How Deaf American Sign Language/English Bilingual Children Become Proficient Readers: An Emic Perspective

Judith L. Mounty*, Concetta T. Pucci, Kristen C. Harmon

Gallaudet University

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A primary tenet underlying American Sign Language/English bilingual education for deaf students is that early access to a visual language, developed in conjunction with language planning principles, provides a foundation for literacy in English. The goal of this study is to obtain an emic perspective on bilingual deaf readers transitioning from learning to read to reading to learn. Analysis of 12 interactive, semi-structured interviews identified informal and formal teaching and learning practices in ASL/English bilingual homes and classrooms. These practices value, reinforce, and support the bidirectional acquisition of both languages and provide a strong foundation for literacy.

Relatively few empirical studies on reading and deaf individuals have incorporated a sociocultural perspective related to literacy development in children raised and educated bilingually in American Sign Language (ASL) and English (Bailes, 2001; Crume, 2013; Easterbrooks, 2005; Goldin-Meadow & Mayberry, 2001; LaSasso & Mobley, 1997; Luckner, Sebald, Cooney, Young, & Muir, 2005; Padden & Ramsey, 2000). Rather, much of the focus has been upon reading difficulties and the reasons and causes of these problems (Paul, Wang, Trezek, & Luckner, 2009) and little of the research is focused upon what skilled bilingual deaf students do when they read (Andrews & Zmirowski, 1997; Easterbrooks, 2005). The emic, or insiders’ perspective, of deaf parents and educators of bilingual deaf children has been largely absent in this research (Clark, 1998; Humphries, 2001; Pollio & Pollio, 1991). Notable exceptions in the existing scholarship include the emic focus reflected in Kuntze’s (1998) work on literacy, language, and deaf children; Lieberman, Hatrak, and Mayberry’s (2013) work on eye gaze and deaf parents’ interactions with their young deaf children; and Crume’s (2013) exploration of teachers’ beliefs about and strategies for promoting the equivalent of phonological awareness in ASL with young deaf students.

An emic perspective can provide a holistic view of the “native” processes of the bilingual language acquisition, learning, use, and pedagogy that undergirds English literacy. Despite a growing awareness of the “bilingual advantage” for hearing and especially for deaf children, the widespread adoption of a bilingual approach in deaf education has been hampered by a lack of understanding of the community- and language-based principles available for ASL users in accessing education and print, practices that are fostered in a bilingual environment (Enns, 2006; Goldin-Meadow & Mayberry, 2001; Grosjean, 2008; Hermans, Ormel, & Knoors, 2010; Musselman, 2000; Snodden, 2008). Insights gained through qualitative research, and specifically, the conscious exploration and inclusion of emic perspectives, can and should be a vital part of education planning, particularly in diverse, bilingual, and bicultural settings (Dillon, 2005; Ercikan & Roth, 2006). Alternative epistemologies uncovered by qualitative research bring to light ways of being and knowing that have been historically overlooked or ignored (Madill & Gough, 2008). Native users of languages bring to the classroom setting specific cultural, linguistic, and social knowledge and practices that contribute
strategies for teaching bilingual and bicultural children. Importantly, these emic perspectives on language use also bring to bear discursive practices that empower students who are not language majority students, both hearing and deaf (Freeman, 1994; Thumann-Prezioso, 2005). Through educational opportunities that pay close attention to the development of linguistic and social identities in both languages, “language minority” students see themselves and others as equal citizens in a linguistically and culturally diverse society (Freeman, 1994).

Additionally, in the scholarship on educational practices, consideration of emic perspectives is seen as an important component for preparing culturally responsive educators; reflection on one’s assumptions and attitudes is especially important for educators who teach children culturally different from themselves. The recognition that culture has a profound impact on education and learning and the need for educators to be culturally competent and proficient has been established in the literature (Banks & Banks, 2005; Gay, 2003; Sleeter & Grant, 2006). An ethnographically informed approach to preservice teacher education is potentially transformative in that teachers learn to acknowledge, recognize, and suspend generalizations based upon their own cultural center and experiences. By learning about a culture through the consideration of emic perspectives, teachers demonstrate a commitment to understanding the development of literacy as informed by cultural, linguistic, epistemological, and political diversity (Lenski, Crumpler, Stallworth, & Crawford, 2005, p. 89).

