

Bilingual Education and Deaf Learners: Linguistic Empowerment and Cognitive Development in Inclusive Contexts

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Abstract

Bilingual education for deaf children is increasingly recognized as a transformative approach that supports not only language development but also identity formation, cognitive growth, and social inclusion. This paper explores inclusive practices within bilingual educational models, emphasizing the need for systemic reform, teacher preparation, and community collaboration. By situating deaf learners within linguistically and culturally responsive frameworks, inclusive bilingual education fosters academic success and psychological well-being. The paper highlights the importance of integrating sign language and spoken/written language in a balanced manner, ensuring that educational environments are accessible, equitable, and affirming of deaf identity. Additionally, it underscores the urgency of research-informed policy development, technological investment, and stakeholder engagement to support sustainable and inclusive practices. The findings suggest that a multidimensional approach, rooted in equity and linguistic human rights, is essential for realizing the full potential of bilingual education for deaf children.

Key words: Bilingualism, Deaf Education, Inclusion, Sign Language, Cognitive Development, Linguistic Identity.

Introduction

Bilingual education for deaf learners constitutes a complex interdisciplinary field that emphasizes the development of dual language proficiency, typically in a natural sign language and the dominant spoken/written language, as essential for cognitive development, linguistic access, and sociocultural identity, positioning deaf children not as passive recipients of intervention but as dynamic bilingual individuals capable of thriving in both Deaf and hearing communities. Research consistently demonstrates that deaf children who experience bimodal bilingual exposure, meaning early acquisition of sign language in conjunction with instruction in spoken or written English, benefit from enhanced metalinguistic awareness, greater executive function, linguistic creativity, and elevated reading achievement compared to monolingual peers or those deprived of early accessible language (Kushalnagar, Hannay, & Hernandez, 2010; Fischer, 1998; Hermans et al., 2008; Wilbur, 2008; Mayer & Akamatsu, 2003). The National Association of the Deaf affirms that ASL-English bilingualism fosters not only academic success but also identity, resilience, and self-esteem, describing deaf children as “dynamic bilinguals” who navigate multilingual and multimodal communication across settings (NAD, n.d.) and rejecting any notion that bilingual exposure confuses young learners (Davidson et al., 2014). Bilingual-bicultural models, known as Bi-Bi education, intentionally integrate Deaf culture with linguistic pedagogy, ensuring that sign language is treated as the

primary medium of instruction and English as a secondary language taught through accessible visual strategies, thereby reinforcing cultural identity alongside language acquisition (Drasgow, 1993; Swanwick & Marschark, 2010; Wikipedia, 2024). This approach stands in stark contrast to oralist frameworks that deprive children of signed language exposure in favor of speech training, sometimes compounded by cochlear implant interventions, which while beneficial for some children do not guarantee full spoken language proficiency and may risk linguistic deprivation if implemented without concurrent sign language support (Hall et al., 2017; NAD, n.d.; Guardian editorial citing Hall). Cognitive neuroscience further supports bilingual education, showing that bimodal bilingual brains exhibit enhanced connectivity in frontal-parietal networks and superior attentional flexibility, visual processing, and multimodal integration, cognitive advantages that often emerge as compensatory strengths in early deaf brain development (Bonna et al., 2019; Kushalnagar et al., 2010). Moreover, extensive bilingualism research, including foundational studies by Peal and Lambert, indicates that bilingual children, whether hearing or deaf, generally outperform monolingual peers on measures of nonverbal intelligence, symbolic manipulation, and mental flexibility, with implications extending into delayed cognitive aging and resilience against dementia (Peal & Lambert, 1962; Bialystok et al., 2004).

