

2015

Bilingual spoken language proficiency in children who are deaf and hard of hearing

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**Bilingual Spoken Language Proficiency in Children Who Are Deaf and Hard
of Hearing**

By

Brianna McAfee

**An Independent Study
submitted in partial fulfillment of the
requirements for the degree of:**

Master of Science in Deaf Education

**Washington University School of Medicine
Program in Audiology and Communication Sciences**

May 7, 2015

**Approved by:
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Abstract: This literature review explores the ability of children who are deaf and hard of hearing to acquire and gain proficiency in a second oral language. In addition, this paper examines that factors that attribute to gaining proficiency in a second oral language.

Acknowledgements

I would like to thank Barb Lanfer, my independent study advisor, for her patience, guidance, and assistance in writing this independent study. Additionally I would like to thank the PACS faculty and staff, my classmates, friends, and family for their continuous support.

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Introduction

According to the 2011 United State Census, 20.8% of the United States population age five years and over spoke a language other than English in the home. Bilingualism in the United States is projected to rise. The United States Census projects that by 2020, 23% of the population will speak a language other than English at home with a wide range of languages spoken. These statistics suggest that some children who are deaf/hard of hearing and their families may speak a language other than English in the home. The National Institute on Deafness reports that more than 90% of deaf children are born to hearing parents.

This literature review investigates the ability of children who are deaf/hard of hearing using spoken language to acquire and gain proficiency in a second oral language. A variety of research has been completed surrounding children living in bilingual homes and use spoken language as their sole mode of communication. This literature review looked solely at research conducted on children living in bilingual homes where they were exposed to a second language and use spoken language as their only mode of communication. This review did not explore the effects of manual communication in addition to oral language bilingualism. The purpose of this literature review is to investigate what is known about second language acquisition in children with hearing loss who use hearing aids and/or cochlear implants. This literature review examines the factors that may impact children's ability to gain proficiency in a second oral language with English being the primary language.

Parents of children who are deaf/hard of hearing face many challenges after their children's diagnosis of hearing loss. Bilingual families with children who are deaf/hard of hearing face

even more obstacles because they have to decide if they would like their children to become bilingual. In the past many clinicians were hesitant to recommend bilingualism for children who were deaf/hard of hearing. They felt that learning a second language would interfere with the acquisition of the first language. This topic is important for parents and caregivers, teachers of the deaf, speech language pathologists, audiologists, and any other professional working with children with hearing loss from bilingual homes so they are better able to counsel families on this topic.

Bilingualism in Typically Hearing Children

Learning a second oral language has been shown to be beneficial for speech and language development among typically hearing children. A study by Goldstein and Bunta (2012) found that when children with typically developing language and normal hearing speak two languages consistently, they have more advanced phonological skills than their monolingual English speaking peers. Bilinguals have been shown to have advantages over monolinguals in metalinguistic awareness and executive function (Barac & Bialystok, 2012). Oral bilingualism has been shown to have a positive effect on cognitive ability (Bialystok & Craik, 2010). Speaking two languages helped develop and improve executive functions. Executive functions include working memory, reasoning, task flexibility, planning, and execution.

Zelasko and Antunez (2000) suggest that children who are bilingual have more improved executive functioning because they must store two sets of sounds, grammar rules, and vocabulary in their memory. This helps develop and improve working memory. Zelasko and Antunez also suggest that switching between two languages causes bilingual children to have

more flexibility in their thinking. This mental flexibility helps them in understanding complex math concepts and solving word problems more easily than monolinguals. Bilingualism also allows children to maintain strong ties with their families, culture, and community which are important for developing identity (Zelasko & Antunez, 2000).

Bilingualism in Children who are Deaf/Hard of Hearing

With more and more children being implanted with cochlear implants worldwide, researchers have begun to question if these results will apply to children with cochlear implants as well. Research is now being conducted to see if bilingual advantages apply to children who are deaf and hard of hearing who use assistive listening devices including cochlear implants. Many studies have been conducted to look at monolingual spoken language acquisition and proficiency in children with cochlear implants. In one study, Geers (2004) found that children with cochlear implants can acquire age-appropriate speech and language skills as compared to their normal hearing peers. Researchers have started to investigate whether learning a second language in conjunction with a first language has an impact on language skills for children who are deaf/hard of hearing. Many researchers hypothesize that the acquisition of a second language does not have a negative effect on the first oral language.

