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Theories and Practices about Bilingualism on the Education of the Deaf

Teorias e práticas sobre bilinguismo na educação de surdos

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ABSTRACT

Issues, challenges, and benefits of bilingualism have been frequently discussed in the literature for children who are hearing. This paper outlines the bilingual approaches for individuals who are deaf or hard of hearing. Using this framework, we present issues and challenges to consider for transition from the first language in sign to reading and writing in a different language. Finally we present evidence based and promising strategies to assist professionals in supporting language and cognitive development for individuals who are deaf or hard of hearing.

RESUMO

Aspectos, desafios e benefícios do bilinguismo têm sido com frequência discutidos na literatura relativa a crianças ouvintes. Este artigo comenta as abordagens bilíngues para indivíduos que são surdos ou hipoacúsicos. Usando este enquadramento teórico, apresentamos aspectos e desafios da transição da L1, em sinais, para a leitura e escrita em uma língua diferente, oralizada. Ao final, apresentamos evidências baseadas em estratégias promissoras para subsidiar os profissionais no que tange ao desenvolvimento linguístico e cognitivo de surdos e hipoacúsicos.

KEY WORDS:
Bilingualism, Deaf, Hard of Hearing, Language Development.

PALAVRAS-CHAVE:
Bilinguismo, Surdez, Hipoacusia, Desenvolvimento linguístico.

The term bilingualism has been used inconsistently in the literature on language development. Researchers and other stakeholders have used different definitions for this term or used different terms to discuss similar concepts for the past three decades. When focusing on speaking and listening skills, researchers have used the term bilingualism across a continuum of linguistic skills; at one end of the continuum is the ability to use the second language as a native speaker and at the other end the term is used to denote marginal speaking and listening skills in the second language (Cummins & Swain, 1986). More recent literature has focused on the definition of bilingualism according to the onset of the second language, referring to sequential versus simultaneous bilingualism. Exposure or opportunity given to children to learn two languages from birth or shortly after is referred to as simultaneous bilingualism (Paradis, Genesee, & Crago, 2011). These children generally are thought to achieve linguistic milestones in both of their languages in a fashion similar to that of monolingual children. Sequential or successive bilinguals are those children who have made significant progress towards the acquisition of one language and then they begin the acquisition of the second language. These children are also referred to in the literature as second language learners. Thus, researchers argue that whether children are simultaneous or sequential bilinguals is important to recognize when assessing the progress in language development of children. By definition, sequential bilingual children are likely to have more exposure and practice in both languages than the second language learners would have with their second language, resulting in a differential rate of language development.

Benefits and Challenges of Bilingualism

Researchers have focused on the language-cognition and language-culture connection when trying to ascertain the challenges and benefits of bilingualism (Banerjee & Guiberson, 2012; Paradis, Genesee, & Crago, 2011). When reporting on language-cognition connections, researchers have consid-

ered questions such as, are learning two languages burdensome or does dual language learning impact cognitive development in children? Researchers contend that given intact cognitive systems and opportunities to interact with skilled users of both languages, the process of learning two languages is no different than learning a single language (Iglesias & Rojas, 2011). However, some professionals mistakenly believe that introducing two languages may confuse young children and thus recommend the use of one language only, oftentimes English. This belief that children will be confused by two languages is a myth, and is not supported by research describing language development in bilingual children with and without disabilities (Kohnert, 2008; Paradis, Genesee, & Crago, 2011). In fact, a meta-analysis conducted by Adesope, Lavin, Thompson, and Ungerleider (2010) based on 63 studies involving 6,022 participants indicates that there are bilingual benefits regarding attentional control, working memory, metalinguistic awareness, and abstract and symbolic representational skills.

As a result, professionals want to ensure that young children maintain their home language, with the knowledge that children's home language supports their linguistic, social and educational development, as well as their future language and literacy proficiency in other languages. However, practitioners report that the lack of knowledge about language development in linguistically diverse children is a major challenge for them (Guiberson & Atkins, 2010). This lack of knowledge likely influences practitioners' beliefs and recommendations to families about home language maintenance.