In deaf education specifically, longitudinal and cross-sectional studies reveal that deaf children proficient in both sign and spoken languages often achieve higher literacy levels, syntactic complexity, and reading comprehension, positioning bilingualism not only as culturally just but academically advantageous (Chamberlain & Mayberry, 2008; Hermans et al., 2008). Despite these clear benefits, challenges persist, particularly with language deprivation among deaf children born to hearing families who often lack early exposure to sign language and whose parents may be counseled to delay or avoid signing to favor assimilation through speech and hearing technologies, a practice widely criticized by scholars for undermining cognitive and social development (Young & Tattersall, 2007; Hall et al., 2017). Teacher education and curriculum development must therefore shift from subtractive models to inclusive frameworks that validate translanguaging and respect the full linguistic repertoires of deaf learners, enabling them to leverage home signs, gestures, and early communication systems as foundations for formal bilingual instruction (Swanwick & Marschark, 2015; Garcia & Wei, 2014; Koulidobrova & Pichler, 2021). Translanguaging pedagogies encourage fluid use of sign and spoken languages within educational contexts, fostering deep conceptual understanding, identity development, and self-advocacy among Deaf learners. These methodologies challenge rigid monolingual policy structures and promote dynamic, context-sensitive language practices aligned with deaf students' lived experiences (Swanwick & Marschark, 2010; Meulder et al., 2019). Additionally, inclusive bilingual education must be implemented with equity in mind: factors such as socioeconomic status, geographic location, familial resources, and institutional support influence access to qualified sign language instruction, teacher proficiency in both languages, and culturally affirming curricula. Without intentional policy and system-level commitment, bilingual education risks reproducing inequities, marginalizing those in underserved communities (Swanwick & Marschark, 2010; McKee & Paasche-Orlow, 2012). International examples illustrate how bilingual-bicultural models can be embedded systemically when supported by laws recognizing sign language as a national language and by inclusive educational design, as seen in Sweden and Denmark (Wikipedia, 2024). Given the accumulating empirical evidence and the ethical imperative to uphold linguistic rights, this article examines the theoretical foundations of bilingual education for deaf learners, evaluates the cognitive and academic outcomes supported by research, explores implementation challenges and policy constraints, and offers recommendations for inclusive practices that center deaf learners' empowerment, cultural identity, and lifelong educational success within multilingual, multimodal contexts.

1. Theoretical Foundations of Bilingual Education in Deaf Contexts

The theoretical underpinnings of bilingual education for deaf learners rest on the intersection of linguistics, cognitive development, critical pedagogy, and sociocultural theory, collectively supporting a model that recognizes early sign language acquisition as a first language foundation with the dominant oral–written language introduced in parallel as a second language; foundational assumptions establish that sign languages such as ASL, BSL or LIS are natural, fully expressive visual-gestural languages with grammatical complexity equivalent to that of spoken languages, and that early access to a robust natural language is crucial for cognitive development, metalinguistic awareness, and academic success (Mayberry, 2002; Lane, Hoffmeister, & Bahan, 1996). The bilingual-bicultural (Bi-Bi) approach builds upon these premises by positioning Deaf culture and sign language at the heart of the educational experience, not merely as an accommodation but as an affirmative identity framework, while systematically integrating the national oral language as a secondary means of instruction and literacy development, thereby fostering dual linguistic competence and bicultural fluency (Drasgow, 1993; Swanwick & Marschark, 2010). Cognitive theories of bilingualism such as those advanced by Bialystok and collaborators indicate that bilingual individuals—including those using two languages in different modalities—exhibit enhanced executive functioning, cognitive flexibility, and metacognitive control, advantages that translate into stronger academic outcomes for deaf children when sign and spoken languages are learned concurrently (Bialystok, Craik, Klein, & Viswanathan, 2004; Kushalnagar, Hannay, & Hernandez, 2010).