One study to examine the effect of learning a second oral language was conducted by Ellen Thomas and colleagues (2008). Thomas tried to determine if exposure to a second language impacted the ability of children with cochlear implants to develop spoken English language skills. This study compared the spoken English language skills of twelve children with cochlear implants from bilingual homes to twelve children with cochlear implants from monolingual

homes. The two groups of children were paired based on age of implantation, cochlear anatomy, educational setting, and device type. Speech perception and speech/language measures were evaluated for each group using spoken English longitudinally at 6, 12, 24, and 36 months post activation. A battery of tests was used to evaluate comprehension, fluency, vocabulary, pronunciation, and grammar. The results from each of these tests were added together to give each participant a total score. The results showed that children in the monolingual group performed slightly better than children in the bilingual group but there was no statistically significant difference between the groups for any of the subtests. The results also showed that English was the dominant language of students in the bilingual group. The researchers hypothesize that this may be due to the fact that these children attended school and received intervention in English.

The authors of this study concluded that the presence of a minority language in the home did not have a significant negative effect on the ability of the children from bilingual homes in this study to learn spoken English (Thomas, El-Kashlan, & Zwolan, 2008). The researchers also concluded that the results indicate that children with cochlear implants can acquire knowledge of more than one language and that doing so does not seem to hinder development of English as the primary language (Thomas et al., 2008). This study illustrated the importance of language exposure for children with cochlear implants. It discussed that although many of the bilingual families are not fluent in English, they are able to provide their children with a language-rich environment in their native language (Thomas et al., 2008). The researchers showed that language exposure in any language is more beneficial than no language exposure at all. This helps illustrate how important language exposure is to children with cochlear implants.

A limitation of this study was that the mean age of cochlear implantation was six years of age which in today's standards is old for a child to receive a cochlear implant. Research has shown that earlier implantation has an impact on language ability (Geers, Nicholas, & Sedey, 2003). Further research should be conducted to see if earlier age at implantation has a positive effect on second language acquisition and proficiency. Future studies could determine if the results of this study remain constant as the bilingual children get older. In the future, researchers could investigate the effects of bilingualism on language and school performance as children enter into middle and high school.

Another study, by Bunta and Douglas (2013) compared the language skills of bilingual children with hearing loss to the language skills of their monolingual English speaking peers' with hearing loss. Participants in this study consisted of forty children with hearing loss, twenty of whom were monolingual English speaking children with hearing loss while the other twenty participants were bilingual English-Spanish speaking children with hearing loss. All participants attended a Listening and Spoken Language preschool program in which they received auditory-verbal therapy. The monolingual group received daily instruction using spoken language in their native English language. The bilingual group received daily instruction in both English and Spanish. For the bilingual group, daily instruction was provided in English by their preschool teacher while auditory-verbal training was provided in Spanish. The parents of the bilingual children had limited English language proficiency so Spanish was the language used at home. The participants' language was measured using the Preschool Language Scale (PLS). The monolingual group was administered the test in English while the bilingual group was administered the test in two different sessions; one session was administered in English and the second in Spanish.

This study found that the language skills of bilingual children with hearing loss were similar to those of their monolingual English speaking peers. In the study, the bilingual language group performed similarly to the monolingual language group suggesting that learning a second language does not affect language development in children with hearing loss who use hearing aids and or cochlear implants. These results are consistent with previous research that was performed. In addition, this study found that bilingual children performed similarly in both English and Spanish. These results suggest that the target languages can be acquired at similar rates of proficiency. The researchers noted that the participants could not be matched on maternal education since the mothers of the bilingual children had lower educational levels than those of the monolingual children. Maternal educational level has a significant impact on language outcomes of children who are deaf and hard of hearing. There is a strong correlation between maternal education and level of family participation (Sarant, Holt, Dowell, Rickards, & Blamey, 2009). Future research should be done to repeat this study controlling for maternal educational level to see whether the bilingual children's scores would change in relation to the monolingual children. Another limitation of this study is that the researchers did not control for socioeconomic status (SES) which is known to have an impact on speech and language development.

