that the information provided by the participants would accurately reflect their perspectives. The credibility of the data would be bolstered by the participants' candor and their ability to effectively communicate their experiences, as emphasized by Chacón-Moscoso et al. (2018). Lastly, it was assumed that the participants could accurately convey their views and experiences related to bimodal bilingual practices and resources.

Limitations

This study's limitations included variables beyond control or influence (Bloomberg & Volpe, 2019). The challenge of replicating the research may constrain this qualitative descriptive study since it was focused on only a small data set within regionalized and district programs in the Western United States (Kahlke, 2018). Furthermore, limitations may include participants' varied exposure to resources and skills learned in the months prior to data acquired from program-wide initiatives and coaching educators for programmatic improvement that may not be present in all cases. Consequently, the findings might not apply to educators in different schools who have not participated in the same coaching experience.

Due to interviewer bias in descriptive qualitative research, it was crucial to recognize any presumptions or partiality (Ellis & Hart, 2023). Employing a technique such as maintaining a

reflexive journal throughout the study was vital, as it enabled the comprehension of personal stance within the research and acknowledged the researcher's position. To mitigate this bias, open-ended questions for individual interviews and focus groups were reviewed by an expert panel (Kahl, 2014), and pre-determined follow-up questions were used to maintain a tight alignment with the study framework.

Delimitations

In this research study, delimitations were deliberately set. The focus of this study was to explore the perceptions of educators implementing a bimodal bilingual pedagogy and identify perceived benefits and challenges based on the framework of translanguaging in deaf education. The method of applying resources and strategies during instruction was not specified. The interest was primarily in understanding educators' viewpoints regarding any methods utilized in the classroom and their effectiveness within a bimodal bilingual pedagogical approach. Additionally, educators' perspectives on student language diversity within the classroom were examined to ascertain how educators implement bimodal bilingual instruction for a diverse population of students. An additional delimitation of this study was the size of the study and the challenge in recruiting participants, as it was constrained to only the Western United States. Due to scheduling and accessibility constraints, a purposive sampling method was initially used to focus on educators within the XYZ regional deaf education program in the Western United States. Next, educators outside of the XYZ regional deaf education program in the Western United States who followed a bimodal bilingual pedagogy were recruited following the snowball method. This may not represent all deaf educators, deaf education programs, or deaf students in other regions.

Summary

This study employed a qualitative descriptive approach, focusing on regional and district deaf education programs in the Western United States to investigate educators' perspectives on implementing bimodal bilingual practices. The research analyzed individual interviews and focus groups to deepen insight into perspectives and experiences regarding bimodal bilingual pedagogy in deaf education. Adhering to best research practices, such as researcher journaling, peer reviews, recordings, and member-checking, ensured the study's credibility. The outcomes of this research can potentially extend the knowledge in the field of deaf education and bimodal bilingual pedagogy to optimize practice.

Section 3: Findings, Implications, and Recommendations

The purpose of this qualitative descriptive study was to examine educators' perceptions about implementing a bimodal bilingual program for deaf students within a regional program in the Western United States. The problem that was addressed in this study was that educators' diverse perceptions could hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom (Fullwood & Levinson, 2023). This leads to the perpetuation of inequities and marginalization of deaf students who use ASL and affiliate with Deaf culture and the Deaf community.

The following section presents the results, organized by the research questions. It includes a description of the participants, and the execution of the data analysis procedure outlined in Section 2. Subsequently, the outcomes are evaluated, and the findings within the relevant literature are interpreted. This section further explores implications and recommendations for practice, followed by suggestions for future research. Finally, a conclusion is offered to summarize the study.

This study has several limitations, including factors beyond control or influence (Bloomberg & Volpe, 2019). The qualitative descriptive nature of this study poses challenges in replicating the research, as it concentrated solely on educators in regionalized and district programs in the Western United States (Kahlke, 2018). Additionally, limitations may arise from participants' exposure to resources and skills acquired in the months preceding data collection from initiatives to coach educators for programmatic improvement. Consequently, the findings may not be transferable to educators in different schools who have not participated in a similar coaching experience.

During the descriptive qualitative research, acknowledging and addressing interviewer bias was essential to ensure transparency and objectivity, as noted by Ellis and Hart (2023). Maintaining a reflexive journal throughout the study minimized personal perspective within the research and potential biases. Open-ended questions for individual interviews and focus groups vetted by an expert panel additionally mitigated interviewer bias (Kahl, 2014). Finally, predetermined follow-up questions ensured alignment with the study framework.

Findings

This section presents the findings from this qualitative study exploring educator perspectives on implementing bimodal bilingual pedagogy within a district or regional deaf education program, with data gathered through individual interviews and focus groups with a total of 18 participants. The analytical process involved a thematic approach, where interview and focus group data were analyzed separately to identify distinct patterns and insights. These findings were then reconciled to reveal five overarching themes that capture the breadth and depth of educators' experiences and challenges. This section will elaborate on each of these themes, supported by rich qualitative data, to provide a comprehensive understanding of the current landscape from the perspectives of those directly involved in classroom instruction.

Participants

This study used Qualtrics to collect participant demographic information to ensure qualification for this study (see Appendix I). Participants were asked about their current job title, years of experience, self-identification, primary language, student diversity, and how they communicate with their students. The total number of participants in this data set was 18. Thirteen participants opted for personal interviews. Five educators participated in a focus group. Focus group 1 consisted of two educators, and group 2 consisted of three educators.

Seven interview participants were teachers of the Deaf. Other interview participants included three instructional aides and one educational audiologist. Five participants had 11 or more years of educational experience. Additional diversity of educational experience among participants was 1-3 years (n = 4), 7-10 years (n = 3), and 4-6 years (n = 1). Seven interview participants self-identified as hearing; one of those seven participants identified as a child of Deaf adults (CODA). Six interview participants identified as deaf; one of those six participants identified as both a CODA and hard of hearing (HoH). This created an equal balance of deaf and hearing educators. Five of the hearing interview participants stated their primary language was English. One stated they were bilingual in English and Spanish. The CODA and another hearing interview participant stated they were bilingual in ASL and English. All six Deaf participants stated that their primary language was ASL. Table 1 shows the participant demographics for interviews.

Table 1

Interview Participant Demographics

Participant Code	Role	Educational Experience	Self-Identififcation	Primary Language
Participant 1	Teacher of the Deaf	4-6 years	Hearing	English
Participant 2	Teacher of the Deaf	7-10 years	Hearing	English
Participant 3	Instructional Aide	1-3 years	Deaf	ASL
Participant 4	Teacher of the Deaf	7-10 years	Deaf	ASL
Participant 5	Teacher of the Deaf	7-10 years	Deaf	ASL
Participant 6	Teacher of the Deaf	11 or more years	Deaf	ASL
Participant 7	Instructional Aide	11 or more years	Hearing	English/Spanish
Participant 8	Teacher of the Deaf	11 or more years	Hearing	English
Participant 9	Teacher of the Defa	1-3 years	CODA/HoH	ASL
Participant 10	Deaf Interpreter	1-3 years	Deaf	ASL
Participant 11	Instructional Aide	1-3 years	CODA	ASL/English
Participant 12	Educ. Audiologist	11 or more years	Hearing	English/ASL
Participant 13	Teacher of the Deaf	11 or more years	Hearing	Engish

Table 2 shows the participant demographics for the two focus groups. Participants 16 and 17 participated in focus group 1, and the others (Participants 14, 15, and 18) participated in focus group 2. Focus group 1 consisted of one teacher of the deaf and one instructional aide. The teacher of the deaf had 1-3 years of experience, while the instructional aide had 4-6 years of experience. Both participants in focus group 1 self-identified as Deaf. One participant stated they were ASL and English bilingual, and the other participant stated their primary language was ASL. Focus group 2 consisted of three administrators. The obvious division of participants was not intentional. Two participants had 11 or more years of experience, while the other participant had 7-10 years of experience. It was not identified if this experience consisted solely of managing deaf education programs. Two of the two focus group 2 participants self-identified as hearing, and one self-identified as Deaf. Two of the participants indicated their primary language was English. The Deaf participant indicated their primary language was ASL and English bilingual.

Table 2

Focus Group Participant Demographics

Participant Code	Focus Group	Role	Educational Experience	Self-Identifiifcation	Primary Language
Participant 14	Group 2	Administrator	7-10 years	Hearing	English
Participant 15	Group 2	Administrator	11 or more years	Deaf	ASL/English
Participant 16	Group 1	Aide	4-6 years	Deaf	ASL/English
Participant 17	Group 1	Teacher of the Deaf	1-3 years	Deaf	ASL
Participant 18	Group 2	Administrator	11 or more years	Hearing	English

Interview Data

Following the university's Institutional Review Board's approval (see Appendix F) and school site approval (see Appendix E), 13 semistructured interviews were used to collect data. Participant interviews were set up, and participants provided verbal informed consent (see Appendix B). The 13 semistructured interviews took place via Zoom, and audio recordings and transcripts were generated by the Zoom transcription feature for each interview. Interviews included an ASL interpreter when necessary. Interpreters signed confidentiality agreements (see Appendix C). The interviews ranged in length from 20 to 57 minutes. Each participant was asked the same questions using the interview protocol (See Appendix A). The average interview was 41 minutes long and provided about 16 pages of transcript. Table 3 shows the data collected from each interview participant in pages of double-spaced, 12-point, Times New Roman font.

Table 3

Interview Duration and Transcript Pages Collected

Participant	Interview Duration	Pages of Transcripts
Participant 1	32 minutes	10
Participant 2	47 minutes	19
Participant 3	38 minutes	11
Participant 4	48 minutes	19
Participant 5	20 minutes	9
Participant 6	54 minutes	22
Participant 7	35 minutes	21
Participant 8	44 minutes	16
Participant 9	27 minutes	9
Participant 10	43 minutes	15
Participant 11	36 minutes	16
Participant 12	57 minutes	23
Participant 13	49 minutes	14
MEAN	40.8 minutes	15.7
TOTAL	530 minutes	204

All 13 interview transcripts were imported into Microsoft Word and the data cleaned to accurately identify speakers, fix misspellings, and repair grammatical mistakes. The transcripts were sent to participants three days after the interviews for member checking. All thirteen participants reviewed and acknowledged that they were correct as transcribed.

Focus Group Data

Upon receiving Institutional Review Board approval from National University (see Appendix F) and site authorization (see Appendix E), two semistructured focus groups were used to collect data. Focus groups were set up, and all participants provided verbal informed consent (see Appendix B). The two semistructured focus groups took place via Zoom, and audio recordings and transcripts were generated by Zoom for each group. Focus groups included two ASL interpreters per group. Interpreters signed confidentiality agreements (see Appendix C). The first focus group was 53 minutes in length. The second focus group was 57 minutes in length. Each group was asked the same questions using the focus group protocol (See Appendix D). Table 4 shows the data collected from each focus group in pages of double-spaced, 12-point, Times New Roman font. Both focus group transcripts were imported into Microsoft Word and the data cleaned to accurately identify speakers, fix misspellings, and repair grammatical mistakes. The transcripts were sent to participants three days after the focus groups for member checking. Both participants from focus group 1 reviewed and acknowledged that the transcript was correct. Two participants from focus group 2 reviewed and acknowledged that the transcript was correct. One participant from focus group 2 made minor corrections. All participants received a revised copy of the transcript.

Table 4

Focus Group Duration and Transcript Pages Collected

Participant	Group	Interview Duration	Pages of Transcripts
Participant 14	Group 2	57 minutes	19
Participant 15	Group 2	57 minutes	19
Participant 16	Group 1	53 minutes	18
Participant 17	Group 1	53 minutes	18
Participant 18	Group 2	57 minutes	19

Inductive Thematic Analysis of Interviews

Interview data were analyzed using inductive thematic analysis and supported through NVivo 15 using Braun and Clarke's (2021) six phases. All data collected from the interview transcripts were uploaded to NVivo 15 and categorized. Personal reflexivity throughout the analysis assisted in recognizing assumptions and biases and enabled personal engagement in the inductive thematic analysis process as specified by Ellis and Hart (2023). Interview data were reviewed continuously to identify common perspectives and themes.

Phase 1: Familiarization with the Data

For the first step, all interview data were uploaded and categorized in NVivo 15, including all 13 interview videos, audio recordings, and transcripts. The data were categorized, relationships were noted, and individual cases were created for easy access when necessary to locate a specific element in the data. Interview participants were linked to demographic survey responses using their self-generated pseudonyms, and participant codes were created.

Phase 2: Generating Initial Codes

Next, each transcript was read and re-read to identify interesting or repetitive comments that revealed educator perspectives in relation to the survey questions. These elements were highlighted and coded in NVivo 15 to categorize the data into common codes. At times, a new

code was identified within one transcript that would lead to the review of previous transcripts for similar content, establishing the continuous review that led to a robust analysis of the data.

NVivo 15 was used to identify coding of the 13 interviews and compared with codes generated by visual review of the data. NVivo's auto-coding feature allows for the generation of a distinctive word cloud. This visual tool displays the most frequent words from the text data, with word size and color indicating the frequency within the text (see Figure 2). No apparent discrepancies were noted. This process helped mediate researcher bias and ensured a thorough analysis of the data. Initially, 749 codes were generated from the interview data (see Appendix J).

Figure 2

NVivo 15 Word Cloud: Interviews

Secondary codes were generated by sorting the initial codes into common words and phrases. NVivo 15 was used to review complete sentences and phrases that were associated with generated codes. Many codes were combined due to being a direct stem of the word, a synonym, or a specialization. For example, *informal assessment, ASL assessments, same assessments, specific assessments, big assessments, audiogram, English Language assessments, assessing, test*, and others were combined into one code: *assessment*. This was generated visually in NVivo

15 (see Figure 3). Other codes prompted further exploration into the data, such as a review of the broader context within a transcript or a review of the video recording related to the transcript to explore facial and body expressions that revealed an underlying meaning, as demonstrated in Figure 4. This process resulted in 120 secondary codes (see Appendix L).

Figure 3

Secondary Code: Assessment

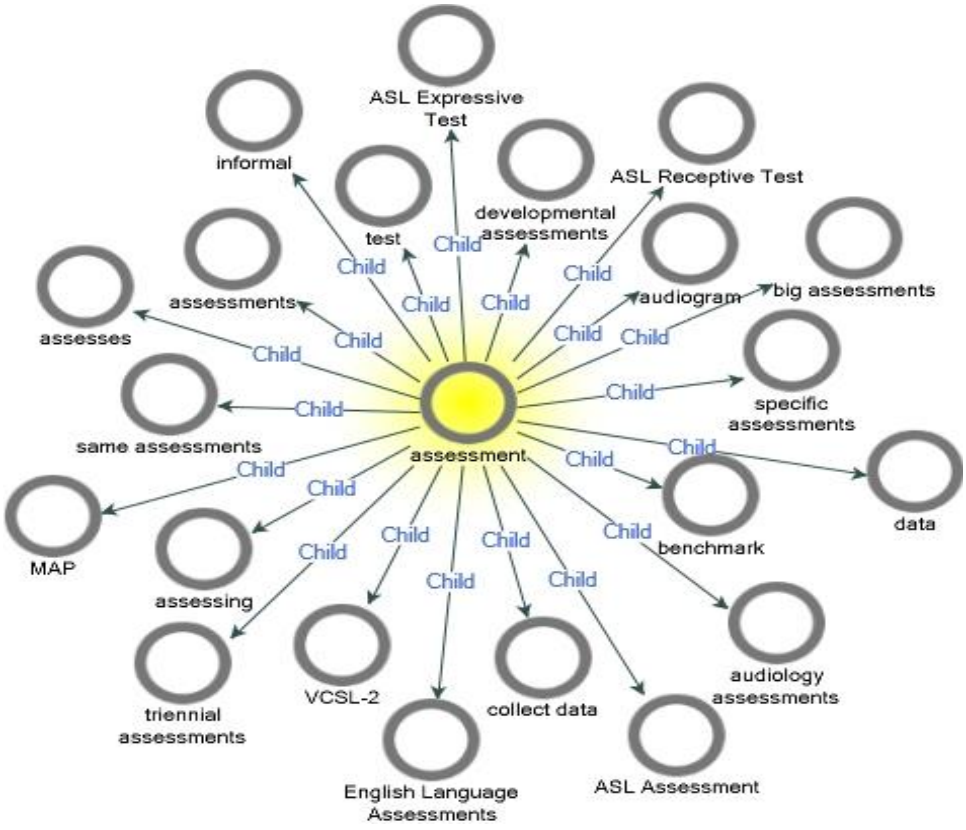
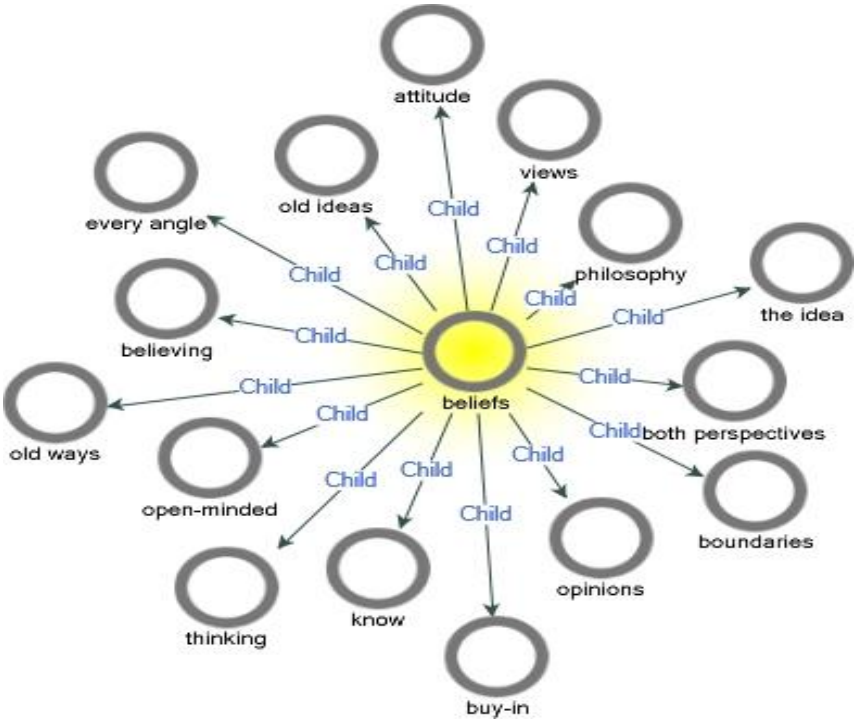


Figure 4

Secondary Code: Beliefs



Phase 3: Searching for Themes

After generating secondary codes, the codes were analyzed further. Attention was given to recurring patterns and similarities identified by codes displaying the highest number of references across the highest number of interview files. These codes were analyzed and reviewed within each text to identify potential themes (see Table 5). While frequency counts are not part of inductive analysis, it is worth noting that several secondary codes appeared many times in responses, so their frequency is added in Table 5 merely for emphasis. Twenty-four initial themes were identified from these interview codes (see Appendix N).