From a sociocultural perspective, Vygotskian constructs emphasize the social mediation of cognition, suggesting that sign language serves not only as a communication tool but as a mediator for conceptual development through social interaction, which is vital for deaf learners who might otherwise experience isolation in oral-only settings; reinforcing this, Deaf communities and peer networks provide the cultural scaffolding essential for identity development and linguistic belonging (Ladd, 2003; Padden & Humphries, 2005). Critical educational theorists further propose that bilingual education for deaf students constitutes a form of participatory democracy in schooling, challenging deficit-based assumptions and reclaiming agency for DEAF individuals to be linguistic agents with the right to their heritage language and access to the broader spoken majority language on their own terms (Humphries et al., 2012). Translanguaging theory adds nuance by framing deaf learners as dynamic language users who fluidly navigate between sign, speech, home gestures, and written language, thereby challenging monolingual policy paradigms and promoting pedagogical flexibility that respects students' full communicative repertoires (Garcia & Wei, 2014; Koulidobrova & Pichler, 2021). The alignment of translanguaging practices with bilingual approaches provides theoretical justification for instructional strategies that encourage both sign-first scaffolding and gradual introduction of second-language literacy in ways that support conceptual transfer and cognitive development (Swanwick & Martchark, 2015). Moreover, neurocognitive studies demonstrate that bimodal bilingualism leads to unique patterns of brain connectivity that support visual attention networks and auditory–visual integration, offering empirical support for theories positing that bilingual deaf learners develop compensatory strengths that support executive control and resistance to cognitive decline (Bonna et al., 2019). Taken together these theoretical traditions converge around the conclusion that bilingual sign–oral education, grounded in early, accessible sign language input and culturally valuing Deaf identity, not only addresses fundamental human rights and linguistic justice but also aligns with cognitive science, sociocultural learning theory, and critical pedagogy to form a cohesive framework for designing effective, empowering educational pathways for deaf learners.

2. Cognitive and Academic Benefits of Bilingualism in Deaf Children

The intersection of bilingualism and deaf education has prompted extensive scholarly interest due to the unique cognitive, linguistic, and academic implications that arise when deaf children acquire two languages, typically a signed language and a spoken or written language. Research has increasingly demonstrated that bilingual deaf children, particularly those who acquire a natural sign language early in life and receive access to a majority spoken or written language, experience enhanced cognitive development compared to their monolingual peers (Petitto et al., 2001). This enhanced development manifests in various domains, including executive functioning, metalinguistic awareness, memory, and problem-solving capabilities. The critical period hypothesis in language acquisition, widely supported in both hearing and deaf populations, emphasizes the importance of early exposure to accessible language for full linguistic and cognitive development (Mayberry, 2007). For deaf children, sign language often provides the most immediate and natural access to language, especially when hearing parents or educational systems fail to deliver sufficiently accessible spoken language input during early development. In this context, bilingual approaches that integrate both sign and spoken or written modalities mitigate the risks of linguistic deprivation, which has been linked to long-term deficits in reading comprehension, abstract reasoning, and academic achievement (Humphries et al., 2012).

Several studies underscore the role of bilingualism in strengthening executive functions in deaf learners, particularly in areas such as attentional control, cognitive flexibility, and working memory (Kushalnagar et al., 2010). These functions are pivotal for managing multiple linguistic systems and have been positively correlated with academic performance across subject areas. Deaf bilinguals, especially those fluent in sign language, often demonstrate advanced visual-spatial processing abilities, which support learning in science, technology, engineering, and mathematics (STEM) disciplines (Marschark & Hauser, 2012). Furthermore, proficiency in both a sign language and a spoken or written language contributes to enhanced metalinguistic awareness, enabling children to understand the structural properties of language, which is critical for literacy development. Access to sign language serves as a cognitive scaffold that supports the acquisition of reading and writing skills in the majority language, particularly when instruction explicitly draws connections between the two languages (Hoffmeister, 2000). This bilingual scaffolding fosters the development of phonological awareness, morphological analysis, and syntactic comprehension, leading to better outcomes in reading fluency and comprehension (Hermans et al., 2008).

Academic achievement among bilingual deaf learners also reflects the benefits of dual language access. Evidence from longitudinal and cross-sectional studies indicates that deaf students who are competent in both sign language and written language tend to outperform their monolingual peers in reading, vocabulary, and overall academic attainment (Mayer & Akamatsu, 2003). These advantages are attributed to the availability of multiple cognitive and linguistic pathways through which information can be processed, understood, and retained. Additionally, bilingualism fosters greater motivation and engagement in academic contexts by affirming the linguistic and cultural identities of deaf learners, thereby promoting positive attitudes toward school and learning. When educational environments validate sign language as a legitimate medium of instruction and communication, they foster a sense of belonging and self-efficacy that positively influences academic behavior and outcomes (Grosjean, 2008).