Researchers in this study suggested that educators should encourage and foster dual-language development for children with hearing loss with cochlear implants and hearing aids. This was achievable at that particular school in Texas because there was a large Spanish speaking population. In schools in other areas of the country, it would be difficult for therapists to administer auditory-verbal therapy in the students' native language since there usually is not one

common language spoken among the children. This study provides many results that are useful for professionals such as deaf educators and speech-language pathologists.

Research by Susan Waltzman and colleagues (2003) also looked at the bilingual oral language capabilities in children with cochlear implants. Waltzman's research looked to explore second oral language fluency in children with cochlear implants and the factors that effect this development. This study consisted of eighteen oral bilingual children with cochlear implants. All of the children were exposed to more than one spoken language at home. English was the primary language for most children with Yiddish being the other language. The children were exposed to both languages at home as well as at school. The students' main exposure was at home where parents conversed in both languages. At school children were exposed to one language for half of the day and the second language for the other part of the day. This study looked at the children's overall receptive and expressive language abilities using several different measures. Second language proficiency was measured using the Student Oral Language Observation Matrix (SOLOM). The SOLOM is an interview style rating scale used to evaluate a child's proficiency in a second language. It looks at five communication domains: comprehension, fluency, vocabulary, pronunciation, and grammar. The researchers also tried to determine what factors affected the development of a second oral language. They looked at auditory skills, multiple disabilities, home language environment, parental involvement and motivation, school setting, and language intervention.

The results of the study showed that children with cochlear implants have the ability to use a second spoken language in addition to their primary language. The majority of the children showed age-appropriate receptive and expressive language abilities in their first language

compared to normal hearing peers. This study also showed that home environment and parents' desire for their child to learn a second language seemed to be the biggest factors in learning a second language. Many of the children attended bilingual schools and received language intervention in the second language in addition to using the second language at home. Despite this dual exposure to both languages, most children performed better in their first language. Scores for the children's first language were age appropriate while their second language scores placed them in the early stages of language development. The researchers proposed that the deficit in second language scores may be related to the length of time the children were exposed to that language. Parents reported that they had been advised to stop speaking to their children in the second language at home. Parents also reported that after children made progress in the first language, they began to expose them to the second language. Thomas and colleagues (2008) noted in their study that some professionals suggested that deprivation of the native second language can pose social, cultural, and personal restrictions on children and their families. These studies showed the importance of a child learning the native language spoken in the home. A limitation of the study was that the sample size of participants was small with only eighteen participants. Due to the variability in age not all participants were able to be assessed on all the language domains making the sample size even smaller. Another limitation of this study was the variability in age of implantation and length of device use. The range of device use ranged from 10 months to 12 years which may have an impact on the results. Future research should be performed to control for the length of second language exposure to see if this has an effect on language outcomes.

Language Outcomes

Research has looked at the speech perception scores, vocabulary and the receptive and expressive language skills of the first and second languages. Speech perception scores of bilingual cochlear implant users were reported as similar to monolingual children with cochlear implants in many of the studies. English receptive and expressive language skills were assessed in children under three years old using the Reynell Developmental Language Scales (RDLS). The RDLS test assesses language comprehension and expression of language using object manipulation, naming and description based on questions. Children four years and older were administered the Oral and Written Language Scales (OWLS). The OWLS is a broad based assessment of the communication skills of children age 3-21:11. The Listening Comprehension Scale and Oral Comprehension Scales subtests were administered. The results from the RDLS and OWLS suggest no significant difference between the language scores of the bilingual group in comparison to those of the monolingual group.