Table 5

Recurring Patterns and Similarities Identified by Secondary Interview Codes

Secondary Code	References	Interview Sample Responses
ASL	809	"You can use your voice, but with the whole group, you always have the *teacher using ASL*." (P12)
		"And I feel like every person in every district is different. They have a different way of approaching and supporting the variety of student *abilities in ASL* and English." (P2)
		"The idea that *ASL was equal* to spoken language, wow. They just couldn't handle that." (P12)
		"They picked it up so fast. They were just so *hungry for ASL*. Most of the time, they prefer signing. It's really interesting." (P5)
challenges	171	"Another teacher mentioned that the same thing is *a challenge* with the deaf class and the hearing staff." (P6)
		"And you know, the administrator, *they finally get it*, and then they replace them" (P12)
		"I don't want deaf children to be *stuck and isolated*." (P8)
family	27	"But a lot of that resistance came from the students themselves. I don't know if there was *pressure from the family* or if it was internal." (P12)
		"They will be successful if I can *support the families*." (P10)
		"I see *many families* that are hearing" (P1)
support	212	"…hearing aids to *support spoken language*, and the speech" (P12)
		".. these programs and *support training* for staff." (P3)
needs		"The classroom itself is *not financially funded*." (P5)
		"We *need more visual resources*." (P11)
resources	68	"There's *not enough resources*." (P1)
English	282	"They should be teaching *ASL and English*." (P6)
		"They're learning signs; it should be both." (P9)
		"And I feel like every person in every district is different. They have a different way of approaching and supporting the variety of student *abilities in ASL and English*." (P2)
instruction	215	"They're *learning how* to communicate with the hearing." (P2)
		"A student who uses verbal language *is learning how* to communicate in sign." (P7)
advocate	128	"Make sure they're independent and *advocate for themselves* always." (P10)
		"It's my *department recommendation* that the teacher should always when you have a whole group instruction that the teacher should always be the ASL model." (P12)
		"You have to advocate for them. I want them to *be self-advocates*." (P8)

Phase 4: Reviewing Themes

The 24 initial themes were reviewed to confirm their alignment with the data set (Braun & Clarke, 2006). The original data were explored further to identify and code any extra data within themes that may have been overlooked by running text queries in NVivo 15 using similar and synonym keyword searches. Two initial themes were deleted since they did not directly answer the research questions. However, these are important desires to be noted, including the *desire for a thematic deaf-centered curriculum*, and *there is never enough time.* By comprehending the collective interview data, six consolidated secondary themes emerged in response to the research questions.

1. The lack of ASL and deaf-focused assessments, curriculum, and resources contributes to educators' challenges in finding time to create materials to support bilingual instruction.
2. Classroom diversity encompasses a broad spectrum of student characteristics, including their ages, grade levels, language proficiencies, language preferences, academic skill levels, and communication abilities.
3. Because ASL's visual nature makes it the most accessible language for deaf students regardless of their individual language preferences, it should be used for whole-group instruction.
4. Educators' burden can be lightened by providing ample support to administrators and parents who may not grasp the specific language and educational needs of deaf students.
5. Educators use small group or individual instruction to address student diversity, focus on language and vocabulary development, provide ample visual supports, and regularly embed self-advocacy skills.

6. Through collaboration, educators create safe, Deaf-affirming classroom spaces for deaf students by leveraging push-in services, honoring each student's individuality, promoting student involvement in discussions surrounding inclusion and equity, and including Deaf adult role models with lived experiences.

Phase 5: Defining and Naming Themes

The six identified secondary themes were reviewed against the framework and research questions to ensure that they would help to answer the questions guiding the study. In this phase, the six secondary themes were shortened to phrases that captured the essence of the identified theme, defined operationally, and supported by brief quotes.

Secondary Theme 1: There is a Lack of ASL Resources. This theme refers to the challenges educators face in delivering bimodal bilingual instruction to students. Participants 10 and 12 spoke to this theme by noting the challenges in creating resources for students, spending a lot of time searching for resources to support ASL, such as signs, and modifying the hearing curriculum to meet students' needs in ASL. For example, Participant 10 stated, "There's just not enough resources," and "It is just easier to make the signs myself." Participant 12 stated, "It's not really accessible to deaf students. It does not help much. It's very spoken-language reliant."

Secondary Theme 2: Deaf Students are a Widely Diverse Population. This theme refers to the diversity educator's face in the classroom. Deaf education classrooms typically span several grade levels and encompass a wide range of language needs in both ASL and English. Additionally, deaf students with additional disabilities tend to share the same classroom environment. Participant 8 spoke to this theme by noting the variety of reading levels within her high school classroom, grades 9-12. "He had no reading level at all. And then another student was reading chapter books. So, they were so diverse." Participant 13 discussed her 2nd- to 6th-

grade classroom. She found the range of hearing and language needs challenging. “We have a range from hard of hearing to mild to like severe. The whole range. Families, mostly Spanish speaking at home. We have like one or two English.” Finally, participant 8 talked about the need to change communication and language based on student preferences by saying, “Some are more comfortable speaking, but they use sign language for receptive. Some can’t understand their voice, but prefer to voice,” noting the importance of meeting students where they are and building from there.

Secondary Theme 3: ASL is the Language of Instruction. This theme refers to deaf students’ visual needs for learning, regardless of their primary or preferred expressive language. Participant 5 spoke to this theme by noting that one student, recently implanted bilaterally, was not really expressing himself. But the more exposure he received in ASL, since the teacher was deaf, he began expressing himself. “He doesn't really express himself a lot, but he's finally starting to learn to express himself,” and noted, “they pick it up so fast.”

Secondary Theme 4: Administrators and Parents Unfamiliar with Deafness Must be Educated. This theme refers to the challenges many educators face in obtaining funding for supplemental or deaf specific resources, as well as the implication that the student can not only learn ASL at school, but parents must also use the language and continue education at home, providing access to Deaf events and ASL social opportunities, and learning ASL as a family. Several participants used the terms *struggle*, *frustrating*, and *challenge* when discussing accessing supplemental materials or resources for ASL due to the lack of administrative understanding of the unique needs of deaf students. For example, participant 12 noted, “We have had to fight hard to buy the BGC, and actually the school itself paid for the BGC, not the district, the school, they didn't know what to do.” With regard to families, participant 3 spoke to this

theme by noting that even when families choose ASL and English bilingual instruction and support the creation of ASL language goals on the IEP, they do not, themselves, learn the language, providing a lack of communication access outside of school, thus limiting the students' overall development. Participant 3 stated, "We don't know how much access students have at home sometimes," and "Our profoundly deaf students are coming in with no language."

Secondary Theme 5: Individual and Small Group Instruction is the Key. This theme refers to various instructional strategies used by educators of the deaf to address diverse student needs in the classroom. Participant 2 spoke to this theme by noting that, given the breadth of diversity, individualized IEPs really become individual instruction. "There is a lot of diversity. When you teach, it is individualized instruction. It really is an 'individual education plan'."

Secondary Theme 6: Educators Create Deaf-Affirming Classroom Spaces. This theme refers to creating a safe, inclusive learning environment for all students. Participant 12 spoke to this theme by noting the importance of communication access for all students, those who prefer spoken language, and those who prefer ASL. "I want to be very deaf-friendly. I don't want to exclude students who have access, and I don't want students to be talking, and a student who is severely deaf doesn't have access." Participant 9 discussed how students were hungry for ASL, stating, "I think it's really important to have Deaf language role models." Noted by participant 6, students get the benefit of both English and ASL equally when the speech language pathologist leverages push-in services in collaboration with the classroom teacher. "During small groups, the SLP works with the students on speaking tasks, and I work on the same tasks in ASL."

Phase 6: Producing the Report

The six secondary themes identified in Phase 4 and defined in Phase 5 were used to help answer the research questions. Before that could occur, it was necessary to reconcile these themes with the secondary themes identified in the analysis of the focus groups and generate final themes. This reconciliation will be described following the description of the analysis of the focus group data below.

Inductive Thematic Analysis of Focus Groups

Focus group data were analyzed using inductive thematic analysis and supported through NVivo 15 using Braun and Clarke's (2006) six phases. All data collected from the focus group transcripts were uploaded to NVivo 15 and categorized. Personal reflexivity throughout the analysis assisted in recognizing assumptions and biases and enabled personal engagement in the thematic analysis process as specified by Ellis and Hart (2023). Focus group data were reviewed continuously to identify common perspectives and themes.

Phase 1: Familiarization with the Data

For the first step, all focus group data were uploaded and categorized in NVivo 15, including both focus group 1 and focus group 2 videos, audio recordings, and transcripts. The data were categorized, relationships were noted, and individual cases were created for easy access when necessary to locate a specific element in the data. Focus group participants were linked to demographic survey responses using their self-generated pseudo-names and given a participant code.

Phase 2: Generating Initial Codes

Next, each transcript was read and re-read to identify interesting or repetitive comments that revealed educator perspectives in relation to the survey questions (Braun & Clarke, 2006).

These elements were highlighted and coded in NVivo 15 to categorize the data into common codes. At times, a new code was identified within one transcript that would lead to the review of the previous transcript for similar content, establishing the continuous review that led to a robust analysis of the data.

NVivo 15 was used to generate coding of the two focus groups and compared with codes generated by visual review of the data. A word cloud was generated for the auto-coding for comparison (see Figure 5). After reviewing the coded data within context, the auto-codes *tensions* and *degree* were added to the initial focus group coding list. This process helped mediate researcher bias and ensured a thorough analysis of the data. The initial analysis of the focus group data revealed 740 codes (see Appendix K).

Figure 5

NVivo 15 Word Cloud: Focus Groups

Secondary codes were generated by sorting the initial codes into common words and phrases. NVivo 15 was used to review complete sentences and phrases that were associated with

generated codes. Many codes were combined due to being a direct stem of the word, a synonym, or a specialization, such as *developing*, which was an overarching code for *develop*, *development*, *levels of development*, *develop the context*, *potential*, *can see potential*, *building relationships*, and *building self-advocacy skills*. This was generated visually in NVivo 15 (see Figure 6). Other codes prompted further exploration into the data, such as a review of the broader context within a transcript or a review of the video recording related to the transcript to explore facial and body expressions that revealed an underlying meaning. This led to further coding, such as within the code *developing*, under the combined code *levels of development*, the codes *grade level*, *failed*, *strong*, *their level*, *to some degree*, *more ready*, *functional level*, *becoming*, *once they have*, *already developed*, and *beginning stages* also indicated similar meanings (see Figure 7). This process resulted in the identification of 120 secondary codes (see Appendix L).

Figure 6

Secondary Coding: Developing

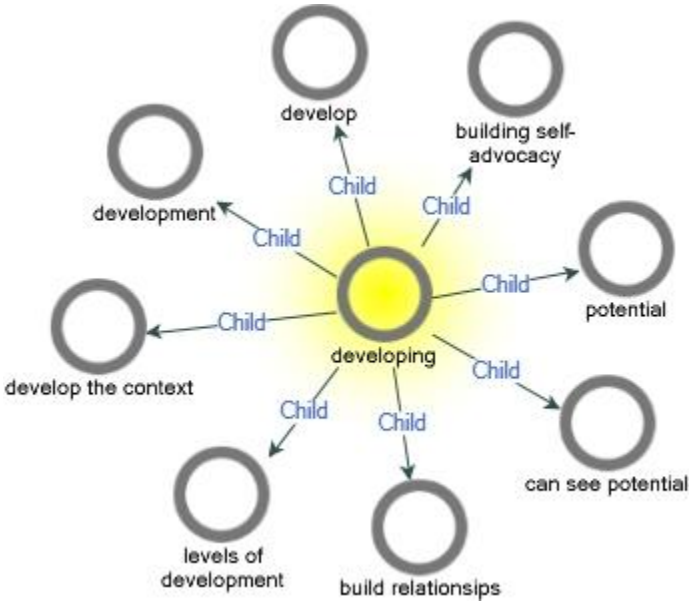
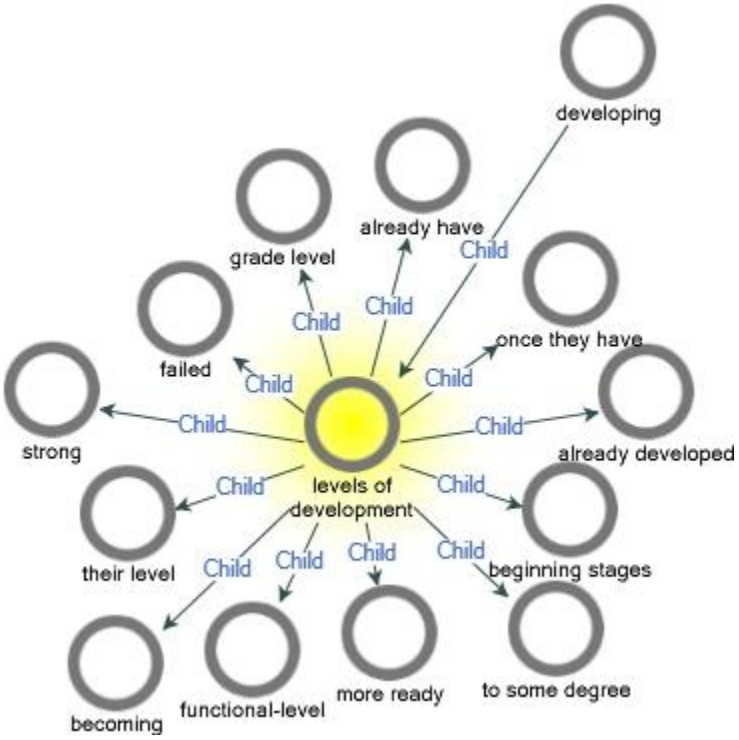


Figure 7

Secondary Coding-Levels of Development



Phase 3: Searching for Themes

After generating secondary codes, the codes were analyzed further. Attention was given to recurring patterns and similarities identified by codes displaying the highest number of references. Since NVivo does not automatically recognize the speaker within the text, references were explored to identify participant contributions. These codes were analyzed and reviewed within each text to identify potential themes (see Table 6). Twenty initial themes were identified by exploring the focus group data and secondary codes (see Appendix O).