In choosing an emic perspective, we postulated that parents and teachers who have experienced firsthand or at close range what it is like to learn to read in an ASL–English bilingual environment would bring new insights to the design of studies about reading and bilingually reared and educated deaf children. Deaf parents and caregivers, drawing on their own experiences with learning to read, understand how to set up a visually maximized environment for stimulating language and literacy development with their deaf children (Andrews & Zmijewski, 1997; Lieberman et al., 2013). For example, deaf parents use a strategy called chaining, which establishes and maintains eye contact with the child while pointing to a picture or printed word, then fingerspelling the word, and signing the concepts associated with the picture or word (Humphries & MacDougall, 1999–2000). Emic input in research thus taps into the experiences and beliefs of members of the culture or population being studied and can guide the questions or hypotheses to be subsequently explored (Lieberman et al., 2013; Morris, Leung, Ames, & Lickel, 1999; Thumann-Prezioso, 2005).

A premise of bilingual education is that early exposure to an accessible language is the key to developing native-like proficiency in any language, and a solid first language foundation is also critical for the successful acquisition of a second language (Garcia, 2009; Grosjean, 2008; Hakuta, 1990; Mayberry & Lock, 2003). In the case of deaf children, this concept is supported by studies that point to strong correlations between ASL ability and English literacy skill (Freel, Clark, Anderson, Gilbert, Musyoka, & Hauser, 2010; Hermans, Knoors, Ormel, & Verhoeven, 2008; Hoffmeister, 2000; Hoffmeister, DeVillers, Engen, & Topol, 1997; Mayberry & Chamberlain, 1994; Padden & Ramsey, 1998; Singleton, Supalla, Litchfield, & Schley, 1998; Strong & Prinz, 1997, 2000). Furthermore, native ASL users often demonstrate more proficient English literacy abilities than deaf children who learn ASL later in life (Mayberry, 2010; Snodden, 2008). These findings suggest that for deaf children with early exposure to both ASL and English, the more accessible language, ASL, may promote development in the less accessible language, that is, English.

However, it is unclear just what it is that fosters English literacy in this population and what needs to be replicated for other deaf children to achieve the same ends. Is it an early language foundation, ASL proficiency, engagement in learning activities that foster metalinguistic awareness, or some combination of these factors? ASL/English bilingual education for deaf students posits that early access to a visual language, ASL, and an environment that equally embraces both languages through the application of language planning principles provides an optimal foundation for literacy (Enns, 2006; Hermans et al., 2010; Regan & Nover, 2010).

Importantly for our purposes in this study, Cummins (2000) claims that transfer between languages is the process that allows bilingual individuals
to learn two languages. Cummins argues that the transfer of conceptual knowledge and skills across languages is based upon a “common underlying proficiency,” or CUP, in which a bilingual person’s proficiency in an L1 and an L2 is interdependent. This theory of linguistic interdependence (Cummins, 2007) supports the notion of a bidirectional feedback loop so that deaf children develop their metacognitive and metalinguistic skills. Within this framework, children are encouraged to stretch beyond their present levels to increase their skills in both languages. Enns (2006) notes that this assumption of two languages that are linked through CUP is significant for bilingual educational programs for both hearing and deaf students, as experience in both languages promotes linguistic development. However, Hermans et al. (2010) suggest that the language acquisition scenarios presented by deaf and hard-of-hearing children pose particular challenges to Cummins’ Linguistic Interdependence Theory.

One possible complication is that Cummins posits that there must be sufficient proficiency in L2 before an individual can draw from their L1 to further develop their L2 skills. Because deaf children typically have restricted access to the spoken form of their L2, which is the language used for reading, CUP would apply to conceptual knowledge and metalinguistic and metacognitive processes but not necessarily to the transfer of vocabulary and grammar. Yet, it is possible to facilitate written language (L2) development for deaf children by capitalizing on their signed language abilities, thereby effecting a cultivated transfer (Hermans et al., 2010, p. 194). To facilitate such transfers, teachers and parents can use chaining to make associations between real-world objects or pictures, signs, finger-spelled words, and print (Humphries & MacDougall, 1999–2000). Another example of cultivated transfer would involve drawing on deaf children’s visual phonological processes in ASL (e.g., vocabulary building through the use of handshape games) to help them understand the phonological patterns in English words (Crume, 2013).

Given the research related to bilingual learning (Enns, 2006), early visual language access (Mayberry & Lock, 2003), and CUP (Hermans et al., 2010), and drawing from a sociocultural perspective (Bailes, 2001), we ask here in this study what insights an emic perspective can provide regarding the ways in which deaf children become successful readers. Participants in this study were teachers and parents who, using an ASL/English bilingual approach, had fostered and observed children’s progression to skilled reading development. A grounded theory method was used to answer our research question.

Within this emic perspective and grounded theory framework, we sought participants’ perspectives on how deaf children develop the basic building blocks necessary to be able to “read to learn” as expert readers.