Second language proficiency was measured using the Student Oral Language Observation Matrix (SOLOM). Many of the children received scores that showed their second language skills were in the early stages. These results suggest that in most cases the child's English proficiency was higher than their second language proficiency. McConkey-Robbins and colleagues reported that second language proficiency showed improvement over the course of their two year study (McConkey-Robbins, Green, & Waltzman, 2004). The results of these studies all concluded that English was the dominant language of the bilingual children. This may be due to the fact that these children attended English speaking schools and therefore received intervention in English.

Factors that Affect Second Language Outcome

There are many factors that have an influence on the acquisition and proficiency of a second oral language. Factors such as the absence of an additional disability, parental involvement, amount of exposure to the second language and educational setting have been shown to have a large impact on the success of second oral language acquisition and proficiency. Parental involvement and desires for their children to become bilingual are significant factors. Parents must be committed to helping their children become bilingual. Even if parents are not fluent in English they can still provide a language-rich environment in their native language which is beneficial to the acquisition of English (Thomas et al., 2008). Many professionals do not recommend discouraging families from using their native language especially if the parents are not fluent speakers of English. Parents who only have limited English proficiency should not speak English to their child since these parents are unable to provide strong language models in English (Sussman & Lopez-Holzman, 2001). If parents have a limited proficiency in a language then they will produce a reduced number of utterances. Amy McConkey-Robbins (2004) suggested that parents should instead speak to their children in their native language in order to provide an enriching language environment. She also suggested that parents should be coached on ways to model language techniques at home in their native language. Discouraging families from using their native language reduces the child's exposure to the second language. Parents should allow their children the opportunity to experience meaningful opportunities to experience the second oral language (McConkey-Robbins et al., 2004) Discouraging parents from using their native language can have additional effects on the family and culture.

The amount of exposure to the second language was also found to be a factor in the acquisition of the second oral language. The amount and intensity of exposure to the second language were

two important factors. The children whose parents spoke the second language at home and used the language outside of the home had proficiency in both languages as reported by the SOLOM (McConkey Robbins et al, 2004). This additional exposure and the ability to practice the second language in a meaningful way help in the acquisition. Susan Waltzman and colleagues (2003) research supports these findings. Their study reported that several parents had stopped speaking the second language at home after being advised to do so. They concluded that the lower SOLOM scores can be attributed to the length of exposure to the second language at home. To help facilitate the acquisition of the second language parents with limited English language proficiency may benefit from a parent-child rehabilitation program in their native language. This would allow parents to learn meaningful ways to implement spoken language in the second language at home (McConkey-Robbins, 2007). This suggests a need for more diversity among professionals working with children with hearing loss and their families.

Another important factor in the acquisition and proficiency of a second oral language is the amount of intervention and therapy. The children in many of the studies received intensive auditory-oral or auditory-verbal therapy which is believed to have contributed to their language skills. The children in the studies did not have any other known disabilities. Other factors that have an impact of second oral language acquisition are access to sound, length of device use and age of implantation. Most of the children in these studies were implanted before two years old which has been shown to have beneficial results on language (Geers, et al, 2003).

Conclusion

This literature review has documented the research literature findings as well as potential factors that affect the acquisition of a second oral language in children who are deaf/hard of hearing.

These findings indicate that children who are deaf and hard of hearing using spoken language have the potential to acquire and gain proficiency in a second oral language. The research literature suggests that there are many factors that attribute to the success of acquiring a second language. Parental involvement and the amount of exposure to the second language were two of the biggest factors that attributed to children learning a second oral language.

These findings are important for professionals working with families and children who are deaf/hard of hearing since they can use these research findings to counsel families. Professionals can work to promote a child's ability to communicate bilingually by coaching parents on ways to model language at home in their native language. Promoting bilingualism has the ability to strengthen a child's bond with his/her family and community. This research also draws attention to the need for additional bilingual professionals in the field of deaf education. According to the American Speech Language Hearing Association (2011) only 4.2% of audiologists and 4.5% of Speech-Language Pathologists in the US reported that they were bilingual. These statistics highlight the need for bilingual professionals to provide intervention and support for these families.

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