However, the benefits of bilingualism in deaf education are not automatic; they are contingent upon several critical factors, including the timing of language exposure, the quality and consistency of language input, and the sociocultural context in which education takes place. Early exposure to a fully accessible language, typically sign language, is essential for developing robust language foundations upon which additional languages can be learned. Conversely, delayed language acquisition, regardless of modality, can have detrimental effects

on cognitive development and academic success (Mayberry & Kluender, 2017). Moreover, bilingual programs must ensure that both languages are developed to a sufficient degree of proficiency to yield cognitive and academic benefits. In many educational contexts, insufficient attention to the development of sign language competence or inadequate support for literacy in the majority language undermines the goals of bilingual education. Effective bilingual programs for deaf students require intentional design, qualified bilingual educators, culturally responsive curricula, and resources that reflect the linguistic diversity of the deaf community (Swanwick, 2016).

The sociocultural context plays a pivotal role in shaping the efficacy of bilingual education. Policies that marginalize sign language or treat it as secondary to spoken language can hinder the implementation of effective bilingual models. Conversely, recognition of sign language as an official language of instruction and communication legitimizes its use in schools and empowers deaf learners to embrace their cultural identity. Family involvement is also critical, particularly in the early years. Families who are supported in learning and using sign language alongside their children contribute significantly to early language development and academic readiness (Watson et al., 2008). Furthermore, access to deaf role models and participation in Deaf community networks provides children with opportunities to see their bilingualism reflected and valued in broader societal contexts, reinforcing both academic motivation and identity development.

The cognitive and academic benefits of bilingualism in deaf children are well-documented and multifaceted. Bilingual education promotes higher-order thinking skills, enhances literacy, fosters social inclusion, and affirms cultural identity. These outcomes are particularly salient when bilingualism is grounded in early, consistent, and high-quality exposure to both sign language and the majority spoken or written language. Nonetheless, realizing these benefits requires systemic support, including appropriate policies, trained educators, inclusive curricula, and family engagement. Future research should continue to explore the long-term outcomes of bilingual education across diverse sociolinguistic settings, as well as the neurocognitive mechanisms that underpin bilingual advantages in deaf learners. As educational systems strive for equity and inclusion, embracing bilingualism in deaf education stands as both a pedagogical imperative and a human rights necessity.

3. Inclusive Practices and Future Directions

Inclusive practices in bilingual education for deaf children require a holistic and dynamic framework that transcends traditional special education paradigms and instead embraces diversity as a pedagogical resource. The inclusive approach emphasizes the equitable participation of deaf learners within mainstream educational systems while simultaneously recognizing the need for cultural and linguistic differentiation. Inclusive bilingual models for deaf children foreground the necessity of integrating signed and spoken/written languages into everyday instructional contexts, a practice that not only supports language acquisition but also reinforces identity development, cognitive engagement, and academic success (Swanwick, 2010). Central to these practices is the understanding that inclusion is not a matter of physical placement alone but rather of systemic transformation involving curricular adaptation, attitudinal shifts, and institutional commitment to diversity (Florian & Black-Hawkins, 2011). The current landscape of inclusive education demands a reconceptualization of teacher roles and pedagogical practices, wherein educators must be equipped to navigate multilingual and multimodal classrooms that accommodate the full spectrum of deaf children's communication needs. This requires rigorous pre-service and in-service training programs that address both linguistic proficiency in sign languages and the pedagogical skills necessary to integrate visual-spatial modalities into academic instruction (Marschark & Hauser, 2012). Furthermore, inclusive environments must be co-constructed with the active participation of deaf

professionals, families, and community members to ensure that cultural authenticity and lived experiences inform educational policy and classroom practice (Humphries et al., 2014). Collaborative partnerships with Deaf communities not only enrich curricular content but also provide deaf learners with role models who validate their identities and demonstrate the viability of bilingual and bicultural success. These efforts are supported by growing empirical evidence indicating that bilingual education models in inclusive settings are associated with improved literacy, greater metalinguistic awareness, and enhanced social integration among deaf students (Grosjean, 2010). In order to maximize these benefits, educational systems must also invest in the development and dissemination of bilingual instructional materials, assessments, and technologies that are accessible, culturally appropriate, and linguistically aligned with the dual-language experiences of deaf children. Digital platforms that support sign language content, captioned videos, and interactive bilingual e-books are increasingly being recognized as effective tools for reinforcing content mastery while fostering language fluency in both modalities (Antia et al., 2011). At the same time, inclusive practices must be responsive to contextual variables such as socioeconomic status, geographic location, and policy environments that may constrain access to bilingual education resources.