**Research question.** What are the strategies and indicators associated with ASL/English bilingual deaf children’s transition from “learning to read” to “reading to learn”?

**Method**

**Participants**

We sought to identify deaf parents and teachers who were bilingual in ASL and English and familiar with the principles of bilingual education for deaf children to provide an emic perspective on how deaf students become proficient readers and arrive at the stage where they are reading to learn. A snowball sampling technique was used to identity participants who were parents and teachers of deaf students. Snowball sampling is used with populations that are low incidence or difficult to find. In this approach, the researchers contact an individual member of the target population and ask that person to help identify additional participants (Rowland & Flint, 2004; Sadler, Lee, Lim, & Fullerton, 2010). In this study, school administrators affiliated with the Center for ASL/English Bilingual Education and Research (CAEBER), headed by Dr. Stephen Nover, now at Gallaudet University, were asked to identify teachers trained in ASL/English bilingual pedagogy and parents of students in these programs who had recently made the transition to proficient reading.

Although our original intent was to obtain the perspectives of adults who grew up deaf as ASL–English bilinguals, our sampling strategy resulted in a more diverse group of participants. A total of 12 participants were identified. Eleven participants were bilingual in
ASL and English as adults. Eight grew up with both languages. Nine were deaf since infancy or childhood, and in one case, since adolescence. The remaining three participants were hearing; one was a Child of Deaf Adults (CODA), one was an interpreter with a deaf spouse and two deaf children, and the third was a hearing mother whose deaf child was a proficient reader (Table 1).

Measures

Video-recorded, semi-structured interviews with follow-up questions were conducted in order to explore the following topics:

- Participants’ knowledge, experience, and perspectives regarding ASL/English acquisition, development, and use;
- The relationship between ASL and English for a bilingual deaf individual;
- Views on the purpose of reading and how those purposes are similar and different for hearing and deaf readers;
- Identification of characteristics of deaf skilled readers;
- Description of the transition period from “learning to read” to “reading to learn”; and
- Beliefs about strategies, activities, and practices that facilitate the development of reading proficiency in bilingual deaf children.

The questions are listed in Appendix A. Each interview required approximately one and one-half hours.

Procedure

Interviews were conducted via videophone to allow virtual face-to-face communication. Each interview was video recorded for later viewing, coding, and transcription.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Hearing status</th>
<th>Gender</th>
<th>Parent</th>
<th>Educator</th>
<th>Personal language background</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Deaf</td>
<td>F</td>
<td>*</td>
<td>*</td>
<td>Deaf parents, grew up with both languages</td>
</tr>
<tr>
<td>002</td>
<td>Hearing</td>
<td>F</td>
<td>*</td>
<td></td>
<td>Learned ASL later</td>
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<tr>
<td>003</td>
<td>Deaf</td>
<td>M</td>
<td></td>
<td>*</td>
<td>Learned ASL and English at an early age</td>
</tr>
<tr>
<td>004</td>
<td>Hearing</td>
<td>F</td>
<td>*</td>
<td></td>
<td>Learned ASL later</td>
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<tr>
<td>005</td>
<td>Deaf</td>
<td>M</td>
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<td></td>
<td>Learned ASL later</td>
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<tr>
<td>006</td>
<td>Hard of hearing</td>
<td>F</td>
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<td></td>
<td>Learned ASL later</td>
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<td>007</td>
<td>Hearing CODA</td>
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<td>Deaf parents, grew up with both languages</td>
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<td>008</td>
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<td>Learned ASL later</td>
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<td>011</td>
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<td>012</td>
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<td>*</td>
<td>Deaf parents, grew up with both languages</td>
</tr>
</tbody>
</table>

Notes. The educator category includes teachers who currently hold administrative roles in deaf schools. Participants who are in both the parent and the educator columns were interviewed primarily from their perspective as parents. *Indicates that the characteristic applies to that participant.
The research team created written English summaries of each interview. Additionally, each transcription was reviewed by the participants to confirm the veracity of the transcription as part of the member-checking process (Borum, 2007; Charmaz, 2006). Three of the interviews were also transcribed by a Registry of Interpreters for the Deaf-certified interpreter, who is also a CODA, using a sign-to-voice-to-script process. The goal of this process was to see if additional themes would be identified. As it turned out, there were no differences between the two approaches, so the summaries were determined to be reliable. The research team identified themes and created a codebook. Some themes were recoded to confirm the consistency of the data. Initially, inter-rater reliability was 80%. After several rounds of discussion, raters arrived at full consensus on themes.