Table 6

Recurring Patterns and Similarities Identified by Secondary Focus Group Codes

Sec. Code	References	Focus Group Sample Responses
communication	20	"We have another classroom where most students are using *multi-modal communication* such as ASL, gestures, hand-over-hand, and *communication boards*." (P18)
		"In this class, the *primary communication* is ASL, but the goal is that all students will have access to ASL and English." (P17)
		"I think people are always going to try to talk in their preferred *language of communication*." (P16)
challenging	27	"There are resources, and sometimes you know there's *the burden of* creating resources." (P16)
		"I think *my biggest challenge* has been getting staff buy-in." (P14)
		"The challenge is...is me myself as a deaf instructor, you know, I have to promote ASL in all settings." (P17)
		"*I'm struggling* to find the appropriate trainer for ASL for the ASL assessment, that's been a challenge for me." (P17)
deaf	34	"We try to maintain having *at least one deaf adult* and one hearing adult in the room at all times." (P14)
		"And I feel that we need to make their world larger, by connecting them with *other deaf students* so that they can have a communication cohort." (P16)
		"And there are very *few deaf adults* around them. So, they don't have enough people who are able to model language to them." (P17)
don't have	28	"You know, if the teacher is doing one thing, but the parents aren't signing at all. I mean, yes, school is beneficial, but then they *have no language access* when they go home." (P16)
environment	64	"We are a *total communication program*, but we are working toward becoming more ASL." (P14)
		"A lot of our mainstreamed students come into *the SDC classroom* for support for ASL." (P18)
		"We are on *a public school campus*, so often our students are *mainstreamed*." (P16)
isolating	11	"I think modern deaf education for the most part is *very isolating* to the students because there's just one student here and there spread out." (P16)
		"Especially with students who are hard of hearing or prefer speaking with staff who are hearing, with people who don't have knowledge of *exclusion*." (P17)
		"So, nobody's *left out* when it comes to the spoken English or ASL, if that makes sense." (P17)

Phase 4: Reviewing Themes

Initial focus group themes were reassessed to confirm their alignment with the dataset (Braun & Clarke, 2006). The original data were explored further to identify and code any extra data within themes that may have been overlooked by running text queries in NVivo 15 using similar and synonym keyword searches. Themes were then combined to summarize the fundamental body of educators' perspectives in response to each research question. Seven secondary themes were identified.

1. Educators need active, collaborative coaching experiences on assessing ASL, and use team data to incorporate ASL and spoken English into whole-group instruction to accommodate language diverse students.
2. Deaf educators use common instructional strategies to create visually language-rich lessons for deaf students with embedded self-advocacy skills while teaching math, science, and social sciences, which rely heavily on small-group or individual instruction opportunities.
3. ASL, given its visual nature, is the only fully accessible language for deaf children from birth and should be used as the primary language of instruction to build a solid language foundation.
4. The deaf student's language needs should be prioritized over mainstreaming for social integration with hearing students.
5. Deaf students need deaf adults to model ASL and self-advocacy and provide a lived deaf experience, along with a critical mass of deaf peers provided through regionalization rather than an isolated mainstream environment.

6. Educators need to provide accessible resources to families that enable active participation in the deaf child's education, creating a bilingual or multilingual, deaf-friendly space for continued learning in the home.
7. Including all educational staff in systematic training within actual classroom settings ensures every adult understands their individual contributions and instructional roles.

Phase 5: Defining and Naming Themes

The seven identified secondary focus group themes were reviewed against the framework and research questions to ensure that they would help to answer the questions guiding the study. In this phase, the seven secondary themes, like those identified in the interview analysis, were shortened to phrases that captured the essence of the identified theme, defined operationally, and supported by brief quotes.

Secondary Theme 1: Educators Need Active, Collaborative Coaching. This theme refers to the need for training mentioned by educators. Focus group participant 17 spoke to this theme by noting the inability to use the Visual Communication and Sign Language (VCSL) assessment since proof of certification was required to utilize materials, and training was difficult to find. "I'm struggling to find the appropriate trainer for the VCSL assessment, that's been a challenge for me."

Secondary Theme 2: Educators of the Deaf Use Common Instructional Strategies. This theme refers to common instructional strategies that educators use to address diverse language needs and build self-advocacy skills. Participant 16 spoke to this theme by noting that students frequently were unable to express when they did not understand something; therefore, it was critical to embed self-advocacy skills into every opportunity. "We're trying to develop a foundation for them where they can ask for their needs to be met, ask for clarification."

Participant 16 also shared that building language was the basis for all instruction. “The point is that it requires like double or triple the exposure to language to help them to retain the content.” Participant 17 discussed the need to harness small group instruction, stating, “I do love small groups because that way I can home in on one language. I can just put people where they're at and work in the student's preferred language. That’s easier to control than the whole class.”

Secondary Theme 3: ASL is the Language of Instruction. This theme refers to the notion that ASL is the only fully accessible language for deaf students from birth; therefore, it should be used as a foundational language of instruction while building on spoken language development. Participant 17 spoke to this theme by noting that ASL is a visual language and creates a solid foundation, and then English is developed through ASL. Participant 17 added:

> ASL is their primary language. It’s automatic because it's visual from birth. They’re learning through sight since birth. And so ASL is something that they understand. Once they have that good language foundation through ASL, they can learn spoken language.

Secondary Theme 4: Prioritize Language over Socialization with Hearing Students. This theme refers to the special education practice of mainstreaming students with typical peers as much as possible. However, educators of the deaf agree that building a solid foundation of language is more important than mainstreaming with hearing students. Participant 15 spoke to this theme by noting that mainstreamed students still need support in developing ASL to be able to attend to the interpreter and comprehend instruction. “A lot of our mainstreamed students come into the SDC classroom for support for ASL.”

Secondary Theme 5: Regionalization Rather than Isolation. This theme refers, again, to special education practice of mainstreaming students with typical peers as much as possible, but addresses students placed in isolating home school environments where they, sometimes, are

the only deaf student on campus. Participant 16 articulated this theme by noting that students need a community, communication, and support that only a regionalized program can provide. “I think modern deaf education, for the most part, is very isolating to the students because there's just one student here and there, spread out. I think that they need to be in a more collective environment.” He went on to add, “We need to make their world larger, by connecting them with other deaf students so that they can have a communication cohort,” calling it a “collective deaf community.”

Secondary Theme 6: Families Need Resources to Create Deaf-Friendly Spaces at Home. This theme refers to the need for families to engage in their child’s education both linguistically and culturally. Participant 16 spoke to this theme by noting that many families do not learn to communicate with their child in sign language, possibly due to a lack of accessible resources. “If the teacher is doing one thing, but the parents aren't signing at all. I mean, yes, school is beneficial, but then they have no language access when they go home,” and “It's a two-pronged approach. You have to teach the student, but you also have to provide the resources to the parents.”

Secondary Theme 7: Systematic Training is Essential. This theme refers to the need for all staff to participate in training to delineate and understand roles and responsibilities. Participant 14 spoke to this theme by noting how training changed the way the entire organization looked at deaf education. “I have learned a lot over the past several years. I got involved in going to conferences with other deaf administrators. We made a huge change in a short amount of time.” Participant 17 discussed the need for learning how to instruct a diverse student population in both ASL and English. “I do have a student group where maybe their skills

are different, and I have to figure out, okay, this person is ASL. This person uses spoken language, and they're both at different ends of the spectrum."

Phase 6: Producing the Report

The seven secondary themes identified in Phase 4 and defined in Phase 5 of the focus group analysis were used to help answer the research questions. Before that could occur, it was necessary to reconcile these themes with the secondary themes identified in the analysis of the interviews and generate final themes. This reconciliation process is described below.

Reconciliation of Interview and Focus Group Themes

The six identified interview secondary themes were reconciled with the seven themes identified in the focus group data. This allowed for pinpointing the essence of each theme across both data sets. Comprehending the communal data and establishing which aspect of the data each theme encapsulated was necessary (Braun & Clarke, 2006).

Each categorized theme was reevaluated, and recurring codes were highlighted. Finally, five consolidated final themes were generated that most adequately reflected educators' perspectives on implementing bimodal bilingual pedagogy in district or regional programs and best answered the research questions. Each theme was given a definition, allowing it to be understood in context.

Theme 1: Leverage Small Group and Individual Instruction. To address the broad spectrum of student diversity in classrooms, educators leverage small group or individual instruction to prioritize language and vocabulary development while providing ample visual supports and regularly embedding self-advocacy skills as needed.

Theme 2: ASL First. ASL is the most accessible language for deaf students from birth. This makes it the ideal primary language for whole-group instruction. In the classroom this builds a solid linguistic foundation, regardless of individual language preferences.

Theme 3: Prioritize Social Integration with Deaf Peers and Adults. Educators must collaborate to prioritize Deaf students' language needs, leveraging push-in services, honoring individuality, promoting student involvement in discussions of inclusion and equity, and providing access to Deaf adult role models, rather than prioritizing social integration in isolated mainstream environments.

Theme 4: Coaching for Success. Educators need active, collaborative coaching to effectively incorporate both ASL and spoken English into whole-group instruction to accommodate language-diverse students.

Theme 5: Active Participation from Families. Schools need to provide accessible resources to families that enable active participation in the deaf child's education, creating a bilingual or multilingual, deaf-friendly space for continued learning in the home.

Trustworthiness

Procedures were enacted during this study to establish the four dimensions of trustworthiness: credibility, transferability, dependability, and confirmability (Bloomberg & Volpe, 2019; Guba, 1981). To establish credibility, researchers strive to show that they accurately represent the phenomenon under investigation (Shenton, 2004). To enhance the credibility of this research, a thematic analysis approach was used, producing findings encompassing the perspectives of a majority or all participants, thus mitigating potential biases or inaccuracies in individual responses. Additionally, credibility was reinforced through a member-checking process (Candela, 2019). Following each interview and focus group,

transcripts were sent to participants to ensure. This summary was then given to participants for review, allowing them to confirm its accuracy or suggest modifications. All 15 participants confirmed the accuracy of the interpretive summaries and proposed adjustments where necessary.

Transferability refers to the degree to which the conclusions drawn from a study remain applicable to different populations and contexts (Shenton, 2004). Hence, a comprehensive depiction of the study sample has been provided to aid readers in evaluating the transferability of the findings from this study to various settings and populations. Furthermore, direct quotations from the data are presented as substantiation for all findings, offering rich descriptions that capture participants' voices and viewpoints.

Dependability refers to the degree to which the results of a study can be reproduced under similar research conditions at different times (Bloomberg & Volpe, 2019). To enhance dependability, it is crucial to provide sufficient information to enable readers to replicate the study (Shanton, 2004). This study reinforced dependability by offering thorough explanations and justifications for the research methodology, design, and procedures in Section 2. Furthermore, this section provides a meticulous account of the data analysis process to allow readers to evaluate the robustness of the analysis.

Confirmability measures the degree to which a study's findings accurately represent the perspectives and opinions of the participants rather than those of the researcher (Frey, 2018). To eliminate potential bias introduced by the researcher, direct quotations from the data have been included as evidence for all findings and interpretations. Additionally, confirmability was reinforced through member checking (Caine et al., 2019), allowing participants to confirm that

the interpretations of their responses accurately captured their viewpoints and intended meanings.

Results

The five final themes identified in the analysis process were used to answer the research questions (see Table 7). The results are organized by research question, with each question being listed, followed by the themes that addressed that question. Afterward, a discussion of how the theme(s) answered the question is presented.

Table 7

Themes and Research Questions

Research Question	Themes
RQ1: How do educators in a bimodal bilingual regional program describe how they address language diversity within the classroom?	1. Leverage Small Group and Individual Instruction 2. ASL First 3. Prioritize Social Integration with Deaf Peers and Adults
RQ2: What are educators' perceptions of the benefits and challenges of implementing a bimodal bilingual pedagogy in a regional deaf education program?	3. Prioritize Social Integration with Deaf Peers and Adults 4. Coaching for Success 5. Active Participation from Families
RQ3: How do educators in a bimodal bilingual regional deaf education program describe how they assess, delineate, and address students' diverse language and communication needs?	1. Leverage Small Group and Individual Instruction 3. Prioritize Social Integration with Deaf Peers and Adults 4. Coaching for Success

Research Question 1

Research Question 1 was, "How do educators in a bimodal bilingual regional program describe how they address language diversity within the classroom?" This research question was

answered by the following themes: Theme 1: Leverage Small Group and Individual Instruction, Theme 2: ASL First, and Theme 3: Prioritize Social Integration with Deaf Peers and Adults.

Theme 1: Leverage Small Group and Individual Instruction. This theme was the most dominant theme identified in the interview and focus group responses. Educators discussed the wide range of language diversity within the classroom. While some students entering the program had little to no language foundation, others entered with some degree of skills in either ASL or spoken language. Almost all educators discussed the need to create opportunities for small and individual instruction to meet the unique needs of each student. They discussed the need to prioritize language and vocabulary development, indicating that small-group or individual instruction was essential to ensure success. Additionally, educators spoke of the diversity in relation to cognition, cultural awareness, and self-advocacy skills.

In response to how educators address each student's language and communication preferences while building bilingualism, participant 17 stated,

> I do love small groups, that way I can home in on one language. I can just put people where they're at and work in the student's preferred language. That's easier to control than the whole class. The whole class is a challenge.

He continued,

> When we have small groups, I accommodate their preferred language. It could be sign language, or it could be signed English, or a combination of those, or English. I try to meet them at their level, wherever their needs are, and match that and whatever we're focusing on and learning.

Participant 13 described how students with minimal language experiences were supported within a classroom of students with diverse needs.

> We have a specific time to teach one-on-one, and either an assistant or I will sit with them and really explain the language, explain what the words are, and give them the signs and how to put them together with ASL and English. One or two students have serious language deprivation—huge problems with language deprivation. They needed special time to really have one-on-one instruction.

Participant 8 shared a similar experience with struggling students.

> I pulled three students who weren't getting it and explicitly taught them at a slower pace, gave them extra practice, but at a lower level. Then they were good to go. So, there is that tiered support. That we're able to work out in our classroom.

Overall, educators suggested that in a diverse classroom, there needs to be opportunities and staff to provide small group or individual instruction to support students' unique needs. The areas of unique student need were indicated by educators as language (ASL, spoken English, print English), self-advocacy skills, foundational academics, and vocabulary (functional and academic).

Theme 2: ASL First. This theme was another strongly held view of educators of the deaf who participated in this study. Educators expressed that ASL was fully accessible and frequently provided a visual model of comprehension, even for students who appeared to have a strong foundation in English as a spoken language. For example, participant 17 communicated,

> ASL is their primary language. It is automatic because it is visual from birth. They are learning through sight since birth. ASL is something that they understand. They can learn to write once they have a good language foundation through ASL. They can learn to, "I know how to fingerspell an A. Now here is how I write an A." That leads to the spoken language. So, when you are signing a letter A and then you learn how to write it, then you

> can learn what the sound is like and whether or not it is a short A or long A. And from there, you can then start to learn more and more about sounds. Nobody needs to stress about it, but they could learn a spoken language from ASL. So, you start with the visual and then move into the oral or the writing, and then the spoken piece.

Educators who worked with students in the upper grades, such as middle and high school, communicated that deaf students often entered the program late in their academic careers due to a lack of success with the oral language. Participant 7 spoke to this topic, saying that often students from the oral program would move into their signing regional program. She mentioned that these were the students who "failed" the oral program, which ended at 5th grade, assuming students would then be ready for full-time mainstreaming. She recalled,

> I have another group that came from the oral program, and that's challenging just putting them in there, moving them into a predominantly signing environment at that age. But they do pick up signing really quickly. So, after like one year, they are great. They totally understood the signing. Sign language. It just shows how much they needed it.

Participant 16 commented that he works with "oral" high school who are not successful, thus transferred to the signing program. These students are not familiar with ASL; however, he often uses sign language to reteach concepts since it is so visual, and the students seem to pick it up very quickly. The visual representation helps them understand and comprehend the topic, not just hear it. "In terms of the ASL, it does help them to expand their concepts, understanding, and comprehension."

Participants 4, 13, and 17 contended that ASL should be the first language of instruction and used to append an additional language, English, as opposed to teaching both simultaneously.

Participant 17 shared this from experience working in a bimodal bilingual preschool for the past 3 years:

> I noticed that when students are learning a language, it is best to pick one language to focus on, get that down, and establish a foundation before adding a second language. You can include that with your teaching to expose them, but as a primary focus, having more than one is confusing. I've noticed that students in the past have experienced this. They would get confused. “I just learned the signs for this, and now we're speaking. Which one are we doing now?” They get a little confused and have an internal conversation struggle. From my observation, teaching ASL first, I've noticed that once they have that foundation, they're more ready to include a second language. So, I teach in sign, but I also teach writing at the same time. That, of course, happens in parallel. They're seeing its sign, they're seeing it written. But hearing and speaking are entirely different skills to learn. So, I think that's part of the challenge for these children is to learn both languages simultaneously instead of consecutively.