Children exposed to two languages are most often exposed to two cultures and as a result have additional learning to do in order to use the two languages in culturally appropriate ways. This may pose a challenge for children when the two cultures have significantly diverse practices and pragmatic and semantic use of languages is dissimilar between cultures (e.g., between the oriental culture and western culture or the hearing and deaf cultures) (Paradis, Genesee, & Crago, 2011). These children may mix these cultural patterns similar to how they code-mix languages resulting in creation of a new multi-ethnic identity of shared culture, languages, and interaction patterns. Thus, professionals must take the cultural patterns of socialization into consideration when working with bilingual children.

Vygotsky (1962) argued that mastery of language is critical to children's ability to control their own cognitive processes. In addition to understanding children's language development in their first language (L1), professionals must be familiar with second language (L2) acquisition during the assessment and intervention process, particularly when working with children

who are sequential bilingual. Children who are emergent bilinguals or who are developing L2 progress through a series of predictable stages (Tabors, 2008). Second language acquisition is also influenced by both child characteristics (e.g., age of exposure to the second language, language usage patterns, and general language ability) and external factors (e.g., family and community language usage patterns, languages used for classroom instruction and/or learning) (Kohnert, 2008; Patterson & Pearson, 2011). Knowledge about typical second language acquisition and related variables is critical to adequately understand development in children because typical bilingual behaviors can easily be confused with speech and language disabilities (Guiberson, Barrett, Jancosek, & Yoshinaga Itano, 2006). Also, an understanding that all children, even those with language learning and other disabilities, are capable of developing language skills in more than one language is critically important (Kohnert, 2008; Paradis, Genesee, & Crago, 2011).

Traditional Paths to Bilingualism

According to Schirmer (2000), there are two major models of bilingual education—one that focuses on "phasing out of the first language as the child gains proficiency in the second language" (p. 90) and the second that is based on "the development and maintenance of two languages throughout the child's schooling" (p. 90). The immersion, transitional, maintenance, and dual language bilingual education models that are discussed in the literature fall within these two broad categories. In an immersion bilingual education model, all or most classroom instruction is in the child's L2 with other children who are from the majority culture. The goals of the transitional model is to introduce the L2 while the main instruction is initially in the students' L1. The L2 is gradually introduced to assimilate children in the mainstream classroom culture. In the maintenance and dual language bilingual education models, the child's L1 and L2 are given equal emphasis during the instruction. However, while in the maintenance model the instruction is sequential, in a dual language model the instruction is simultaneous. The teachers in a dual language model are bilingual and use both languages simultaneously in a class that is composed of half minority and half majority children.

Iglesias and Rojas (2011) argue that most of the existing literature on and models of bilingual acquisition has focused on simplistic, static, and a one dimensional perspective in understanding how individual factors such as age of onset and parental input influence the developmental of language (e.g.,

Cummins & Swain, 1986, Valdes & Figueroa, 1994). They propose that models of bilingualism should allow researchers to, "identify variables that should be considered, describe the interrelationship among the variables, and capture the variety of outcomes characteristics of bilingual individuals" (p.4). One such model, the dynamic model of multilingualism (DMM) grounded in dynamic systems theory, developed by Herdina and Jessner (2002) attempts to explain the complex process of multilingual language development. Herdina and Jessner propose that all languages of multilingual speakers are dynamic language subsystems that continually interact with one another and change over time. This continuous "negotiation" among language growth, language maintenance, and gradual language attrition results in rich variations among multilingual speakers, readers, and writers.

Bilingual Approaches for Individuals who are Deaf or Hard of Hearing

Similar to hearing bilinguals, many benefits exist for individuals who are deaf or hard of hearing who also develop the knowledge and skills to function bilingually. While the majority of hearing individuals are bilingual in two spoken languages, individuals who are deaf or hard of hearing are often bilingual in two different modes of communication - sign (e.g., American Sign Language, Brazilian Sign Language) and in reading/writing (e.g., written English, written Portuguese). Specifically, proponents of a bilingual approach for individuals who are deaf or hard of hearing contend that by using a natural sign language as their L1 as the primary mode of interaction and instruction, individuals will develop basic interpersonal communication skills, have easier access to curricular content, develop cognitive academic language proficiency (Cummins, 1984) and develop higher levels of literacy in the L2 (e.g., Fish & Morford, 2012; Mahshie, 1995).