Using a constructivist grounded theory protocol (Mills, Bonner, & Francis, 2006), videos and summaries were analyzed to identify emerging themes. This framework was selected because it is an approach used especially in the field of education to generate theory on the basis of information central to the lives of informants (Mills et al., 2006). Constructivist grounded theory provides a framework for identifying emerging theoretical constructs from the participants’ rich responses to the interview questions. Through a process of constant comparison, the research team found that a list of themes emerged early in the data collection (Charmaz, 2006; Creswell, 2009). Reading and reviewing the summaries, the researchers highlighted recurring concepts that were examined, discussed, merged, and refined until consistency was attained. Prevalent themes emerged after approximately seven interviews and were used to code subsequent interviews.

Key themes were identified, further analyzed through a series of discussions between members of the research team, explored through discussions of relevant scholarship, then merged and reconstructed to yield four final themes.

Results

The resulting four themes provide emic perspectives on how deaf children become proficient readers. Theme 1 elaborates on the importance of both ASL and English for deaf children; the bidirectional nature of bilingual language development undergirds reading proficiency. Theme 2 focuses on the ways in which a rich print culture/visual environment supports development of ASL and English. Theme 3 emphasizes that parents and teachers use a variety of strategies/techniques to promote ASL development and reading proficiency. Theme 4 notes the importance of fingerspelling for providing a bridge between ASL and English. Examples are provided below to demonstrate how each theme leads to print literacy and moves the child from “learning to read” to “reading to learn.”

Theme 1: Both ASL and English Are Important for Deaf Children, and the Bidirectional Nature of Their Development Undergirds Reading Proficiency

Participants believed that ASL and English both contribute to deaf children’s language proficiency. Generally, ASL was seen as being the first language and English as the second language. However, participants believed that each language supports the development of the other. They felt that it was their responsibility to provide a strong ASL foundation so that children can acquire English. The participants noted that ASL continues to develop in conjunction with English literacy, and they believed that instruction in both ASL and English helps close the academic gap for deaf students. Several participants indicated that for some children, this process might include spoken English as well.

This bidirectional relationship between the two languages was also illuminated in participants’ descriptions of children becoming skilled readers. One parent described how her daughter initially did not seem to comprehend what she read, but, over time, drew on her ASL skills to make meaning of the written English text, using strategies that allowed her to move back and forth between the two languages. At first, the parent said:

[Participant’s daughter] was decoding, [but] she didn’t know what she was talking about. Then she was decoding and was able to say what she was talking about. And she moved into being able to really understand in a holistic manner. Her translation skills are fantastic—bridging, sign selection, meaning.
The mother continued to describe her child as at first “reading in a literal way, on a word-by-word basis...a long process.” As the child’s reading comprehension increased, while retelling or discussing what she had read in ASL, she would increasingly choose signs that matched the meanings conveyed by words and phrases in a given passage. The mother felt that her child’s reading ability and bilingual competence were reflected in the bridging between two languages by means of careful translation that stayed true to the meaning and context.

A bidirectional feedback loop develops between ASL and English, and this is reflected in students’ gradually increasing automaticity in sign selection to fit the meanings in written texts. This point is illustrated by another participant describing proficient bilingual deaf readers: “They know automatically that ‘I’m reading this word, and normally, somebody would put that sign to it, but that doesn’t work.’” This feedback loop is bidirectional in that reading and writing English were seen as helping to improve ASL skills.

Theme 2: A Print Culture/Visual Environment Supports Development of ASL and English

Most participants specifically made reference to the importance of providing a print-rich culture for ongoing exposure to English. They maintained that consistently displaying and demonstrating the value of a print culture supported deaf children’s development of both ASL and English. They believed that they must “encourage children to read for a variety of purposes and [to] read a variety of materials.” These practices were thought to provide alternative pathways to reading proficiency for deaf children who have less access to incidental learning of English.

Participants saw print as a tool that connects a visual signed language to a spoken/written oral language. One mother recounted how she set up books all around the child’s playpen, immersing her in print long before the child was actually able to read and understand. Parents recounted having reading materials around the house, reading together, modeling/pointing and associating ASL with print, and making sure that the TV always displayed closed captioning. Moreover, one of the participants noted that having a computer in the home was essential because it helped the child practice typing English while writing emails or chatting on Instant Messenger. Browsing the Internet on the computer was seen as another strategy for developing reading skills. Additionally, another participant noted that computers help the child become an independent reader through the use of Internet dictionaries for unknown vocabulary words.