Theme 3: Prioritize Social Integration with Deaf Peers and Adults. Interview and focus group data indicated that educators of the deaf agree that while not always taking place, deaf students need regionalized programs with other deaf peers and deaf adults, versus the typical push by districts and administrators to prioritize mainstreaming opportunities for socialization with hearing peers. Educators stressed the importance of gaining a solid foundation of language, building skills to use an interpreter, and developing self-advocacy skills that are critical to mainstreaming success. Some educators within regional programs expressed frustration with the push toward mainstreaming for *socialization*, which significantly impacted

the amount of time they had to address student needs, thus impacting overall student achievement outcomes.

All nine participants who identified as deaf or hard of hearing, and one participant who identified as a Child of Deaf Adults (CODA), held strong beliefs regarding mainstreaming in isolated hearing environments. They commonly used words such as *stuck, excluded, isolated,* and *alone*. Participant 10 shared:

> I don't want deaf children to be stuck and isolated when they identify with deafness or just don't fit in with the hearing group. I want to see them as a group of students being able to transition through the whole world, including deaf and hearing people.

Participant 16 deliberated about students at their homeschool and not part of the regional program.

> I want to reduce that isolation. So, they can go back and forth between both worlds. The hearing and the deaf community. Then their world just becomes bigger. Maybe they need a break from talking and listening. This would allow them to have sign language and the deaf community.

Participants 6, 9, 11, 16, and 17 shared personal experiences of isolation or never really "fitting in" in the mainstream classroom at their home schools. They shared that, at times, they still feel the isolation in deaf education among their hearing colleagues. Participant 17 discussed that the hearing staff in the classroom, unintentionally, excludes deaf students and adults by only speaking with students. Participant 11 shared a similar encounter when a hearing instructional assistant mistakenly labeled a student as "hearing" since the student tended to respond in speech, even when the assistant used voice and signs simultaneously. After several weeks of working

with the deaf teacher, the student began rapidly picking up signs, and his ASL language began exceeding his spoken language abilities.

Research Question 2

Research Question 2 was, "What are educators' perceptions of the benefits and challenges of implementing a bimodal bilingual pedagogy in a regional deaf education program?" This research question was answered by the following themes: Theme 1: Leverage Smal Group and Individual Instruction, Theme 3: Prioritize Social Integration with Deaf Peers and Adults, Theme 4: Coaching for Success, and Theme 5: Active Participation from Families.

Theme 1: Leverage Small Group and Individual Instruction. This theme, again, highlights the need for small group or individual instructional opportunities; however, educators also shared challenges faced in providing these opportunities in the face of prioritizing mainstreaming opportunities for students and a lack of staff support. Several educators attested to the benefits of small and individual groups to address specific language and developmental needs, as mentioned earlier. Sentiments such as "need" and "challenging" indicate that this might not always be possible. There was an overall sentiment of frustration that there never seemed to be enough time or staff, and a cry for help to administrators to understand the unique needs deaf students face.

Theme 3: Prioritize Social Integration with Deaf Peers and Adults. Again, Theme 3 arose as a common theme within the interview and focus group data. Deaf educators largely agreed that deaf students benefit from regional programs with deaf peers and adults, a preference often at odds with the mainstreaming efforts of many school districts, creating feelings of exasperation and discouragement towards administration and their lack of knowledge or understanding. Several participants noted the overall lack of understanding of this unique need as

the biggest challenge they faced. Participant 12 shared the frustration that by the time an administrator finally gets it, they leave, and she has to start all over again with a new administrator to advocate for student needs. She also expressed disbelief. “The idea that ASL was equal to spoken language, wow. They just couldn't handle that.”

When discussing his experience working with mainstreamed students, participant 16 deliberated,

> I think modern deaf education, for the most part, is very isolating to the students because there's just one student here and there, spread out. I think that they need to be in a more collective environment. I think that most students are just out there on their own, and they have no support. Maybe they're with an itinerant teacher. But they're just alone.

All of the deaf participants shared the sentiment that they wanted to provide ASL and English to deaf students. Participant 10 shared that she wanted deaf students to be able to experience both the hearing and the deaf worlds and be able to move between the two. Participant 16 believed we could make the deaf students' world “bigger” by giving them both mainstreaming opportunities as well as a deaf community that can be provided within a regionalized program. Participant 17 shared, “We want to provide a positive role model or a culture in the classroom with deaf and hearing and understanding both of those experiences, and also being flexible.” Participant 10 stressed, “I don’t want deaf children to be stuck and isolated.”

Theme 4: Coaching for Success. When discussing the challenges of implementing a bimodal bilingual pedagogy within the deaf education classroom, several participants noted the challenges with staff not having adequate ASL skills to create equity, the negative impact that hearing staff without adequate knowledge of deaf culture have on the dynamics of the bimodal bilingual classroom.

Participant 14 shared, “To be honest, we don’t have full buy-in from all the members of our staff, yet. It has been a challenge. Some of our staff are not fluent in ASL.”

> It is my teachers who are more resistant. They feel that to meet students' needs, they need to sign and voice at the same time. I know this is not what the research is saying, and I get a lot of reminders about that. I get a lot of pushback from my staff.

Participant 17 expressed a need for hearing staff to be educated on the impact they have on inclusion without even noticing it.

> As a deaf instructor, I find it challenging to promote ASL in all settings, especially with students who are hard of hearing or prefer speaking with staff who are hearing, and don't have an understanding of exclusion. They are excluding others without realizing it. I am trying to model what it is like to be left out.

Within this theme, educators also shared the need for training in instructional methods. Many educators noted that they were “just learning” or “this is new.” Participant 1 spoke to this by sharing she is just figuring out what works and what does not.

> This year, it's just research and figuring it out. Our literacy program it's lacking. We are trying our best, and we've tried different strategies and are figuring out what's working, what's not working, and it's just not working.

Participant 2 recognized a deficiency in training and implementation as well.

> It is a challenge. We have to educate those students and know, ourselves, how they should be educated, but how do you do that? Where are the materials? What are the resources that we have available, right? And what are the best practices?

Participant 12 explained that the program adopted a new name, “ASL English Bimodal (AEB),” several years ago, but they are only noticing a shift in pedagogy now that they are implementing direct coaching and training within the classroom context.

> So, for many years, it was Total Communication. That is what it is. So, we wanted to change to AEB. The problem was that they changed the label but didn't provide any training. They didn't tell teachers what was different and what they must do differently. So, what's the label? What does it look like? So, now it's kind of flipped. We had to go back, and now we're providing that training.

Participant 12 also spoke to this theme by recognizing that learning was best accomplished when training was provided within the classroom. She made several comments, such as “seeing is believing.” When discussing the biggest challenges, she added, “The spoken language and its role in an AEB environment. That was the biggest challenge. Wow. If you don't have buy-in from the staff, you can't do anything.” Participant 10 expressed a similar need to educate staff, and the challenges faced.

> I struggled trying to get her [hearing aide] to respect that this is a deaf-friendly classroom, because they're having individual conversations with the students. They have to recognize don't just speak. You need to sign, because I don't understand you. So, I have to teach her that respect. That's a challenge. Another teacher mentioned that the same thing is a challenge with the deaf class with the hearing staff.

Finally, participant 8 mentioned that,

> We have to look at the students in front of us. It's not about our opinions. It's not about our beliefs. We have to address those kids who are in front of us and what their needs are. And all of them have different needs. And you can't have a full one way or another.

Theme 5: Active Participation from Families. This was another strong theme among participants in both focus groups and interviews. Educators advocated for the need for more parent education to enhance student success. They want parents to support communication and sign language in the home environment, not just in school. Parents need easy access to resources, knowledge of deafness, how to create a deaf friendly environment at home, and opportunities to socialize, and exposure to the deaf community.

Participant 11 shared a need to educate parents. So often she noticed parents wanted their child to speak English only, but that was not always what the child needed.

> If we had more connections to expose the children to deaf culture, and actually the parents too, I think it's their fear of the unknown. They don't understand. It's, you know, "English only", or "I want them to speak." Sadly, that may not be the reality for their child. So, if we had more opportunities to expose them, maybe send parents to workshops, or just educate them. If we had more deaf events, more events that cater to the parents, to show them that it's okay. I think it may change everything.

Participant 16 spoke to this theme and the need for parents to learn ASL to communicate with their child.

> You have to encourage the parents to support the child. Share student assessment data that shows that the student is going to benefit more from ASL. Encourage the parents as well by showing them what you've determined, what you've recognized or identified as needs from the data, that they would benefit from more ASL. And then the parents are going to need to learn to use ASL so that they can communicate with their child at home.

Participant 14 shared a need to educate parents early, indicating that parents may not realize the impact of the child's lack of language or hearing. Some may not even realize their child is deaf.

> Sometimes, our students show up at age 5, and they have had no education. I don't know if it was from COVID or something else, but parents don't even realize they can't just drop their deaf child off at kindergarten.

Overall, there was a general consensus that parents need support. They need to understand the needs of their child, including the need to create a deaf-friendly space in the home and exposure to ASL. Parents need access to resources for maintaining active participation in the child's education as well as continued ASL development to maintain communication with their child. Finally, they need resources for participation in the deaf community and opening the world to other deaf children and adults for their deaf child's social and emotional wellness.

Research Question 3

Research Question 3 was, "How do educators in a bimodal bilingual regional deaf education program describe how they assess, delineate, and address students' diverse language and communication needs?" This research question was answered by the following themes: Theme 1: Leverage Small Group and Individual Instruction, Theme 3: Prioritize Social Integration with Deaf Peers and Adults, and Theme 4: Coaching for Success.

Theme 1: Leverage Small Group and Individual Instruction. As described previously, leveraging small group and individual instruction to address students' diverse needs was a predominant theme in the data. Participant 12 discussed how additional adults in the classroom were leveraged to meet student diversity by offering small group and individual instruction. "They have small group instruction for stations. The teacher can be signing in one

group, and the assistant is using spoken language in another group, or it can be switched." Participant 6 shared, "If I have an aide to do the speech part, focusing on giving them time in groups to really dive into language, helps." Overall, in light of the broad spectrum of language diversity among students, ranging from those with no language foundation to others with some ASL or spoken language skills, educators emphasized the crucial need for small-group and individualized instruction to address each student's unique needs.

Theme 3: Prioritize Social Integration with Deaf Peers and Adults. Again, this theme is strong, especially among those participants who identified as deaf, hard of hearing, or CODAs. They believe that deaf students benefit most from being in a community with their deaf peers and adults, which is often not possible in a mainstream setting. All the deaf participants agreed on the importance of providing both ASL and English to deaf students, allowing them to navigate both the hearing and deaf worlds. They emphasized the need to give students a strong deaf community while also providing them with mainstream opportunities to "make their world bigger" and avoid being isolated.

Theme 4: Coaching for Success. Many educators identified challenges in assessing deaf students and implementing consistent educational programs. A major issue is the lack of standardized ASL assessments and a lack of training for educators on existing tools like the VCSL and ASL Expressive Assessment. Participant 17 shared that "training was hard to locate," and "finding an appropriate trainer was challenging." Additionally, administration requires a deaf adult. Participant 13 commented, "It just doesn't feel right for me as a hearing individual, when ASL Another educator emphasized that, as a hearing person, they felt it was inappropriate for them to assess ASL, a language they are not a native speaker of, suggesting that a deaf adult who is a native signer should be the one to administer the assessments. It was relevant in the data

that assessment in ASL is lacking. This creates a challenge for assessing and planning for students.

Finally, the lack of a formal, uniform language policy in most school programs was highlighted. This leads to inconsistency, with different teachers using different methods and approaches, and creates confusion about how to implement the program's language philosophy. Participant 12 shared the need for consistency throughout the program that can only come from creating a uniform policy for language.

> Most school programs don't have a formal language policy. They have an informal understanding or agreement. They have a language philosophy, but they don't really have a formal language policy. And how do you implement that philosophy? What does it look like? So, I think, you know, if you don't have a formal language process policy, everybody is doing something different. You're doing this. She's doing that. There's no consistency. In the program itself, in the school itself, there's no consistency. Each room is different.

Evaluation of the Outcomes

This study was guided by the Translanguaging Framework for Deaf Education (TFDE). The TFDE challenges traditional views of language by promoting an asset-oriented approach that values all of a student's communication skills, including unconventional forms like home signs and gestures, which are often stigmatized (Wolbers et al., 2023). Educators who participated in this study frequently noted challenges within the classroom or district when staff and administration held deficit-oriented views of deaf students, or overvalued the spoken language. The TFDE is also particularly relevant for deaf children who have experienced language deprivation, such as indicated by educators in this study. It recognizes that students’ unique

communication practices are legitimate (Wolbers et al., 2023). The TFDE encourages educators to see deaf students' existing language skills as valuable assets. It promotes the use of diverse communication methods, helping students develop their linguistic abilities and become more adaptable communicators.

This study, which aimed to understand educators' perspectives on implementing a bimodal bilingual pedagogy, used a qualitative thematic analysis to explore a key problem: educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom, which leads to the perpetuation of inequities and marginalization of deaf students who use ASL, affiliate with Deaf culture and the Deaf community. The findings both supported the study's conceptual framework and highlighted areas for future research. The inductive thematic analysis was a suitable method because it allowed for the collection of educators' thoughts and experiences and identified shared patterns within that qualitative data.

The findings in this study have made clear that there is a myriad of ways educators of the deaf in regional and district programs address a bimodal bilingual pedagogy, specifically how they incorporate both ASL and spoken English into the classroom. However, educators tackled the issue of language and cognitive diversity in similar ways. The findings did, however, also reveal the need for systematic training and resources to support ASL and language equity within the classroom. Additionally, it became evident through data analysis that ASL resources and assessment are significantly lacking. Finally, schools should provide accessible resources to families to help them actively participate in their child's education, which encourages the creation of a bilingual or multilingual, deaf-friendly environment at home that supports

continuous learning. This evaluation will assess how well the findings align with the research problem and purpose, considering the study's conceptual framework and the existing literature.

Research Question 1: How do educators in a bimodal bilingual regional program describe how they address language diversity within the classroom?

The results of this study demonstrate that educators overwhelmingly emphasized the necessity of using small-group and one-on-one instruction to address the significant language diversity in their classrooms, which aligns with the theoretical framework of this study. The TFDE is designed to support the development of a student's linguistic resources and communicative flexibility (Wolbers et al., 2023). In practice, this often requires differentiated instruction to meet the diverse needs within a classroom. While the framework does not explicitly mandate small group instruction, its foundational principles of valuing individual communicative repertoires and expanding linguistic resources make small group and individual instruction a necessary and effective pedagogical strategy. Educators in this study expressed that this tiered support allows teachers to tailor instruction to a student's preferred communication method and address specific needs in foundational academics and self-advocacy skills. Educators also indicated that students often enter with varying levels of language skills, ranging from little to no foundation to some proficiency in ASL or spoken English. To meet these unique needs, educators found it essential to provide individualized attention for language and vocabulary development, particularly for students with minimal language exposure or language deprivation. Many deaf children experience the traumatic effects of language deprivation because they are not exposed to a named language, such as spoken English or American Sign Language (ASL), by the age of five (Hall & De Anda, 2021).

Based on the idea that deafness creates a greater emphasis on visual orientation, Deaf epistemologies refer to the unique ways that deaf individuals think and view the world. This stands in contrast to hearing epistemologies, which are based on a hearing perspective (Cue et al., 2019; O'Brien, 2020). This study indicates that educators strongly believe that ASL should be the primary language of instruction for deaf students. The participants explained that ASL is highly accessible because it is visual from birth, which makes it easier for deaf students to build a strong linguistic foundation. This foundation, they argued, is crucial for later success in learning written and spoken English. Research showed that focusing literacy instruction on the strengths of deaf individuals—specifically their visual skills, sign-to-print mapping strategies, and cultural knowledge—boosts their performance and motivation (Holcomb, 2023; Johnson et al., 2020; Jones, 2021). According to educators, using ASL helps students expand their concepts and comprehension in ways that simply hearing a language cannot. The TFDE is a versatile framework applicable in various educational contexts, offering pedagogical support to foster language development and enhance linguistic adaptability among deaf students (Wolbers et al., 2023).

Participants shared that deaf students who struggle in oral-only programs often transfer to signing programs in later grades and pick up ASL very quickly, which demonstrates how much deaf students need a visual language. Many deaf individuals feel a significant sense of relief and belonging upon meeting other deaf students who share similar life experiences (Cue et al., 2019). They expressed a strong preference for spending time with signing peers over those who didn't use sign language. This suggests that interacting with the Deaf community and learning ASL leads to a profound sense of comfort.

Cue et al. (2019) and Hall et al. (2019) highlighted the importance of creating positive learning experiences for deaf students by acknowledging and embracing Deaf epistemologies, the unique ways of thinking and viewing the world, shaped by a visual orientation and the community's vernacular language, such as ASL. This approach directly contrasts with the long history of the medical model, often pushed by hearing individuals, versus the desire of the Deaf community for a linguistic and cultural environment that values ASL and Deaf culture (Cue et al., 2019). This *Deaf World* is seen as a collective ideal that provides a sense of belonging and wholeness (Basas et al., 2023; Jones & Singleton, 2020; Smagorinsky & Lang, 2023).