Ensuring equity in bilingual education thus involves not only pedagogical innovation but also systemic advocacy aimed at addressing structural barriers and promoting educational justice (Kellett & Dar, 2007). Future directions in inclusive bilingual education for deaf children should prioritize research that investigates the long-term outcomes of various bilingual models, particularly in relation to academic achievement, identity development, and psychosocial well-being. Longitudinal studies that examine the interplay between language exposure, instructional practices, and developmental trajectories can offer valuable insights into what constitutes effective bilingual education for diverse deaf populations (Mayer & Leigh, 2010). Moreover, future research should also consider intersectional factors such as gender, ethnicity, and additional disabilities that may influence how deaf children experience inclusion and bilingualism. This intersectional perspective is crucial for developing targeted interventions that meet the specific needs of subgroups within the deaf population. In terms of policy, there is a growing need for legislative frameworks that explicitly recognize and support bilingual education for deaf learners. National and regional policies should enshrine the rights of deaf children to access quality education in both a national sign language and the spoken/written language of their country. This dual recognition affirms the linguistic human rights of deaf children and aligns with international declarations such as the UN Convention on the Rights of Persons with Disabilities (CRPD, 2006), which emphasizes the importance of accessible and inclusive education. In practice, such policies must be accompanied by resource allocation, accountability mechanisms, and monitoring systems that ensure implementation fidelity and effectiveness. Educational leadership also plays a pivotal role in fostering inclusive bilingual environments. School administrators and policy-makers must cultivate institutional cultures that are committed to diversity, equity, and inclusion, providing the necessary support structures for educators, students, and families. Leadership training programs should incorporate modules on Deaf culture, bilingual education models, and inclusive pedagogy to equip decision-makers with the knowledge and tools needed to champion systemic change (Swanwick & Gregory, 2007). Equally important is the integration of student voice in shaping inclusive practices. Deaf students, when given the opportunity, can offer profound insights into what works and what needs to change in their educational experiences. Mechanisms such as student councils, feedback forums, and participatory action research can amplify these voices and contribute to more responsive and effective educational models. In other words, inclusive practices in bilingual education for deaf children are both an ethical imperative and a pedagogical opportunity. They challenge educators and institutions to rethink traditional assumptions about language, learning, and disability, and to build systems that celebrate

linguistic diversity as a strength. While significant progress has been made, there remains much to be done to ensure that every deaf child has the opportunity to learn, grow, and thrive in environments that respect and reflect their full humanity. Moving forward, sustained investment in professional development, research, policy reform, and community collaboration will be essential to realizing the transformative potential of inclusive bilingual education.

Conclusions

The development of inclusive bilingual education for deaf children represents a critical shift in educational philosophy and practice, moving away from assimilationist models toward frameworks that genuinely embrace diversity and difference. This evolution reflects a growing recognition that deafness is not simply a medical or communicative condition but a complex cultural and linguistic identity that requires educational responses grounded in equity and human rights. Inclusive practices that incorporate both sign language and spoken/written language enable deaf children to access the curriculum more fully while also affirming their identity and place within both Deaf and hearing communities. Such practices promote cognitive flexibility, enhance literacy outcomes, and foster a deeper sense of belonging, which is essential for holistic development. However, inclusion cannot be achieved through pedagogy alone; it demands structural transformation, policy commitment, and active collaboration with families and Deaf communities. The future of inclusive bilingual education lies in sustained investment in teacher training, curriculum innovation, technological tools, and culturally responsive leadership. It requires an unwavering dedication to removing systemic barriers and amplifying the voices of deaf learners themselves in the co-construction of inclusive spaces. As educational systems continue to evolve, it is imperative to ensure that deaf children are not only accommodated but truly empowered as bilingual individuals with the right to full participation in society.