This exposure to a print-oriented culture continued throughout a broad range of activities, including daily bedtime stories, daily journals, and reading newspapers, magazines, books, and comics. Participants remembered long-term reading activities they engaged in and enjoyed as children and used these with their own children. One deaf participant recalled her earliest favorite memory as a four-year-old child, when she and her mother would discuss each item that arrived in the mail. This participant implemented the same daily strategy with her son. Another deaf participant, also a teacher, emphasized that print must be available at all times so that deaf children can apply what they read to their lives. Some participants had experienced difficulty with English literacy, and they noted that their parents did not read much besides magazines and did not engage in activities such as with their child.

For participants, immersing the child in a print environment also included reading the same books repeatedly. Of special interest were Dr. Seuss books, because of their use of visual representation of spelling patterns in rhymes. One participant noted her strategy for drawing the child’s visual attention to common spelling patterns in words through the use of finger-spelling and visual strategies for words like “house” and “mouse,” or “fox” and “box.” She also included body language or facial expressions to emphasize parts of the words.

The importance of a print-rich environment has implications beyond literacy development for the participants. As one parent noted, “Well, [the primary purpose of] reading is to gain information. And then number two, reading is for pleasure. Regardless of why you’re reading, all of those reasons lead to success in life. It gives you access to everything and anything... If you’re not a skilled reader, you’re going to struggle in life.” A deaf father of two deaf daughters who
are strong readers lamented his lifelong struggles in learning to read and develop good English skills. He believed that early exposure to ASL, which ultimately became his primary language, would have helped him. He and his wife had provided their children with early access to both languages. Reading proficiency was seen as a vital tool for success. Participants believed that skilled deaf readers are equipped to compete with hearing peers and achieve occupational and personal goals. A teacher in the study captured the essence of the critical role of reading in a deaf person’s ability to succeed in life with this comment: “Reading is a lifeline for deaf individuals.”

Theme 3: Parents and Teachers Use a Variety of Strategies and Techniques to Promote ASL Development and Reading Proficiency

Participants strongly believed that there must be collaboration between home and school to support reading development. They also emphasized that children must have opportunities to interact with and observe ASL/English bilingual adults in both settings.

Participants noted that teachers should engage children in developing metalinguistic awareness of language use as well as metacognitive exploration of the content of the text. One teacher described applying metacognitive strategies to guide students in deciphering a word’s meaning from its context, asking questions such as “What is the author’s purpose? Why does the author write that way?” One parent emphasized that it is important that teachers be skilled at teaching deaf children to read the whole context rather than word by word. Other participants stressed the importance of being able to discuss a range of developmentally appropriate topics with deaf children and provide elaboration and detail in discussion.

Noting that there are individual differences in learning styles and individual patterns in language acquisition, all of the participants described using a variety of strategies and techniques to support bidirectional language development, fostering both ASL proficiency and English literacy. Participants underscored the importance of promoting development of what is known as cognitive academic language proficiency in both languages (Cummins, 2008). This included development of metacognitive skills and metalinguistic awareness. One participant drew on his students’ ASL skills to help them learn how to decode English words. He described using ASL handshapes to provide visual representations of spelling patterns associated with English phonology, such as the “_oo_” in “book,” “look,” and “cook,” and engaging the students in discussion about these patterns.

Another example is a deaf parent’s recounting of how she would converse with her young daughter while driving in the car. She would firmly insist that the child not only sign in responses to her questions but also fingerspell the English words. She believed that this would help the child build English vocabulary and foster awareness of how meaning is conveyed in each language, nurturing the daughter’s development of academic language proficiency.

A teacher explained that during the transition period between learning to read and reading to learn, it is important for students to learn how to recognize and correct their mistakes in English and ASL. Another teacher described providing explicit modeling and constructive feedback to students about their ASL and English. Several participants emphasized the importance of having a systematic way to assess, monitor, and track the acquisition, learning, and use of both languages in order to support and challenge each student.

Interestingly, one of the participants, whose parents had used fingerspelling and spoken English with him, but not sign language, reflected on how his hearing parents had made the distinction between social and academic English clear to him when he was growing up. When engaged in an informal or social conversation, his mother would cue him when she switched to a more formal register or function by actually saying something like, “This is formal language. Now, we are talking formal and academic.” This participant’s experience and reflection now informs his bilingual ASL/English classroom practices.

Yet another teacher discussed his approach in helping students build vocabulary in both languages:

We know that an ASL term can have multiple meanings. This is something I want my students to understand. The students who have a
stronger foundational language are able to understand it better. They are able to make an assessment dependent on context to determine which meaning is most appropriate. Students who don’t have enough of a foundation in a first language will look at a single sign like OUTSIDE and think that it means WENT. They are not able to look at the context in which it occurs to understand how the meaning would be applied.