Deaf educators in the study strongly believed that deaf students need regionalized programs with deaf peers and adults to prevent feelings of isolation and exclusion. This perspective often clashes with the mainstreaming push from school administrators, which prioritizes socialization with hearing peers. Knowledge is shaped by both social and individual experiences, which have significant implications for marginalized groups like the Deaf community (Reagan et al., 2021).

Deaf epistemology, or the unique way deaf individuals acquire and understand knowledge, is influenced by their experiences in a society that primarily relies on sound (Cue et al., 2019; O'Brien, 2020). The way hearing people interact with deaf individuals also plays a crucial role in this process (Reagan et al., 2021). One educator in this study noted that hearing staff can unintentionally exclude deaf students and colleagues by defaulting to spoken communication, reinforcing the need for deaf-centered spaces where sign language and deaf culture are the norm. A regional program provides the necessary foundation in language and self-advocacy skills, which are crucial for success in mainstream environments later on.

Additionally, participants who are deaf, hard of hearing, or a Child of Deaf Adults (CODA) shared personal experiences of feeling "stuck," "isolated," and "alone" in mainstream classrooms. They emphasized that a supportive deaf community helps students develop a strong sense of identity and gives them the ability to navigate both deaf and hearing worlds. The TFDE is based on Crip linguistics, which challenges traditional linguistic rules and assumptions by focusing on the experiences of disabled people (Henner & Robinson, 2021). This approach examines how language can either reinforce or combat ableism and explores alternative ways of using language that are more inclusive and empowering for disabled communities. The ultimate goal is to promote inclusivity, accessibility, and social justice in all communication practices. Educators in this study suggested that inclusivity is further supported by a collaborative approach, where professionals like speech-language pathologists (SLPs) work with classroom teachers to give students equal access to both English and ASL.

Research Question 2: What are educators' perceptions of the benefits and challenges of implementing a bimodal bilingual pedagogy in a regional deaf education program?

Creating a safe and inclusive learning environment for deaf students means providing communication access for everyone, regardless of their preferred language. A recurring theme in the data emphasized the importance of fostering a sense of belonging within a bimodal bilingual environment. Human connection is fundamental, with a key aspect being the innate desire to be part of a community (Olsson & Gustafsson, 2022). This sense of belonging is intrinsically linked to forming meaningful, lasting relationships, cultivating security and acceptance, and nurturing a natural drive for close, positive connections. In this study, participants highlighted the need to create a "deaf-friendly" space where students who use spoken language are not prioritized over those who use ASL. One educator shared that in a fourth-grade classroom, students created a

designated "spoken English zone" where speaking was permitted. Outside of this area, students were expected to use ASL. One day, a student left the speaking zone and began talking to a teacher in English. Another student promptly reminded him to use ASL, demonstrating that the students were actively monitoring and enforcing their own language rules and the need for acceptance of both ASL and English.

Deaf educators are frustrated with school districts that push for mainstreaming, a practice they believe isolates deaf students. Instead, they advocate for regional programs where students can be with deaf peers and adults. According to scholars, the problem lies in the disabling nature of the educational environment, not in the students' biological hearing differences (O'Brien, 2020). Therefore, education should focus on addressing the social consequences of hearing loss and creating an inclusive environment where deaf individuals can participate with dignity and appreciation. Educators feel that administrators often don't understand the unique needs of deaf students and the importance of having a collective environment. This lack of knowledge is a significant challenge, with one educator noting that she constantly must re-educate new administrators who don't grasp that ASL is an equal language.

One of the major challenges in implementing a bimodal bilingual pedagogy in deaf education with fidelity is staff resistance and a lack of understanding of deaf culture. Many educators noted that some hearing staff members are not fluent in ASL and resist the new approach, often defaulting to speaking and signing at the same time, which contradicts research-based best practices. This lack of "buy-in" and inadequate ASL skills create an exclusionary environment where hearing staff may unintentionally leave out deaf students or colleagues. Participants in the study want to provide students with both ASL and English so they can comfortably navigate both the deaf and hearing worlds. They feel that regional programs, in

conjunction with some mainstreaming opportunities, can help make a deaf student's world "bigger" by providing a strong community while also fostering understanding between deaf and hearing cultures. Ultimately, the goal is to prevent deaf children from feeling "stuck and isolated."

Smagorinsky & Lang (2023) suggest that to properly integrate Deaf epistemology into education, teachers must focus on creating a sense of belonging, valuing students' cultural capital, and providing positive language experiences. Educators emphasized the importance of having Deaf language role models. Based on the literature, interacting with deaf role models improves a deaf student's language skills and cognitive development since Deaf adults naturally understand that deaf students are often marginalized both linguistically and culturally (Jones et al., 2021). Emphasis is placed on the importance of visual learning and communication, rather than on viewing hearing loss as a deficiency.

Educators also expressed a need for more resources and training on instructional methods, with many feeling they are "just learning" what works. One participant noted that a program's name was changed to "ASL English Bimodal", but training was not provided, leading to a disconnect between the new label and actual classroom practice. This highlights the importance of providing direct, in-class coaching and professional development. Ultimately, the consensus was that educators must set aside personal beliefs to address the diverse needs of the students in front of them, recognizing that a one-size-fits-all approach is ineffective.

Finally, schools need to provide accessible resources to families that enable active participation in the deaf child's education, creating a bilingual or multilingual, deaf-friendly space for continued learning in the home. Most deaf children have hearing parents who have little to no knowledge about hearing loss, which often leads to communication barriers in the

family (Eichengreen et al., 2022; Johnson et al., 2020). These parents typically choose oral education methods, which can unfortunately exclude their child from interactions with deaf peers at school (Scott & Henner, 2021). This lack of social connection can negatively affect a child's socio-emotional development, sense of belonging, and self-identity, often resulting in feelings of isolation (Olsson & Gustafsson, 2022).

Research Question 3: How do educators in a bimodal bilingual regional deaf education program describe how they assess, delineate, and address students' diverse language and communication needs?

According to educators, small group and individual instruction are crucial for meeting the diverse needs of deaf students and addressing ASL and English separately. Participants explained that classroom aides can be used to lead small groups, allowing teachers to focus on specific language modalities like ASL while assistants work with students on spoken language. This approach is essential because students enter the classroom with a wide range of language abilities, and individualized attention is necessary to ensure success. This mimics the traditional deaf bilingual education model, which uses language separation, a practice where either ASL or spoken English is used exclusively for a specific time or activity (DeLana et al., 2007). This approach is based on the idea that keeping the two languages distinct helps children learn and use them more effectively. While all educators agreed on the importance of bilingualism for deaf students, they were divided on the best approach for teaching it. Most felt that ASL should be the primary language of instruction, with spoken language used as needed. However, they were split between using a language separation model (keeping ASL and spoken English distinct) and a language allocation model (using both languages with increasing focus on the second language

as students advance). One educator noted that, from experience, the language allocation model was more beneficial, especially by prioritizing ASL during a child's early years.

Educators in this study believed parents should be encouraged to embrace sign language and deaf culture in the home, not just rely on the school. Research showed that deaf children with hearing parents often struggle more to find their place in both the Deaf and hearing worlds compared to deaf children who have Deaf parents (Cue et al., 2019; Eichengreen et al., 2022). To help parents understand this, educators emphasized the importance of sharing assessment data that shows the benefits of ASL for their child. They stressed that parents need to learn ASL themselves to be able to communicate effectively at home. Additionally, some educators noted that parents may not be aware of their child's needs or even their deafness, with some students arriving at school at age five with no prior education. Participants also noted that many parents default to an "English-only" approach due to fear or a lack of understanding. One educator suggested that offering workshops and deaf community events could help parents overcome this fear and realize that it's okay for their child to be deaf. The general consensus was that parents need resources to understand their child's needs, create a deaf-friendly home environment, and connect with the deaf community to support their child's social and emotional well-being.

Implications and Recommendations for Practice

The problem addressed in this study was that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom (Fullwood & Levinson, 2023). Indicated as one of the biggest challenges by educators in this study, many educators unknowingly reinforce traditional, hearing-centric norms in the classroom, leading to the perpetuation of inequities and marginalization of deaf students and staff who use ASL. This aligns with the literature review indicating that the historic view of deafness

as a defect to be remediated leads to philanthropic superiority among hearing educators, negatively impacting pedagogy and academic outcomes of deaf students (Paul, 2018; Reagan et al., 2021; Smagorinsky & Lang, 2023). To create more supportive environments for deaf individuals, this study implies that emphasis should be placed on the need to reeducate the hearing population. This recommendation is validated through the research of Smagorinsky and Lang (2023), which indicated that pre-service teachers' views on deafness shifted from a pathologizing view to perceiving deafness as an issue rooted in society rather than something inherently wrong with deaf individuals, following an exploration of human diversity by discussing authentic experiences of deaf adults.

The CCPEP indicates that to work effectively with people from diverse backgrounds, professionals and institutions must develop culturally proficient practices (CCPEP, 2020). This means having the skills and knowledge to understand and respect different cultural perspectives. These practices involve adapting how to teach or provide services to meet diverse needs and creating inclusive, equitable environments. Reagan et al. (2021) stressed that all stakeholders should critically evaluate their own position, privilege, and power. Training is an essential first step to ensuring staff buy-in to support equity and inclusion.

It is implied through this study that improving deaf education requires a comprehensive approach that prioritizes the students' linguistic and cultural needs. Educators must collaborate to prioritize Deaf students' language needs, leveraging push-in services, honoring individuality, promoting student involvement in discussions of inclusion and equity, and providing access to Deaf adult role models, rather than prioritizing social integration in isolated mainstream environments. A key challenge is the lack of understanding from administrators regarding the unique needs of deaf students and the equal importance of ASL. Prioritizing mainstreaming as a

practice isolates deaf students and leaves them feeling "stuck" and "alone." Educators strongly advocate for regionalized programs that place deaf students with their deaf peers and adults. Emphasis is placed on the importance of visual learning and communication. They argue this collective environment is crucial for building a strong language foundation and self-advocacy skills, which are necessary for success in any future mainstream setting. This aligns with the research of Cue et al. (2019) as they examined Deaf epistemology through d/Deaf individuals' experiences and perceptions.

Implications of this study also indicate that ASL should be the foundational language for whole-group instruction in a bimodal bilingual pedagogy, as it is the most accessible language for deaf children from birth. Focusing on ASL initially provides a strong linguistic foundation. Students are better prepared to learn a second language, such as written or spoken English, after they have a solid base in one. Educators should use a variety of teaching methods, including small group instruction with visual supports, to address the diverse needs of students and foster language development and self-advocacy skills. In alignment with the literature review, using an asset-based approach to literacy instruction improves deaf students' performance and motivation (Holcomb, 2023; Johnson et al., 2020; Jones, 2021). This method focuses on their visual strengths, uses sign-to-print mapping strategies, and leverages the cultural knowledge of Deaf individuals.

This study indicated that school programs for deaf students lack a formal, uniform language policy, which leads to inconsistency in teaching methods. As one participant noted, most schools have only an informal understanding or philosophy, but without a clear policy, different teachers use different approaches. This creates a fragmented and inconsistent learning experience for students. While language separation—the practice of using either ASL or spoken

English exclusively during certain activities—has been a traditional method in deaf bilingual education, particularly for literacy (DeLana et al., 2007), this study did not provide sufficient data to confirm or recommend a specific practice. Further research is warranted.

Finally, implications of this study indicate that schools must provide families with resources to create a bilingual or multilingual, deaf-friendly home environment, ensuring that learning continues outside of the classroom. Ninety percent of deaf children are born to hearing parents (Mitchell & Karchmer, 2005). Parent education is crucial for the success of deaf students. Many hearing parents lack knowledge about deafness and the importance of ASL. According to Hall et al. (2019), language deprivation leads to significant delays in language development, which can cause lifelong problems like cognitive impairments and social isolation. In addition, Cue et al. (2019) and Eichengreen et al. (2022) argued that deaf children from hearing families face challenges in finding their place within the Deaf community and finding their sense of belonging in the hearing world in comparison to deaf children born to Deaf parents.

Recommendations for Future Research

The next step in this research is to refine the findings and assess their transferability to other contexts. This may not represent all deaf educators, deaf education programs, or deaf students in other regions. Future research should replicate this study in different schools, districts, and with different groups of teachers. By doing so, the findings will be more transferable and provide a wider range of perspectives and experiences (Drisko, 2025).

Secondly, future research should investigate assessment in deaf education, leading to the development of language and communication plans. The first step in understanding a student's unique language skills is to properly assess their language abilities (Graham & Shuler, 2020;

Hall et al., 2019). Effective bimodal bilingual programs in deaf education must include the creation of an individual language and communication plan for each child (Nussbaum et al., 2012). Several ASL assessments are at various stages of validation for use with students who are deaf from kindergarten through 12th grade (Haug, N.D.).

Implementation of bimodal bilingual pedagogy as a strategy to improve the classroom environment is hindered due to inconsistent implementation, insufficient training, and a lack of administrative support. Further research should include a multi-year case study of a deaf education program in the process of transformation to a bimodal bilingual pedagogy. Ideally, this study would commence with an investigation into present policies and procedures that may hinder transformation. It would include institutional training to ensure culturally proficient practices (CCPEP, 2020; Smagorinsky & Lang, 2023), including all stakeholders critically assessing their position, privilege, and power (Reagan et al., 2021). Active educator coaching would be provided within the context of the classroom to improve instructional practices using the TFDE and bilingual best practices, making applicable adaptations to visual learners and deaf-centric space. Literacy instruction would be an asset-based approach that focuses on the visual strengths, sign-to-print mapping strategies, and the cultural knowledge of Deaf individuals (Holcomb, 2023; Johnson et al., 2020; Jones, 2021).

Finally, further research should examine how participation in a bimodal bilingual program impacts academic achievement. A quantitative study is recommended to collect data on students' involvement in a program using bilingual best practices and the TFDE and its effect on their academic progress. The study would involve comparing the academic achievement scores of students who participated in an effective bimodal bilingual classroom with those who did not.

Conclusions

The problem addressed in this study was that educators' diverse perceptions can hinder the fidelity of implementing a bimodal bilingual pedagogy within the deaf education classroom (Fullwood & Levinson, 2023), leading to the perpetuation of inequities and marginalization of deaf students who use ASL, affiliate with Deaf culture, and the Deaf community. Through a qualitative descriptive design grounded in the TFDE, this research examined the perspectives of educators and identified five overarching themes that provide a roadmap for improving practice within regional or district deaf education programs. The key findings underscore the importance of shifting from a deficit-based model to an asset-based approach, prioritizing deaf students' linguistic and cultural needs within a supportive community.

The findings have significant implications for practice, highlighting the need for a programmatic and cultural transformation in deaf education. The first implication of this study is that educators, particularly those in the hearing community, must critically examine their own biases and beliefs to move beyond a defective view of deaf students. Additionally, to effectively serve a diverse deaf student population, educators should prioritize a linguistically accessible environment in ASL to build a strong linguistic foundation that can then support the development of written and spoken English. Another implication of this study is that isolated environments often leave deaf students feeling "stuck" and "alone." The recommendation is that educators must collaborate to prioritize deaf students' language needs and provide them with access to a "critical mass" of deaf peers and adult role models, rather than prioritizing social integration without adequate linguistic and cultural support. Given the broad spectrum of student diversity, from varying degrees of hearing loss and language proficiency to different

communication preferences, it is implied that educators must utilize small-group and individual instruction to tailor teaching and foster essential skills like self-advocacy.

Finally, schools must provide training and resources for all stakeholders. A major challenge identified was the lack of consistency and training. The findings suggest a critical need for active, collaborative coaching for all educators (teachers, aides, and related service providers) to ensure they can effectively incorporate both ASL and spoken English and understand the unique needs of deaf students. Furthermore, schools are responsible for providing accessible resources and education to families, empowering them to create deaf-friendly environments at home that support their child's continuous language development.

The central findings of this study indicate that a truly effective bimodal bilingual deaf education pedagogy is not only a set of instructional techniques but a fundamental shift in philosophy. It is about valuing deaf individuals' full linguistic and cultural repertoire, moving away from a rehabilitative stance and embracing a culturally affirming, deaf-centric approach. The recommendations for future research are clear: replicate this study in other contexts, investigate and validate effective ASL assessments, conduct a multi-year case study on programmatic transformations, and perform a quantitative study to measure the impact of this pedagogy on academic achievement. These next steps are essential to building a robust body of evidence that can guide the field toward a more equitable and effective future.

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Appendix A

Interview Protocol

Date: _____ Time of Interview _____ Interviewer: _____

Participant (Use Pseudonym ONLY): _____

Introduction:

First of all, thank you for taking the time to talk to me today. My name is Michelle Sumner, and I am here to talk to you about your perspectives on using bimodal bilingual strategies with deaf students.