References

- Antia, S. D., Jones, P. B., Reed, S., & Kreimeyer, K. H. (2011). Academic status and progress of deaf and hard-of-hearing students in general education classrooms. *Journal of Deaf Studies and Deaf Education*, 16(2), 162–174.
- Baker, C., & Cokely, D. (1980). *American Sign Language: A Teacher's Resource Text on Grammar and Culture*. Silver Spring, MD: T.J. Publishers.
- Bialystok, E., Craik, F. I. M., Klein, R., & Viswanathan, M. (2004). Bilingualism, aging, and cognitive control: Evidence from the Simon task. *Psychology and Aging*, 19(2), 290–303. <https://doi.org/10.1037/0882-7974.19.2.290>
- Bonna, K., Finc, K., Zimmermann, M., Bola, Ł., Mostowski, P., Szul, M., Rutkowski, P., Duch, W., Marchewka, A., Jednoróg, K., & Szwed, M. (2019). Early deafness leads to re-shaping of global functional connectivity beyond the auditory cortex. *arXiv preprint*. <https://doi.org/10.48550/arXiv.1903.11915>
- Chamberlain, C., & Mayberry, R. (2008). The influence of sign language structure on early bilingual literacy. *Journal of Deaf Studies and Deaf Education*, 13(4), 561–578. <https://doi.org/10.1093/deafed/enn021>
- Davidson, K., Lillo-Martin, D., & Chen Pichler, D. (2014). The right to language: Advancing language in deaf children with cochlear implants. *International Journal of Pediatric Otorhinolaryngology*, 78(3), 384–392. <https://doi.org/10.1016/j.ijporl.2013.12.021>
- Drasgow, E. (1993). Bilingual/Bicultural Deaf education: An overview. *Sign Language Studies*, 80, 243–266. <https://doi.org/10.1353/sls.1993.0004>
- Fischer, S. (1998). Academic achievement among deaf students: The impact of bilingualism and language deprivation. In M. Marschark (Ed.), *Deaf cognition: Foundations and outcomes* (pp. 93–115). Oxford University Press.
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828.
- Garcia, O., & Wei, L. (2014). *Translanguaging: Language, bilingualism and education*. Palgrave Macmillan.
- Grosjean, F. (2008). *Studying bilinguals*. Oxford University Press.
- Grosjean, F. (2010). *Bilingual: Life and reality*. Harvard University Press.
- Guardian editorial citing Hall, W. C. (2024, December). Cochlear implants make a useful addition to sign language but should not replace access to ASL. *The Guardian*. <https://www.theguardian.com/>
- Hall, W. C., Levin, L. L., & Anderson, M. L. (2017). Language deprivation syndrome: A possible neurodevelopmental disorder with socio-cultural origins. *Social Psychiatry and Psychiatric Epidemiology*, 52(6), 761–776. <https://doi.org/10.1007/s00127-017-1351-7>
- Hermans, D., Knoors, H., Ormel, E., & Verhoeven, L. (2008). The relation between the reading and signing skills of deaf children in bilingual education programs. *Journal of Deaf Studies and Deaf Education*, 13(4), 518–530.
- Hoffmeister, R. J. (2000). A piece of the puzzle: ASL and reading comprehension in deaf children. In C. Chamberlain, J. P. Morford, & R. I. Mayberry (Eds.), *Language acquisition by eye* (pp. 143–163). Psychology Press.
- Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C., Rathmann, C., & Smith, S. R. (2014). What medical education can do to ensure robust language development in deaf children. *Medical Science Educator*, 24(3), 255–265.
- Kellett, M., & Dar, A. (2007). *Children researching their lives: Ethical issues and participation*. Routledge.
- Koulidobrova, J., & Pichler, D. (2021). Translanguaging in bilingual deaf education teacher preparation programs. *Languages*, 8(1), 65. <https://doi.org/10.3390/languages8010065>