One thing I do is to make sure to expose them to new vocabulary. What I do is have them define a term…I ask them “what does this sign mean?” It could mean, DESCRIBE or EXPLAIN. But they don’t have enough exposure to multiple-meaning words. What I am doing is providing an environment that is the same as hearing students. They hear these terms over and over again in variable context, and that happens less for deaf students; especially if the teachers don’t give them an equivalent opportunity.

Another participant’s comment regarding her daughter’s reading development similarly suggests that this process of mediating written text through discussion in ASL helps deaf readers get beyond literal meanings: “The more exposure she has, the more comfortable she has become in terms of figurative language.” This underscores how fostering academic development in both languages is seen as vital to attaining reading proficiency.

Theme 4: Fingerspelling Provides a Bridge Between ASL and English

Most participants felt that fingerspelling played a critical role in ASL and English acquisition, in reading development, and in fostering ASL and English bilingualism. They believed that babies should be exposed to fingerspelling very early, long before they can be expected to understand, just as hearing babies are exposed to spoken language right from the start. One parent described how she would be driving with her young daughter in the back seat of the car and would fingerspell in the rear-view mirror long before the child could be expected to understand. A few parents who had not started fingerspelling with their own children until later described how they noticed how it helped foster reading development in other children and wished they had started earlier. One participant noted that fingerspelling helped her daughter write better. For example, when she struggled to write the letter “d,” she would fingerspell it while looking at her hand. Then after understanding what the “d” looked like on her hand, she would write it on the paper.

These participants’ experiences show that children benefit from fingerspelling to help them to recognize vocabulary as they fingerspelled while reading. One participant stated:

...fingerspelling, I think, made the transition to writing faster... because, I think they’re used to seeing how a word works and how English works in a visual way... you can bridge, certainly, from print to ASL, but you need the fingerspelling in between. It’s faster because of orthographic familiarity. It’s something you see over and over again. You see sentence structure, the internal workings of words.

Another participant described how she would fingerpell words while simultaneously pointing to them in print. She would encourage her child to fingerspell the words back to her while they were reading together. In these ways, participants saw fingerspelling as serving as an invaluable tool for bridging between ASL and English.

Discussion

This qualitative study identified emic perspectives on important factors related to the process of bilingual deaf children becoming proficient readers. This set of findings represents a departure from experimental research focused on phonological encoding and word recognition, which has tended to place emphasis on deaf children’s reading problems. Findings here emphasize the critical role of early meaningful communication; it is important for deaf children and parents or caregivers to be able to share experiences, discuss ideas, and engage in metalinguistic and metacognitive activities in both ASL and English. Seeing parents read is as important for children as is being read to by their parents. Deaf children who acquire, learn, and use both ASL and English develop literacy as bilingual beings. Each of their languages influences the other through a common underlying
proficiency or CUP (Cummins, 2007) that undergirds this process. The acquisition and learning of ASL and English can be a bidirectional, mutually additive and supportive process. Bilingual deaf children’s development of literacy thus must be examined differently from the study of monolingual children becoming proficient readers.

Participants characterized the transition from “learning to read” to “reading to learn” as a breakthrough for deaf children in becoming successful readers. They discussed the differences between developing readers and skilled readers. Developing readers, having not yet developed effective word analysis or decoding strategies, were observed to become easily frustrated. For some children, this frustration sometimes led to a resistance to reading. Several participants noted that hard-of-hearing children at this stage would read aloud and sound out words or phrases but were not able to comprehend what they were reading. Developing readers were described as bottom-up decoders. They often choose signs that did not match the meaning of the printed text. They were described as being tethered to the text and unable to summarize or retell a passage without frequently glancing at the text. As Simms, Andrews, and Smith (2005) noted, reading word for word, being a lower-level cognitive skill, interferes with higher-level prose processing. In terms of higher levels of cognition, developing readers were limited in their capacity to elaborate, provide an opinion about what they have read, or take a perspective different from that of the author.

The first thing that the participants noticed about a deaf child who has advanced to the “reading to learn” stage is that they enjoy reading. When asked about the characteristics of skilled deaf readers, a teacher responded, “Skilled readers often ask for more and want to read more.” Other participants described skilled readers as being undaunted by challenging material and willing to take risks and reach beyond their comfort zone. At this stage, readers would use effective word analysis and decoding strategies that allowed them to engage in top-down and bottom-up decoding processes simultaneously and automatically. They use reading to access information across the curriculum, in everyday life, and for entertainment; comfortably reading textbooks and other course materials; using and understanding vocabulary across a range of academic content areas. In the classroom, students who had advanced to this stage would frequently rely on print to get information rather than solely relying on the teacher’s explanations in ASL. In addition to course materials, these readers were observed to read and understand a wider variety of print media, including newspapers, magazines, and novels. They spontaneously initiated discussions about things they had read.