Let me give you an outline of what's going to happen. I am going to ask you a series of questions. We want to understand things from your perspective. It's important to highlight that this isn't a test. There are no right or wrong answers to any of the questions. I would like to ask you to be as honest as possible. You can't offend me in any way, so please speak freely. I do have specific questions to ask, but please feel free to add any additional comments you feel will contribute to the community of practice.

Do you have any questions or comments so far?

I want to remind you about the consent you signed. This conversation is strictly confidential. The interpreters have also signed an agreement of confidentiality. We won't share any details with anyone outside the immediate people working on this study. You will be given a code, so your answers will not be connected to your name. If I use any quotes within my final project, your pseudonym will be used in place of your real name. All the information I collect will be kept on a password-protected computer and back-up drive. The only people who will access your information and your identity are my NCU Committee members, who are my Chair, my Methodologist, my Content Expert, and myself.

Once we have finished our interview, we will double-check if there is anything else you would like to add.

If at any point you want to take a break or stop the interview, please just let us know, and we can work around it. Any questions before we begin?

Let's get started!

{RECORD}

Dialogue of topics to cover

Icebreaker/Rapport:

Tell me about how you got involved in deaf education.

How long have you been working here?

What is your position?

What positions have you held prior to this?

Validating individuals' idiolects:

1. Can you describe the language make-up of your students? (idiolects)
2. What is your student's proficiency in each language they use? (idiolects)
3. How do you measure your students' language proficiency? (idiolects, metalinguistics)
4. What is the primary language of instruction in your classroom? (idiolects, shared understanding, social contexts)
5. What strategies do you use to ensure that all students in your classroom are able to understand the material, regardless of their language proficiency? (shared understanding, metalinguistics, idiolects)
6. What does the term "inclusion" mean to you in regard to language diversity? (idiolects)
7. What kind of language barriers exist within your classroom? (social contexts)
8. Tell me about a time you encountered a language barrier within the classroom and how you came to a shared understanding? (shared understanding)
9. What language barriers exist for students outside of the classroom? (external audiences)

10. Describe a time you taught about the language barriers that may exist when communicating with others outside of the classroom? (external audiences)
11. Describe your experience with using technology and digital resources to teach language? (idiolects, shared understanding, social contexts, external audiences, metalinguistics)
12. What types of curriculum or supplemental support materials do you find beneficial in teaching language in your classroom? (metalinguistics)
13. Is there something you wish you had access to for teaching language in your classroom? Let's dream big here! (metalinguistics)
14. Is there anything you want to add to improve the community of practice in deaf education?

The following probes will be used if needed for all of the semi-structured interview questions above in order to get detailed responses to the questions:

Probe 1: Can you expand on that?

Probe 2: Tell me more about…

Probe 3: Explain what you mean by…

Exit Script

I would like to thank you for your willingness to participate in the interview aspect of my study. Now that we are finished with the interview, I would like to take this opportunity to address any questions or concerns. I will email you a transcript within the next week. Please review it and email back any corrections within five business days. Thank you for participating, and have a great rest of your day!

Appendix B

Informed Consent

National University IRB

9338 Lightwave Ave., San Diego, CA 92123

irb@nu.edu

My name is Michelle Sumner, and I am a doctoral student at National University (NU). I am an administrator in a Deaf Education Regional Program. I hold a role as the Coordinator of Special Education with the Placer County Office of Education.

I am conducting research on educators' perspectives on implementing a bimodal bilingual pedagogy within a deaf regional program. The name of this research is "Examining Educators' Perspectives Regarding Implementing a Bimodal bilingual Deaf Education Pedagogy in a Regional Program." I am seeking your consent to participate in this research.

Please read this document to learn more about this research and determine if you want to participate. Your participation is completely voluntary, and I will address your questions or concerns at any point before or during the research.

What will happen during the research?

If you agree to participate in an individual interview, you will do the following things:

- Complete an anonymous online demographic survey about your profession and the students you serve for 5 minutes.
- Take part in a virtual interview for 45 minutes using the pseudo name provided in the demographic survey.

If you agree to participate in a focus group, you will do the following things:

- Complete an anonymous online demographic survey about your profession and the students you serve for 5 minutes.
- Take part in an in-person or virtual group discussion for 60 minutes using the pseudo provided within the demographic survey. Date to be determined by recruitment.

During these activities, you will be asked questions about:

- How long you have been in the field of deaf education.
- Your hearing status.
- Diversity of hearing acuity in the students you serve.
- The grade levels you teach.
- The pedological practices in your classroom and organization.
- Your personal beliefs about deaf education.
- Your personal beliefs about language and communication.
- Your personal philosophy of education of the deaf.
- Your values, beliefs, and attitudes toward diversity.
- Your knowledge of bilingual educational practices.
- How you navigate the language diversity in your classroom.
- Your preferred mode of communication.

In addition, I would like to audio/video record your responses and/or actions with a voice recorder and video camera of the interview or focus group session. The transcripts and recordings will be stored on a password-protected computer. All data will be destroyed three years after the publication of this research.

Why is this research being done?

The purpose of this study is to examine educators' perceptions about implementing a bimodal bilingual program for deaf students within a regional program in the Western United States.

You were selected as a possible participant because you work with deaf students from linguistically diverse backgrounds and hearing acuities in a bimodal bilingual program from preschool through 12th grade.

How many people will take part?

If you agree to participate, you will be one of approximately 15-20 participants participating in this research.

What are the potential risks of taking part in the research?

There are minimal foreseeable risks or discomforts associated with this research. You can still skip any question you do not wish to answer, skip any activity, or stop participation at any time.

Some possible risks include emotional and psychological discomfort due to personal trauma or conflicts of opinion. To decrease the impact of these risks, you can skip any question you do not wish to answer, skip any activity, or stop participation at any time. Your participation will have no bearing on your current employment status. All identifiable data will be removed to ensure anonymous participation.

What are the potential benefits of taking part in the research?

The benefits to participation in the research that are reasonable to expect are an increased knowledge base about bimodal bilingual instructional techniques to implement in your practice/profession. You may also learn more about equitable educational practices with deaf students. Potentially, this may improve the academic outcomes of deaf students under your care. This research will help me understand educators' perspectives on implementing bimodal bilingual practices in a regional program for deaf students. This research may increase the body of knowledge in the subject area of this research.

Taking part in the research is voluntary.

Participation in this study is completely voluntary. You may quit at any time.

How will my information be protected?

I cannot guarantee absolute confidentiality. Efforts will be made to keep your personal information confidential:

- Your personal information may be disclosed if required by law.
- No information that could identify you will be shared in publications about this research and databases in which results may be stored.
- The only people who will have access to your information are my Chair, my Subject Matter Expert, my Academic Reader, and myself.
- Three years after the publication of this research, all data will be destroyed.

Will my information be used for research in the future?

Information collected from you for this research may be used for future research studies or shared with other researchers for future research. If this happens, information that could identify you will be removed before sharing any information. All data about you will be de-identified.

Will it cost me anything to participate?

There is no cost to you for taking part in this research.

Who should I call with questions or problems?

For questions about the research, contact the researcher, Michelle Sumner, at 714-625-7193. You may also contact me by email at M.Sumner4594@o365.ncu.edu.

For questions about your rights as a research participant, to discuss problems, complaints, or concerns about research, or to obtain information or to offer input, please contact the NU Institutional Review Board at irb@nu.edu.

Can I withdraw from the research?

You may choose for your data to not be included in the research. This decision will not result in any penalty affecting your current employment status or hinder your relationship with your current supervisor, Michelle Sumner. If you do not want your data used for this research, please inform me at 714-625-7193 or M.Sumner4954@o365.ncu.edu.

To begin participating in this study, please follow the link here. You may also scan the QR Code below:

Demographic Survey Link

Appendix C

Interpreter Confidentiality Agreements

National University
UNIVERSITY

National University IRB
9338 Lightwave Ave., San Diego, CA 92123
irb@nu.edu

Non-Disclosure/Confidentiality Agreement

I Tracie Spingarn will help Michelle Sumner with the research study titled "Examining Educators' Perspectives Implementing a Bimodal-Bilingual Deaf Education Pedagogy in a Regional Program."

My role will be to act as a bilingual ASL/English interpreter during interviews and focus groups with participants.

In this role:

1. I will not disclose the names of any participants in the study.
2. I will not disclose personal information collected from any participants in the study.
3. I will not disclose any participant responses.
4. I will not disclose any data.
5. I will not discuss the research with anyone other than the researcher(s).
6. I will keep all paper information secure while it is in my possession.
7. I will keep all electronic information secure while it is in my possession.
8. I will return all information to the researcher when I am finished with my work.
9. I will destroy any extra copies that were made during my work.

12/10/2024

Signature Date

Michelle Sumner 12/16/2024

Researcher Signature Date

Full contact information of research assistant

Name: Tracie Spingarn

Phone: 860.874.3518

Email: terptracie@gmail.com

National University IRB
9338 Lightwave Ave., San Diego, CA 92123
irb@nu.edu

Non-Disclosure/Confidentiality Agreement

I, Kimberly Bella, will help Michelle Sumner with the research study titled "Examining Educators' Perspectives Implementing a Bimodal-Bilingual Deaf Education Pedagogy in a Regional Program."

My role will be to act as a bilingual ASL/English interpreter during interviews and focus groups with participants.

In this role:

1. I will not disclose the names of any participants in the study.
2. I will not disclose personal information collected from any participants in the study.
3. I will not disclose any participant responses.
4. I will not disclose any data.
5. I will not discuss the research with anyone other than the researcher(s).
6. I will keep all paper information secure while it is in my possession.
7. I will keep all electronic information secure while it is in my possession.
8. I will return all information to the researcher when I am finished with my work.
9. I will destroy any extra copies made during my work.

Kimberly Bella 12/16/24

Signature Date

Michelle Sumner 12/16/2024

Researcher Signature Date

Full contact information of the research assistant

Name: Kimberly Bella
Phone: 916-996-5029
Email: KBellainterpreting@outl

Appendix D

Focus Group Protocol

Date: _____ Time of Focus Group _____ Facilitator: _____

Participant (Use Pseudonym ONLY): _____

Prior to Focus Group Procedures

- Arrive early to prepare the interview area.
- Create an inviting, conversational atmosphere.
- Prepare snacks and drinks for the participants and have them readily available.
- Print copies of this protocol and provide one to each participant.
- Prepare recording devices and make sure they are operational and ready for recording.

As Participants Enter the Area

- Introduce myself and welcome the participants to the research study.
- Introduce the interpreters in the room, their role in the study, and confidentiality
- Obtain verbal consent of each participant prior to data collection.
- Explain the research purpose, and the participant's role in the interviews. Stress the value of the participant to my research, and why I need their opinions and ideas.
- Address the terms of confidentiality by assigning each participant a pseudonym.
- Remind participants that they may leave the study at time, withdraw completely, as well as skip any question that will be posed.
- Give time for participants to grab a snack and get comfortable. At this time, questions will be answered, or concerns may be addressed.
- Start the recording device once the participants have agreed they are ready to begin and agree to the focus-group session stating they understand the purpose, their involvement, and their voluntary participation.

Facilitator Script

First of all, thank you for your willingness to participate in the focus group discussion of my study. My name is Michelle Sumner, and I am here to talk to you about your perspectives using bimodal bilingual strategies with deaf students. Our discussion will take about 60 minutes, and I will be recording it so I can go back and make a transcript of our talk. Before we begin, here are some ground rules for group interaction:

1. Respect everyone's ideas by not criticizing them.
2. Participate actively while keeping focused on the questions I will be asking you.
3. Minimize any side conversations by actively listening and allowing one speaker at a time. This ball will be used to indicate who the speaker is. This will allow time for our Deaf participants to identify who is speaking and return their attention to the interpreter as necessary.
4. For your identity to remain confidential, everyone will be addressed by their pseudonym identified on their nametag.
5. You may leave the discussion at any time you no longer wish to continue.
6. Please do not share any of the discussion outside of this group.

Any questions?

Let me give you an outline of what's going to happen. I am going to ask you a series of questions. I do have specific questions to ask, but please feel free to add any additional comments you feel will contribute to the community of practice. I want to understand things from your perspective. It's important to highlight that this isn't a test. There are no right or wrong answers to any of the questions. I would like to ask you to be as honest as possible.

Do you have any questions or comments so far?

I want to remind you about the consent for you signed. This conversation is strictly confidential. The interpreters have also signed an agreement to confidentiality. I will be taking notes throughout the session. I won't share any details with anyone outside the immediate people working on this study. You will be given a code so your answers will not be connected to your name. If I use any quotes within my final project, your pseudo name will be used in place of your real name. All the information I collect will be kept on a password-protected computer and back-up drive. The only people who will access your information and your identity are my NCU Committee members who are my Chair, my Subject Matter Expert, my Academic Reader, and myself.

Once we have finished our discussion, I will double check if there is anything else you would like to add. Let's start by introducing yourself. I have not started recording, yet so feel free to use your real names.

Remember, your participation is entirely voluntary. If at any point you want to take a break or stop the recording, please just let us know and we can work around it.

Any questions before we begin?

1. Let's begin by discussing the language diversity in the classroom. Can you describe your students' linguistic idiolects and how that influences your classroom instruction? (idiolects)
2. Tell me about a time you successfully supported a student(s) that did not understand the instructional content due to a language barrier. (shared understanding)
3. What strategies do you use to help build language and literacy skills bilingually? (metalinguistics)
4. How do you incorporate cultural elements into your lessons? (social contexts)
5. Describe the language hierarchies that may exist in your classroom or out of your classroom. (social contexts, external audiences)
6. What types of informal or formal assessments do you use to identify and monitor language growth in both ASL and English? (idiolects)

For all focus group questions, the following prompts will be used to get more information if needed:

Probe 1: Can you tell me more about that?

Probe 2: Can you give me an example of that?

Probe 3: What did you mean when you said...?

Probe 4: Can anyone else respond to that?

Probe 5: Is there anyone who feels differently about that?

Conclusion Script

Now that we are finished with our discussion, I would like to take this opportunity to address any questions or concerns anyone has. Thank you for participating, and have a great rest of your day!

Appendix E

Site Authorization Letter

National University IRB
9338 Lightwave Ave., San Diego, CA 92123
irb@nu.edu

Date: November 22, 2023

Hello NU IRB,

I am Susan Connolly, the Assistant Superintendent of Student Services at the Placer County Office of Education.

I have reviewed Michelle Sumner's study, and I understand that they are seeking participants who meet all of the following criteria:

1. Participants must be age 18 or older.
2. Participants must currently work with deaf students in a bimodal-bilingual program with students from preschool through 12th grade.
3. Participants must have one or more years of experience working with deaf students in an educational program preschool through 12th grade.
4. Participants must work with students from linguistically diverse backgrounds: English-only homes, non-English speaking homes, multilingual homes, and signed languages.
5. Participants must work with students with diverse hearing acuities: mild to profound hearing loss with or without amplification.

I grant permission to Michelle Sumner to do the following:

1. Ask staff to voluntarily participate in their study.
2. Conduct personal interviews with staff with their permission.
3. Conduct a focus group session with staff who volunteer to participate.
4. Conduct classroom observations with teachers and service providers who volunteer to participate.
5. Use publicly available PCOE documents within their research.

If you have questions or want to reach me, please email me at sconnolly@placercoe.org.

Thank you for your time,

Susan J Connolly

Appendix F

IRB Authorization

9388 Lightwave Ave. San Diego, CA 92123 irb@nu.edu

Notice of Exemption

April 30, 2024

To: Michelle Sumner

Project Title: Examining Educators' Perspectives Regarding Implementing a Bimodal bilingual Deaf Education Pedagogy in a Regional Program

NU IRB Number: IRB-FY23-24-546

Determination: Exempt from further review 45 CFR 46.101 Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Status: Active - Research activities may begin as of April 30, 2024

Dear Michelle Sumner:

The study referenced above has been reviewed by the National University IRB. The IRB has determined your research is exempt from further review under 45 CFR 46.104, which means you will not need to renew your study and may begin your study effective immediately. However, if you find the need to change your study in any way, you will need to submit a modification to the IRB prior to implementing the changes. This will allow the IRB to determine whether or not the study still meets exemption criteria.

Please review your Post Approval Responsibilities here: Approved Documents Guidelines For any questions regarding your protocol, please reach out to the IRB at irb@nu.edu.

Sincerely,

Dr. Joseph Marron, IRB Chair

Dr. Brianne Mongeon, Director, HRPP & IRB

Jenessa Eberhardt, Associate Director, HRPP & IRB

Appendix G

Participant Recruitment E-Mail

National University IRB

9338 Lightwave Ave., San Diego, CA 92123

irb@nu.edu

My name is Michelle Sumner, and I am a doctoral student at National University. I am conducting a research study to explore the perceptions of educators implementing bimodal bilingual practices within a regional or district program.