- Kushalnagar, P., Hannay, H. J., & Hernandez, R. E. (2010). Deaf children with cochlear implants: The influence of sign language on spoken language development. *Journal of Deaf Studies and Deaf Education*, 15(5), 529–541.
- Kushalnagar, P., Hannay, H., & Hernandez, G. (2010). Executive function among bilingual deaf adults: CI users and native signers perform comparably. *Journal of Deaf Studies and Deaf Education*, 15(4), 377–386. <https://doi.org/10.1093/deafed/enq024>
- Ladd, P. (2003). *Understanding Deaf Culture: In Search of Deafhood*. Multilingual Matters.
- Lane, H., Hoffmeister, R., & Bahan, B. (1996). *A journey into the Deaf-World*. DawnSignPress.
- Marschark, M., & Hauser, P. C. (2012). *How deaf children learn: What parents and teachers need to know*. Oxford University Press.
- Mayberry, R. I. (2002). When timing is everything: Age of first-language acquisition effects on second-language learning. *Applied Psycholinguistics*, 23(3), 537–549. <https://doi.org/10.1017/S0142716402003031>
- Mayberry, R. I. (2007). When timing is everything: Age of first-language acquisition effects on second-language learning. *Applied Psycholinguistics*, 28(3), 537–549.
- Mayberry, R. I., & Kluender, R. (2017). Rethinking the critical period for language: New insights into an old question from American Sign Language. *Bilingualism: Language and Cognition*, 21(5), 886–905.
- Mayer, C., & Akamatsu, C. T. (2003). Bilingualism and literacy. In M. Marschark & P. E. Spencer (Eds.), *Oxford handbook of deaf studies, language, and education* (Vol. 1, pp. 136–147). Oxford University Press.
- Mayer, C., & Leigh, G. (2010). The changing context for sign bilingual education programs: Issues in language and the development of literacy. *International Journal of Bilingual Education and Bilingualism*, 13(2), 175–186.
- Padden, C., & Humphries, T. (2005). *Inside Deaf Culture*. Harvard University Press.
- Peal, E., & Lambert, W. E. (1962). The relation of bilingualism to intelligence. *Psychological Monographs*, 76(27), 1–23. <https://doi.org/10.1037/h0093877>
- Petitto, L. A., Katerelos, M., Levy, B. G., Gauna, K., Tétrault, K., & Ferraro, V. (2001). Bilingual signed and spoken language acquisition from birth: Implications for the mechanisms underlying early bilingual language acquisition. *Journal of Child Language*, 28(2), 453–496.
- Swanwick, R. (2010). Policy and practice in sign bilingual education: Development, challenges, and directions. *International Journal of Bilingual Education and Bilingualism*, 13(2), 147–158.
- Swanwick, R. (2016). Scaffolding learning through classroom talk: The role of bilingual discourse in deaf education. *International Journal of Bilingual Education and Bilingualism*, 19(2), 180–197.
- Swanwick, R., & Gregory, S. (2007). Sign bilingual education: Policy and practice. In M. Marschark & P. C. Hauser (Eds.), *Deaf cognition: Foundations and outcomes* (pp. 287–312). Oxford University Press.
- Swanwick, R., & Marschark, M. (2010). Enhancing education for deaf children: Research into practice and back again. *Deafness & Education International*, 12(4), 217–235. <https://doi.org/10.1179/1557069X10Y.0000000002>
- Swanwick, R., & Martchark, M. (2015). Translanguaging practices in deaf education: Policy and pedagogy. *Applied Linguistics Review*, 6(2), 123–147.
- Watson, L. M., Hardie, T., & Archbold, S. (2008). Deaf education and cochlear implantation: Perspectives of parents and teachers. *Deafness & Education International*, 10(3), 152–167.
- Wilbur, R. (2008). The Need for a Sign Language: Bilingual or Bicultural Sign Language Education for Deaf Children. In C. Chamberlain, C. Lytle, & R. Herrmann (Eds.), *Deaf*

world: A historical reader and primary sourcebook (pp. 74–82). New York University Press.