As evidence of the bidirectionality of the language development process in this population, these skilled readers could effortlessly depart from the printed material to discuss the content in academic ASL, with sign selection, fingerspelling and delivery matching meaning and discourse style of the written message. Bilingual readers who had made this leap could critically analyze material or use figurative language with equal comfort in both ASL and English. These bilingual readers could code switch between ASL and English when asked to engage in metacognitive activities. The feedback loop between ASL and English is reflected in students’ gradually increasing automaticity in sign selection to fit the meanings in written texts. They also demonstrated the ability to use a variety of writing forms and to proofread and correct grammatical and discourse errors in their own written or signed pieces.

Yet, it was difficult for participants to pinpoint a specific time when this transition occurred. The process was described by some as having a mysterious or magical quality and one participant referred to it as a “Eureka!” moment when they realized that the child had become a proficient reader. However, when asked to reflect back on a 6-month to 1-year time period prior to the time the child was reading proficiently, they were able to describe changes in behaviors related to reading and signing, and in some cases, writing.

Some of the participants reflected on their own personal experiences with this process. One deaf parent remembered not being motivated to read as a child. Her deaf father would constantly buy her new books and provide her with opportunities to read. She stated that one day, something changed inside her and she suddenly felt as if a light bulb had turned on. Although she could not describe what led up to this transformation, she became a voracious reader: the more she read
and the more she wrote, the more her command of English improved.

Deaf children cannot just learn to read without knowing a language (Goldin-Meadow & Mayberry, 2001). This language foundation must include access to the language they are reading. During the stage of “learning to read,” children learn to recognize the patterns of the letters, words, and sentences. Hearing children recognize the patterns through sounds and the relationships created by and with the sounds (words, syllables, and phonemes) as they read. Similarly, it has been argued that skilled deaf readers have found ways to access the phonological system of English (Jackson & Coltheart, 2001; Wang, Trezek, Luckner, & Paul, 2008). Adams (1990), as cited in Padden and Ramsey (1998), discusses that children must master two important tasks in learning to read: “the ability to name letters quickly and accurately and the presence of phonemic awareness (specifically, the ability to associate sounds with letters)” (p. 32). Deaf children may be helped in the task of decoding the meanings of words by “sounding out” as they fingerspell, which seems to help them to recognize and comprehend the words. As one participant claims, “fingerspelling is a bridge between a sign and learning a word,” indicating that it is also a learning process for deaf readers to become proficient in signing as they learn to read.

Research has found that fingerspelling positively correlates with stronger reading skills (Kelly, 1995; Padden, 1991). Padden and Ramsey (1998) reported that young deaf children can recognize fingerspelled words before they can read print. Postulating that fingerspelling’s role in reading therefore is most likely that of exposing young deaf children to orthographic regularities, they proposed that these orthographic regularities are then expanded to print. They also found that “deaf students who demonstrated skills in ASL, as measured by the ASL tests, also performed well on the fingerspelling test, indicating that as ASL skills increase, fingerspelling skills are likely to increase as well” (p. 34).

Padden and Ramsey (1998) found a significant correlation between ASL proficiency and English reading where fingerspelling and initialized signs are used to provide a bridge to reading. Their participants with high knowledge of both ASL and fingerspelling were found to have the highest reading skills as well. A recurring theme in our data focuses on the role of fingerspelling in deaf children’s acquisition of English. Participants felt that when deaf children fingerspell to themselves, it helps them to recognize printed words. Our participants often referred to fingerspelling as a bridge between ASL and English. This bridging mechanism is also seen as allowing adults to provide deaf children with increased exposure to and enhanced comfort in using figurative language. Padden and Ramsey (1998) note that fingerspelling, which derives from a representation of English orthography, is frequently present in the language environment of signing deaf children and thus is a “likely candidate” for this function. Fingerspelling helps deaf children with pattern recognition, which is related to developing strategies for identifying and analyzing the meaning, associated with the phonological (or grapheme) patterns in the English language. Crume (2013) discussed the importance of early exposure to fingerspelling, where he found that teachers used fingerspelling strategies to foster ASL/English bilingual development in preschool classes. Teachers in Crume’s study changed teaching strategies from “letter of the week” to “handshape of the week” to build vocabulary. They found that this use of ASL allowed their students to benefit from their L2, which could then be extended to comprehension of English.