I am recruiting individuals who meet all of these criteria:

1. You must be age 18 or older.
2. You must currently work with deaf students preschool through 12th grade using a bilingual-bimodal padegogy grade in a regional or district program.
3. You must have one or more years of experience working with deaf students in an educational program preschool through 12th grade.
4. You must work with students from linguistically diverse backgrounds, including English-only homes, non-English-speaking homes, multilingual homes, and homes with signed languages.
5. You must work with students with diverse hearing levels: mild to profound hearing loss with or without amplification.

If you decide to participate in this study, you will be asked to do the following activities:

1. Complete an online demographic survey about your profession for 5 minutes.
2. Complete an online demographic survey about the students you serve for 5 minutes.
3. Take part in a virtual interview for 45 minutes or participate in a virtual focus group meeting for 60 minutes.

During these activities, you will be asked questions about:

- Your hearing status and preferred mode of communication.
- How long you have been in the field of deaf education.
- Diversity of hearing acuity in the students you serve and grade levels you teach.
- The pedagogical practices and organization in your classroom.
- Your personal beliefs about deafness, language and communication, and philosophy of educating deaf students.
- Your values, beliefs, attitudes toward diversity, and knowledge of culturally proficient practices.
- Your knowledge of bilingual educational practices.

If you are interested in participating in this study, please contact me at M.Sumner4954@o365.ncu.edu.

Thank you for considering participating in this voluntary research!

Michelle Sumner, Doctoral Candidate

Appendix H

Participation Recruitment Flyer

Appendix I

Participant Demographics Survey

Self-Questionnaire

Below are questions about your current job working with deaf students. You can skip any question you do not wish to answer.

1. What is your job title?

   _____

2. How long have you worked in education? *Mark only one oval.*
   - o Less than 1 year
   - o 1-3 years
   - o 4-6 years
   - o 7-10 years
   - o 11 or more years

3. How long have you worked for your current employer? *Mark only one oval.*
   - o Less than 1 year
   - o 1-3 years
   - o 4-6 years
   - o 7-10 years
   - o 11 or more years

4. What is the highest degree or level of school you have completed? *If currently enrolled, highest degree received. Mark only one oval.*
   - o Not a High School graduate
   - o High School Diploma or GED
   - o Technical School
   - o Some college
   - o AA/AS or other College Degree
   - o BA/BS
   - o Some graduate school
   - o Graduate Degree: MA/MS or other
   - o PhD/EdD
   - o Currently enrolled
     Degree: _____

5. How do you identify yourself? *Mark only one oval.*
   - o Hearing
   - o Hard of Hearing
   - o Deaf
   - o Late Deafened
   - o Other: _____

6. Describe your current method of communicating with your students and language of instruction.

_____

_____

_____

Student Information

This section will ask non-identifying questions about the students you serve in your current role. You can skip any question you do not wish to answer.

7. How many deaf or hard of hearing students are on your caseload? Or how many deaf or hard of hearing students do you currently serve?
   _____
8. What grade levels do you serve?
   _____
9. Do you currently serve students from non-English speaking homes?
   - Yes
   - No
   - Maybe
10. What modes of communication do your current students use? *Check all that apply.*
    - Spoken language other than English
    - Spoken English
    - Gestures
    - Some form of sign language other than ASL
    - ASL
    - A combination of spoken English and Sign Language
    - Other: _____

End of Survey

Thank you for the time you spent taking this survey.

Your response has been recorded.

Appendix J

Initial Codes: Interview

1. 58 In Mind
2. a lot
3. a lot of
4. a mix
5. abilities
6. ability
7. able
8. academic
9. access
10. access to
11. accountable
12. act things out
13. activities
14. adding
15. additional
16. additional vocabulary
17. address
18. addressing
19. administrator
20. administrators
21. adopting
22. adults
23. advantage
24. advocate
25. AEB
26. after 1 year
27. A-G
28. age
29. agree
30. agreement
31. aide
32. aides
33. aligned to instruction
34. all deaf
35. all possibilities
36. all students
37. all the time
38. allow
39. always
40. always mainstream
41. and
42. approach
43. approaching
44. appropriate
45. ask questions
46. ASL
47. ASL Expressive Test
48. ASL model
49. ASL Receptive Test
50. ASL stories
51. ASL support
52. assesses
53. assessing
54. assessment
55. assessments
56. assistant
57. assistants
58. assumption
59. at first
60. at the moment
61. attitude
62. audiogram
63. audiologist
64. audiology assessments
65. audition
66. auditory
67. auditory development
68. awesome
69. awkward
70. back and forth
71. backgrounds
72. battle
73. become
74. become dependent
75. Bedrock Literacy
76. behaviour
77. beliefs
78. believing
79. benchmark
80. benefit
81. benefits
82. best
83. best ability
84. best benefits
85. BGC
86. Bi-Bi
87. big assessments
88. bigger
89. bilingual
90. bilingualism
91. bimodal
92. bimodal bilingual
93. bimodal students
94. body language
95. books
96. both
97. both languages
98. both perspectives
99. both worlds
100. boundaries
101. brainstorm
102. break
103. bridge the gap
104. buy-in
105. can't do
106. can't ignore
107. capable
108. catch
109. catch things
110. centers
111. certification
112. challenge
113. challenges
114. change
115. changed
116. changing
117. choice
118. clarifying questions
119. class
120. classes
121. classroom
122. classroom assistant
123. cochlear
124. cochlear implant
125. CODA
126. code-switching
127. collect data
128. colors
129. common
130. communicate
131. communication
132. communication dev.
133. communication plan
134. communication plans
135. complex

136. comprehension
137. computerized program
138. concept
139. connected
140. consistency
141. conversation
142. conversations
143. copied
144. couldn't handle
145. critical mass
146. cultural
147. curriculum
148. daily
149. data
150. deaf
151. deaf activities
152. deaf aide
153. deaf background
154. deaf class
155. deaf community
156. deaf education
157. deaf education dept.
158. deaf individuals
159. deaf leadership
160. deaf people
161. deaf person
162. deaf program
163. deaf school
164. deaf students
165. deaf teacher
166. deaf teacher group
167. deaf teachers
168. deaf-friendly
169. decide
170. decided
171. demonstrating
172. department
173. dependent on
174. depending on
175. determine
176. develop
177. developing
178. developing goals
179. development
180. developmental assessments
181. didn't
182. didn't change
183. didn't have
184. didn't provide
185. didn't tell
186. didn't want
187. difference
188. different
189. different approaches
190. different levels
191. different role
192. different sounds
193. difficult
194. disability
195. discrimination
196. discuss
197. discussion
198. dismissed
199. distracting
200. district
201. diversity
202. document
203. documentation
204. does not help
205. doesn't happen
206. doesn't have
207. doesn't speak
208. don't
209. don't communicate
210. don't do
211. don't focus
212. don't have
213. don't have enough
214. don't know
215. don't know where
216. don't sign
217. don't want
218. during
219. during instruction
220. each student
221. easier
222. educational audiologist
223. effective
224. either-or
225. elementary
226. elementary school
227. eliminate
228. empowers
229. end of the year
230. English
231. English language
232. English lang. assess.
233. English order
234. English part
235. English sign
236. English support
237. English word
238. enjoying
239. enough
240. environment
241. equal
242. equity
243. ESL
244. even if
245. every angle
246. every class
247. every day
248. every district
249. every month
250. every person
251. every three months
252. every year
253. everybody
254. everyone
255. exclude
256. exempt
257. exit
258. expand
259. expanded on
260. expanding
261. expect
262. expectation
263. experience
264. explain
265. expose
266. exposing
267. exposure
268. express
269. expressing
270. expressive
271. expressive language
272. extra
273. eyes on
274. facial expression
275. factors
276. family
277. feedback
278. feel
279. fight
280. figure it out
281. finally
282. finally bought
283. find
284. fit-needs

285. fits
286. flexibility
287. fluent
288. fluently
289. focus
290. focus on
291. follow along
292. for English
293. formal
294. formal change
295. formally trained
296. fortunate
297. framework
298. freshmen
299. from scratch
300. frustrating
301. fully deaf
302. functional
303. future
304. general
305. gestures
306. get them
307. gets it
308. give it a try
309. goal
310. goals
311. grab
312. grade
313. grade level
314. group
315. grown
316. growth
317. gut feeling
318. Hands Land
319. handshape
320. have to
321. haven't started
322. hearing
323. hearing access
324. hearing aid
325. hearing aides
326. hearing assistant
327. hearing classroom
328. hearing community
329. hearing difference
330. hearing people
331. hearing schools
332. hearing screenings
333. hearing staff
334. hearing students
335. hearing teachers
336. hearing technology
337. hearing world
338. help
339. helped
340. helps
341. hiding
342. high school
343. homework
344. hopefully
345. how much
346. huge change
347. hungry for
348. I bought
349. I purchased
350. I'm paying
351. ideal
352. identification
353. identifies
354. identify
355. identifying
356. IEP
357. if
358. implement
359. implementation
360. important
361. impossible
362. impressed
363. improved
364. improving
365. in English
366. in sign language
367. in the area
368. included
369. inclusion
370. inconsistent
371. incorporate
372. increased
373. individual
374. influences
375. informal
376. instead of
377. instructing
378. instruction
379. instructional accomm.
380. instructional assistant
381. instructional asssitants
382. instructional time
383. integrate
384. integrated campus
385. interact
386. interacting
387. interaction
388. interesting
389. interesting situation
390. interpreter
391. interpreters
392. introduce
393. involved
394. iReady
395. is accessible
396. is not accessible
397. isolated
398. isolation
399. itinerant services
400. justify
401. know
402. label
403. language
404. language development
405. language foundation
406. language plan
407. language skill
408. language support
409. language use
410. languages
411. last year
412. learn
413. learning
414. left
415. let go of
416. letter recognition
417. library
418. linguistic program
419. listen
420. listening
421. listening (with their eyes)
422. little bit
423. little bit different\
424. local area
425. local areas
426. localized
427. location words
428. looking
429. looks like
430. lost
431. low-incidence
432. mad
433. mainstream
434. mainstream program

435. mainstreamed
436. maintaining
437. make my own
438. make sure
439. make things up
440. make up
441. making
442. MAP
443. materials
444. math
445. mic
446. microphone
447. middle school
448. model
449. model class
450. model classroom
451. modelled
452. modelling
453. modify
454. modify everything
455. more
456. more auditory
457. more confident
458. more consistently
459. more expressive
460. more students
461. more training
462. most of the time
463. move forward
464. moving forward
465. multi-disciplinary
466. music
467. naturally
468. necessary
469. need
470. needs
471. negative
472. new concept
473. new program
474. next level
475. next year
476. no consistency
477. no idea
478. no language
479. no one
480. no spoken language
481. no training
482. not
483. not about
484. not accessible
485. not address
486. not benefiting
487. not complex
488. not easy
489. not enough
490. not fluent
491. not generalizable
492. not going to work
493. not interpreting
494. not representative
495. not successful
496. not sure
497. not there
498. not trained
499. notice
500. notice more
501. noticed
502. noticing
503. now
504. number
505. numbers
506. numbers of students
507. observation
508. observations
509. observe
510. observed
511. observing
512. obvious
513. old ideas
514. old ways
515. older
516. one-on-one
517. only
518. open-minded
519. opinions
520. opportunities
521. opportunity
522. oral
523. oral language
524. oral program
525. oral students
526. other students
527. outside services
528. over and over
529. parents
530. part
531. PE
532. people
533. perfect situation
534. philosophy
535. pick
536. pick it up
537. pick up
538. picked it up
539. picking up
540. picture
541. pictures
542. plenty of
543. pointing
544. policy
545. practice
546. practices
547. pragmatics of language
548. prefer
549. pre-made materials
550. pressure
551. pretty good
552. pride
553. problem
554. process
555. profoundly deaf
556. program
557. programs
558. progress
559. progression
560. provide
561. providing training
562. public school
563. pulling out
564. pull-out
565. purchasing
566. pure ASL
567. push for
568. push-in
569. questions
570. quickly
571. range
572. reading
573. reading words
574. real work
575. real world
576. realized
577. really small class
578. really well
579. receptive
580. receptively
581. recognition
582. recognize
583. recognize words
584. recognized

585. recognizing
586. recommendation
587. reduce
588. refer
589. refresher training
590. refuse
591. regional program
592. regional programs
593. regions
594. reliant
595. reports
596. requested
597. requires
598. requiring
599. resistance
600. resistant
601. resources
602. respect
603. respectful
604. responding to
605. response
606. responsible
607. role
608. role models
609. room
610. routines
611. same assessments
612. same problem
613. same team
614. same time
615. school
616. school district
617. school districts
618. school for the deaf
619. science
620. science signs
621. searching-myself
622. see
623. seeing
624. SELPA
625. separate
626. services
627. severely deaf
628. share
629. shared
630. should
631. should know
632. side-by-side
633. sign
634. sign language
635. signed
636. signing
637. signing
638. signing only
639. signing skills
640. signs
641. simultaneous comm.
642. simultaneously
643. situation
644. skill
645. skills
646. SLP
647. small group
648. small groups
649. so much
650. social aspect
651. social studies
652. socialize
653. some schools
654. sounds
655. Spanish
656. speak
657. speak automatically
658. speaking
659. speaking only
660. special ed assistant
661. specific
662. specific assessments
663. specific goal
664. specific situation
665. specific students
666. specific to
667. specific training
668. specifically
669. speech
670. speech therapist
671. spoken
672. spoken English
673. spoken language
674. spoken part
675. spoken Spanish
676. spoken support
677. staff
678. start all over
679. start there
680. struggle
681. struggling
682. stubborn
683. stuck
684. student
685. student needs
686. students
687. students needed
688. summarizing
689. supplemental
690. support
691. support families
692. support instruction
693. support other teachers
694. support the student
695. supporting
696. switched
697. take advantage
698. take control
699. taken off
700. talking
701. talking about
702. teach
703. teacher
704. teacher signing
705. teacher-guided
706. Teacher-Pay-Teachers
707. teachers
708. team
709. team approach
710. tends
711. test
712. that approach
713. the idea
714. the label
715. the role of
716. thematic curriculum
717. theme
718. therapy
719. thinking
720. this year
721. through the eyes
722. to see if
723. together
724. too
725. total communication
726. tough
727. train
728. trained
729. training
730. trial and error
731. triennial assessments
732. trilingual
733. try and find
734. trying

735. two months
736. two-on-one
737. typically
738. understanding
739. understood
740. unfortunately
741. unique
742. until
743. use both
744. used to
745. used to (comfortable)
746. variety
747. VCSL-2
748. verbal
749. very similar
750. videos
751. views
752. visual activities
753. visual arts
754. visual pictures
755. visual resources
756. visual sense
757. visual words
758. visually observant
759. visuals
760. vocabulary
761. voice
762. voice signing
763. voices
764. voicing
765. want
766. wanted
767. wasn't aware
768. whatever
769. which students
770. while
771. whole child
772. whole class
773. whole group
774. whole program
775. willing
776. wish
777. with
778. word
779. word focused
780. words
781. work through it
782. work together
783. work with
784. working
785. world
786. would
787. write
788. writers
789. writing
790. written language
791. young
792. younger grades
793. younger kids
794. zone

Appendix K

Initial Codes: Focus Groups

1. a lot of parents
2. a plan
3. ability to hear
4. able
5. able to
6. able to model
7. able to succeed
8. able to use
9. absorb
10. academic content
11. academic level
12. academic skill
13. academic support
14. academically
15. academics
16. access
17. accommodate
18. acquire new information
19. acquiring
20. add to
21. added work
22. adding
23. adding a second lang.
24. additive approach
25. address it
26. adopted
27. advanced ASL
28. again
29. age group
30. age range
31. aide
32. alignment
33. all adults
34. all come together
35. all deaf
36. all factors
37. all settings
38. all students
39. all the members
40. all understand
41. alongside
42. already developed
43. already have
44. always
45. always ready
46. always simple
47. American Sign Lang.
48. angry
49. another classroom
50. another country
51. another student
52. approach
53. appropriate
54. appropriate assessments
55. appropriate trainer
56. are learning
57. are mainstreamed
58. ask a question
59. ask for
60. ASL
61. ASL assessment
62. ASL concept
63. ASL EST
64. ASL instruction
65. ASL interpreter
66. ASL RST
67. ASL structure
68. ASL student
69. assessment
70. assessments
71. assessments showed
72. assistants
73. assuming
74. at all times
75. at home
76. at least one
77. at my disposal
78. at the same time
79. automatic
80. background
81. backtrack
82. be able to teach
83. be creative
84. be dynamic
85. becoming
86. beforehand
87. being able to catch
88. being adaptive
89. being flexible
90. being successful
91. beneficial
92. benefit
93. benefit from
94. benefit more
95. benefits
96. BGC
97. Bilingual Grammar Curr.
98. bimodal bilingual
99. both languages
100. both of those
101. bucket of resources
102. build relationships
103. build that connection
104. building self-advocacy
105. burden of
106. buy-in
107. campus
108. can communicate
109. can have
110. can learn
111. can see potential
112. can understand
113. can't
114. can't hear
115. catch language
116. certain concepts
117. challenge
118. challenging
119. change
120. children
121. clarification
122. clarification strategies
123. class
124. classes
125. classroom
126. collaborate
127. collaborating
128. collective deaf comm.
129. collective environment
130. combination
131. combination
132. combining
133. comfortable with
134. coming from
135. common ground
136. communication
137. communication accomm.
138. communication boards

139. communication cohort
140. communication skills
141. community
142. complex
143. components
144. comprehension
145. concept
146. concept check
147. concepts
148. confusing
149. confusion
150. connect new info.
151. connect those pieces
152. connecting them
153. connection
154. consecutively
155. constantly
156. contacting resources
157. content
158. context
159. continue to
160. control
161. counsellors
162. create
163. creating resources
164. critical
165. cross over
166. culture
167. curriculum
168. deaf
169. deaf adult
170. deaf adults
171. deaf community
172. deaf education
173. deaf instructor
174. deaf or hearing
175. deaf parents
176. deaf person
177. deaf specific
178. deaf students
179. deaf teacher
180. degree
181. depending on
182. determine
183. develop
184. develop the context
185. developing
186. development
187. dictionary access
188. didn't understand
189. different
190. different ends
191. different groups
192. different language
193. different people
194. different students
195. different style
196. different types of needs
197. difficult
198. discuss
199. discussion
200. diverse needs
201. diversity
202. do not have
203. does benefit some
204. does help
205. doesn't have
206. doesn't necessarily
207. doesn't understand
208. doesn't work
209. don't have
210. don't have access
211. don't have enough
212. don't have experience
213. don't have language
214. don't know
215. don't know what
216. don't know where
217. during
218. during play
219. each student
220. easier to control
221. educators
222. either language
223. ELA
224. ELA support
225. embedded
226. emphasized
227. empower
228. Encore
229. encourage
230. encourage parents
231. encourage students
232. English
233. ensure
234. entire bucket
235. entirely different worlds
236. environment
237. establish a foundation
238. evaluate
239. every day
240. everybody
241. exchange information
242. excluded
243. excluding
244. exclusion
245. exclusively ASL
246. expand concepts
247. expand on
248. expect
249. expect much more
250. experienced
251. experiences
252. explain
253. exposed
254. exposure
255. expressive
256. expressive language
257. fade over time
258. failed
259. family
260. feel
261. figure out
262. fingerspell
263. first thing
264. fluent
265. fluent manner
266. fluently
267. focus on
268. focus on one
269. focuses on skill
270. focusing on
271. for myself
272. for students
273. for support
274. for themselves
275. fortunately
276. foundation
277. foundation of language
278. foundational
279. foundational academics
280. from ASL
281. frustrated
282. frustrations
283. full-day
284. functional-level
285. general concept
286. general education
287. gestures
288. get an idea

289. get an understanding
290. getting by
291. give them everything
292. giving them sign
293. giving them spoken Eng.
294. goal
295. good lang. foundation
296. grade level
297. grand picture
298. grew up oral
299. group goals
300. hand-over-hand
301. hard-of-hearing
302. hard-of-hearing person
303. hasn't caught
304. have information
305. have needs
306. have no support
307. have resources
308. have to
309. have to learn
310. have to navigate
311. having more than one
312. hear the English
313. hearing
314. hearing adult
315. hearing child
316. hearing parents
317. hearing people
318. hearing teacher
319. hearing world
320. heavily leaning
321. help them to retain
322. helps
323. high expectations
324. high school level
325. home in on
326. how to agree
327. how to say
328. how to sign
329. identified
330. identify
331. IEP goals
332. IEP team
333. If
334. important concepts
335. important to teach
336. important words
337. in parallel
338. in the room
339. in the wrong place
340. include
341. information
342. initially starting
343. instead of
344. instruct all
345. instruction
346. instructional
347. instructional aides
348. internal conversation
349. interpreter
350. interpreters
351. intertwining
352. isolating
353. it depends on
354. it's best
355. it's determined
356. it's hard
357. it's really hard
358. itinerant teacher
359. just alone
360. just click
361. just learned
362. just sign
363. just started learning
364. keep up
365. keep up academically
366. knowledge
367. knows ASL
368. language
369. language access
370. language development
371. language is primary
372. language level
373. language preference
374. laptop
375. larger world
376. lead
377. leads to
378. learn
379. learn at home
380. learn both languages
381. learn from
382. learn more
383. learn to use
384. learned
385. learning
386. learning ASL
387. learning center
388. learning through sight
389. leave the classroom
390. left out
391. lesson
392. lesson planning
393. level
394. limited language
395. link
396. lip reading
397. look at
398. looking at
399. losing their hearing
400. love
401. mainstream
402. mainstreamed
403. make connections
404. managing
405. math
406. may have
407. meet the needs
408. meet them
409. memorizing
410. might understand
411. mixed feelings
412. model
413. model language
414. modern deaf education
415. more advanced ASL
416. more appropriate
417. more ASL
418. more developed student
419. more effective
420. more mainstreamed
421. more ready
422. most appropriate
423. most of the kids
424. most of the students
425. mostly
426. mostly deaf assistants
427. move forward
428. much more clear
429. multi-modal
430. multi-modal comm.
431. my point of view
432. my work
433. navigate
434. necessary
435. need
436. need more of it
437. need that instruction
438. need to

439. needed
440. needs
441. never had
442. never learn
443. no actual comprehen.
444. no language access
445. nobody
446. nobody needs to stress
447. not appropriate
448. not as smooth
449. not context
450. not deaf-specific
451. not familiar
452. not fluent
453. not hearing
454. not looking at
455. not reading
456. not really sure
457. not the same as
458. not trained
459. not understand
460. noticed
461. observations
462. observing
463. often
464. on the same page
465. on the spot
466. on their own
467. once they have
468. one language
469. one-on-one
470. online community
471. online dictionary
472. open mind
473. oral
474. oral piece
475. oral program
476. oral teaching
477. other places
478. other program
479. out of my control
480. over time
481. paradigm shift
482. parents
483. part of
484. part of the challenge
485. part of the problem
486. parts of the word
487. people
488. perfect world
489. person who is deaf
490. philosophy
491. phone
492. phonetic awareness
493. phonetics of language
494. phonics
495. pick one
496. pictures
497. population
498. positive
499. potential
500. practicing
501. prefer
502. prefer sign language
503. prefer spoken language
504. preferred language
505. preferred mode
506. prefers sign language
507. prefers spoken English
508. prefixes
509. preschool
510. pretty simple
511. primary
512. primary communication
513. primary focus
514. primary language
515. primary mode
516. prior concept
517. program
518. promote
519. provide
520. provide resources
521. provide that foundation
522. psychologists
523. public school
524. pulled in from
525. pulling alongside
526. pushes into
527. rather than
528. reading
529. reading support
530. ready to learn
531. realized
532. receptive
533. receptive test
534. recognized
535. re-evaluating
536. regardless
537. reinforce
538. remembered
539. remind them
540. repeat
541. repeat back
542. repeatedly
543. required to clarify
544. requires
545. resource
546. resources
547. responsibility
548. retain it longer
549. revert back
550. robust materials
551. role model
552. rules
553. same information
554. same level of support
555. same time
556. sandwich
557. sandwiching
558. school
559. school environment
560. science
561. SDC classroom
562. second language
563. see how it goes
564. see it
565. seeing visually
566. seen the words
567. self-advocacy
568. self-advocacy skills
569. separate
570. separation of
571. several instructional aides
572. several students
573. several teachers
574. showing them
575. sign
576. sign fluently
577. sign language
578. sign language checklist
579. sign language part
580. sign skills
581. signed
582. signed English
583. signing
584. signing ability
585. simultaneously
586. situation
587. SKI-H
588. Skills

589. skills to interpret
590. small group
591. small groups
592. social science
593. socialization
594. socialization skill
595. some of them
596. some staff
597. some students
598. something missing
599. sometimes
600. sound
601. sounds
602. speak
603. speak English
604. speak or
605. speak with
606. speaking
607. speaking English
608. speaking skills
609. specific order
610. spectrum
611. speech
612. speech pathologist
613. speech staff
614. speech therapist
615. speech-language ther.
616. spoken
617. spoken ASL
618. spoken English
619. spoken language
620. spoken language conv.
621. spoken piece
622. spread out
623. staff
624. staff shortage
625. started learning
626. starting to learn
627. starting with
628. sticky situation
629. still learning
630. strong
631. struggle
632. struggle with
633. struggling
634. struggling to find
635. student
636. student assessments
637. student group
638. student's preferred lang.
639. students
640. suffixes
641. support
642. support parents
643. support students
644. supports
645. surface information
646. system
647. take classes
648. take control
649. take on
650. talking
651. teach
652. teach language
653. teach writing
654. teacher
655. teachers
656. teaching
657. teaching environment
658. teaching issue
659. teaching me
660. tensions
661. that burden
662. that environment
663. that part
664. their job
665. those specifics
666. those students
667. those that use ASL
668. Thrive
669. Thriving
670. through ASL
671. through language
672. through speaking
673. throughout
674. to facilitate
675. to help
676. to learn
677. to some degree
678. Total Communication
679. try to
680. trying to
681. trying to navigate
682. tutor
683. two programs
684. two worlds
685. two-pronged
686. typically
687. understanding
688. unfortunately
689. unique situation
690. unpack
691. unpacked
692. until
693. use both modes
694. use the interpreters
695. used to (comfortable)
696. using ASL
697. utopia
698. VCSL-2
699. very capable
700. very few deaf
701. very high levels
702. very isolating
703. video
704. visual
705. visual demonstration
706. visual from birth
707. visual language
708. visual phonics
709. vocabulary
710. vocabulary development
711. want
712. wanted
713. was taught
714. what they understood
715. what will happen
716. when appropriate
717. when needed
718. which one
719. whole class
720. whole word
721. wide range
722. will help
723. with everyone
724. with students
725. within
726. without realizing
727. won't understand
728. work on
729. working on
730. working toward
731. working with
732. would benefit
733. would look like
734. wouldn't matter
735. write
736. writing piece
737. written

738. yet
739. young children
740. young kids

Appendix L

Secondary Codes: Interviews

1. ability
2. access
3. accountable
4. adding
5. address
6. Administrator
7. adopting
8. agreement
9. allow
10. possibilities
11. approach
12. appropriate
13. ask questions
14. assumptions
15. audition
16. time
17. sentiments
18. beliefs
19. benefits
20. bilingual
21. bimodal
22. both
23. boundaries
24. brainstorm
25. challenges
26. change
27. classroom
28. communication
29. comprehension
30. comparatives
31. concept
32. technology
33. connected
34. consistency
35. culture
36. curriculum
37. deaf
38. deaf education
39. decisions
40. conditional
41. development
42. absence of
43. disability
44. diversity
45. distracting
46. documentation
47. effective
48. English
49. environment
50. equity
51. exclude
52. expand
53. expectation
54. experience
55. expressive
56. factors
57. family
58. feedback
59. notions
60. searching
61. fit (needs)
62. flexibility
63. fluent
64. formal
65. framework
66. future
67. general
68. goal
69. group
70. growth
71. hearing
72. help
73. self-invested
74. ideal
75. identification
76. IEP
77. implementation
78. important
79. inclusion
80. in contrast
81. instruction
82. interaction
83. label
84. language
85. learning
86. listening
87. local
88. insurances
89. self-create
90. model
91. modifications
92. comparatives
93. natural
94. needs
95. quantitative
96. opportunity
97. practices
98. provide
99. receptive
100. recommendation
101. resistance
102. resources
103. respect
104. responding to
105. simultaneously
106. services
107. sign language
108. specific to
109. spoken language
110. staff
111. student
112. support
113. team
114. training
115. trial and error
116. visuals
117. vocabulary
118. wants
119. world
120. written language

Appendix M

Secondary Codes: Focus Groups

1. academics
2. access
3. acquiring
4. added work
5. additive approach
6. address it
7. adopt
8. age group
9. alignment
10. all factors
11. appropriate
12. assessment
13. automatic
14. being successful
15. beneficial
16. both of those
17. can have
18. challenging
19. change
20. clarification strategies
21. classes
22. collaborating
23. combining
24. communication
25. community
26. concepts
27. confusing
28. connection
29. content
30. context
31. create
32. curriculum
33. deaf
34. discussion
35. diversity
36. don't have
37. don't know
38. English
39. environments
40. everybody
41. everything
42. experienced
43. exposure
44. family
45. figure out
46. fluently
47. focusing on
48. for myself
49. fortunately
50. foundation
51. frustrated
52. group goals
53. have to
54. hearing
55. helps
56. high expectations
57. how to agree
58. how to say
59. importance
60. information
61. instruction
62. isolating
63. keep up
64. lacking
65. language
66. leads to
67. learn
68. lesson
69. levels of development
70. look at
71. mainstream
72. making decisions
73. managing the classroom
74. meets the needs
75. modes of communication
76. navigating
77. needs
78. nobody
79. observations
80. perfect world
81. perspectives
82. promotes
83. provide
84. rather than
85. regardless of
86. remembered
87. repeatedly
88. requires
89. resources
90. responsibility
91. self-advocacy skills
92. SELPA
93. separate
94. sign language
95. simultaneously
96. skills
97. socialization
98. spoken language
99. staff
100. staff shortage
101. struggle
102. student
103. teach
104. the IEP
105. the system
106. time references
107. training
108. try to
109. understanding
110. used to (comfortable)
111. visual
112. vocabulary
113. want
114. when
115. work on
116. worlds

Appendix N

Initial Themes: Interviews

1. supporting parents to improve student outcomes
2. addressing staff biases
3. lack of ASL resources
4. lack of ASL assessments
5. Deaf adult ASL role modes increase student ASL language fluency
6. self-advocacy skills are embedded within all instruction
7. each student is unique
8. ASL is an accessible language for all deaf students; spoken language is not
9. providing visual supports comprehension
10. deaf students need to be around other deaf students
11. staff training is essential before a change is expected
12. district administrators need to understand the unique needs of deaf students
13. situational contexts for teaching and learning
14. how educators address diverse student needs in the classroom
15. desire for a thematic deaf-centered curriculum
16. education continues at home with the family
17. creating safe deaf spaces in the classroom
18. inclusive approaches to addressing speech in the classroom
19. related services happen in the classroom
20. there is never enough time
21. administrators need to, literally, buy-in
22. ASL creates common ground among the deaf and the hearing
23. Building language and vocabulary is the focus of all learning
24. “Seeing is believing,” training and coaching staff in context is the key to buy-in

Appendix O

Initial Themes: Focus Group

1. Educators face similar challenges implementing bimodal bilingual pedagogy
2. How educators address diversity in the classroom
3. Navigating challenges
4. Instructional environments
5. Self-advocacy skills are embedded in all instruction
6. Parent involvement is critical to language development
7. Students are all at various levels of development
8. Common instructional strategies for teaching
9. Students' backgrounds and experiences play a crucial role in learning a language
10. The content of instruction is focused on language through math, science, and social sciences
11. Managing the classroom for the inclusion of diverse deaf students
12. Even given ASL, some students develop a natural preference towards spoken language
13. Educators need a robust curriculum
14. Education should continue in the home environment through supporting parents
15. Speech services are more beneficial as push-in rather than pull-out services
16. Assessment materials for ASL expressive and receptive skills are limited
17. Educators are not always fluent in ASL
18. Training is desired but limited
19. Collaboration among all members of the IEP team is critical to the student's success
20. Most educators use the IEP as a language and communication plan for deaf students

Appendix P

Final Themes

1. To address the broad spectrum of student diversity in classrooms, educators leverage small group or individual instruction to prioritize language and vocabulary development while providing ample visual supports and regularly embed self-advocacy skills as needed.
2. ASL is the most accessible language for deaf students from birth, making it the ideal primary language for whole-group instruction in the classroom to build a solid linguistic foundation, regardless of individual language preferences.
3. Educators must collaborate to prioritize Deaf students' language needs, leveraging push-in services, honoring individuality, promoting student involvement in discussions of inclusion and equity, and providing access to Deaf adult role models, rather than prioritizing social integration in isolated mainstream environments.
4. Educators need active, collaborative coaching to effectively incorporate both ASL and spoken English into whole-group instruction to accommodate language-diverse students.
5. Schools need to provide accessible resources to families that enable active participation in the deaf child’s education, creating a bilingual or multilingual, deaf-friendly space for continued learning in the home.