Similarly, our participants’ intuitions and observations gave credence to the bidirectional language development process that underlies reading success. Their emic view provided a strengths perspective. That is, focusing on what deaf readers can do, rather than on what they cannot do, they identified strategies that yield positive outcomes. These knowledgeable insiders identified four themes, which have also been found through experimental work. Research has found that exposing deaf children to ASL early will allow the brain to more easily become bilingual and permit later academic success due to the development of appropriate brain structures (Pénicaud et al., 2013). In addition, research finds that all babies under 10 months respond to ASL visual phonology (Krentz & Corina, 2008; Kuhl & Rivera-Gaxiola, 2008), which appears to facilitate their becoming bilingual (Petitto & Kovelman, 2003) based on their accessing the statistical regularities of linguistic input.
Future Research

Focusing on an emic perspective highlights the value placed on bilingual competence. As such, it can tell us how ASL and English bilingual deaf and hearing adults guide deaf children in the transition from learning to read, to reading to learn through the use of two languages, one signed and one (primarily) in print. Our participants were attuned to the intricate relationship between ASL and English in this process and often commented on the bidirectional influence of each language on the other.

Future studies could assess students’ literacy outcomes in light of their individual language backgrounds as well as the bilingual practices in their educational settings. The findings of this study might inform research designs that measure students’ reading and ASL proficiency over time while documenting instructional approaches and home literacy practices.

Recommendations

Findings suggest factors that promote bilingual ASL and English proficiency and support deaf students in becoming strong, independent readers. The most important of all is that all participants felt that ASL as a language foundation is critical and it must be fully accessible in both schools and homes. Recommendations that emerged in the interviews include as follows.

Parents’ Recommendations for Parents and Teachers

- **Establishing a language-rich culture in the home**: Provide reading materials around the house such as magazines, newspapers, letters, and books. Use print to label and identify things. Give children books of their own from an early age, long before they are actually able to read. Immerse the child in a visually enriched environment that fosters connections between objects, pictures, signs, and words.
- **Using fingerspelling as much as you can**: Fingerspell to connect words to objects around the house and real-life experience. Expect your child to fingerspell back in responses to your questions to stimulate growth in the depth and breadth of their vocabulary.
- **Investing time in reading**: Set aside time each day for your child to read material unrelated to homework. Read with your child and have a dialogue about what you read. Try to make time to go to the library at least once a week to focus on reading. Read books, magazines, and newspapers so that your children see you as a role model.

Teachers’ Recommendations for Teachers

- **Modeling many reading strategies and being consistent**: Use strategies such as chaining and sandwiching to connect both ASL and English. Guide students in the signing and writing process by having them draft signed or written pieces, conferencing with them, and having them improve upon their drafts after feedback. In a variation of the language experience approach, students’ ASL videos can be used to help them create written pieces through the writing process, which in turn can support continued reading development.
- **Challenging the students to read beyond their reading level**: Ask students to retell what they read without glancing at the text. Have an open dialogue about what they read and engage them in metalinguistic activity.
- **Implementing language planning**: Provide language planning in the deaf education field, at the national, state, school, classroom, and individual learner levels. This would include formal preK-12 grade ASL curricula and assessment tools.

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References


Appendix

Interview Questions

1. Please describe your background, training, experience, and perspective on bilingual acquisition, development, and use of ASL and English.

2. What do you see as the role of each language, ASL and English, in deaf children’s development of literacy and oracy?
   a. Ask about early language experiences using ASL, parents’ use of ASL with very young children, and so on.
   b. Ask how parents and teachers use each language with young children and school-aged children to promote and facilitate language and literacy—keeping in mind the development of signacy, literacy, and, where appropriate, oracy.
   c. Explore what they think about how a bridge is constructed between ASL and English, include specifics related to use of fingerspelling with and by younger children, and facilitating access to graphology (print system).

3. What do you see as purposes for reading?

4. For students 8–10 years old, what characteristics, behaviors, skills, and functions are demonstrated or performed by skilled readers? (provide specific examples).
   a. How are these students different from unskilled readers—intrinsic (intelligence, cognitive style, attention/focus, interests, ASL proficiency) and extrinsic (history of exposure to ASL in school, home languages and communication, early and later school/instructional experiences, etc.) factors.
   b. Ask about ability to use ASL for a range of purposes in academic as well as social contexts [retelling a story after watching someone else tell it, narrating a story, leading a “storysigning” (similar to “read aloud”) type activity, presenting on an academic topic, debating/discussing an issue with a partner or in a group, etc.].