Supporters of bilingual approaches for students who are deaf or hard of hearing contend that natural sign languages demonstrate similar linguistic properties as spoken languages and children exposed to sign languages from birth acquire these languages on a similar maturational timeline as hearing children acquiring spoken language (Schick, 2011; Spencer, 2001). Bilingualism is based on the premise that children who acquire language early can more easily acquire a second or third language whether that language is visually or auditorily-based (Cummins, 2000; Grosjean, 2010). Early exposure to a visual language that is fully accessible encourages language development and

provides opportunities to develop critical thinking and reasoning skills that can be applied to second language development (Fish & Morford, 2012).

Bilingual methods for children who are deaf or hard of hearing are characterized by instruction in sign language, with the expectation that they will use sign for communication, and will learn the second language through the written form (Lange, Lane-Outlaw, Lange, & Sherwood, 2013). Most bilingual programs for students who are deaf or hard of hearing are based on second-language models discussed above. Sign is introduced as the child's L1 and the written form of the dominant language is taught as L2. Sign is used for the full range of social interactions (e.g., conversations, discussions, questions and answers), to teach curriculum subjects such as science, humanities, social studies and mathematics, as well as to teach reading and writing skills in the dominant language. In addition, children are surrounded with books, storytelling and reading as well as the use of the dominant language for real life situations such as using the Internet, texting, and report writing (Snodden, 2012). According to this theory, sign language proficiencies support general cognitive, academic and problem solving skills and that the development of these skills facilitate literacy-related skills in another language. Specifically, the contention is that children will learn to read with the support of sign language as L1 accompanied with sufficient, meaningful, and motivating exposure and interaction in L2 print (Livingston, 1997).

Challenges Bilingual Approaches for Students who are Deaf or Hard of Hearing

In the following sections underlying challenges that potentially hinder the smooth transition from developing an L1 in sign to reading and writing in a different language are presented. First, as noted above, the majority of models for becoming bilingual are based on the premise that both conceptual and linguistic growth are dependent upon opportunities for meaningful interaction in both the target language (L2) and the first language (L1) (e.g., Cummins, 1991). Research (Mitchell & Karchmer, 2004) suggests that approximately 95% of children who are deaf or hard of hearing are born to hearing parents who have little or no prior knowledge or experience in the use of sign language. As noted by Mayer and Wells (1996), language learning is most favorable when the following four conditions are in place: (1) adequate exposure in quality and quantity, (2) to accessible linguistic input, (3) in meaningful interactions, (4) with others who are already capable users of the

language. Similarly, Cambourne and Turbill (1987) suggested that for language and literacy to develop optimally children need the following circumstances: (a) immersion in language-rich activities, (b) demonstration via meaningful conversations, (c) engagement using language for real-life purposes, (d) approximations are accepted, and (e) feedback is provided and success is celebrated. Each of these factors are difficult to put into practice by parents who are not skilled in sign language and who are trying to learn a new language simultaneously with caring for a newborn child as well as address the daily tasks of adult life (Knoors, Tang & Marschark, 2014).

Second, as noted above, most bilingual models used with hearing individuals support the view of linguistic interdependence (e.g., Cummins, 1991), which assumes that learners will have the opportunity to learn both the spoken and written modes of L1 and then would use this literate proficiency to support the learning of L2. However, while humans most likely have always used biologically based systems such as gesture, sign or speech or a combination to communicate with each other, writing systems were culturally developed and evolved slowly over many thousands of years; moving from drawings to pictograms (i.e., a pictorial symbol for a word or phrase), to logograms (i.e., a letter, symbol, or sign used to represent an entire word. A dollar sign is a logogram) to syllabaries (i.e., a table or listing of syllables) to alphabets (Beck & Beck, 2013; Moats, 2005). Alphabetic writing systems were developed to create a limited set of symbols that permitted individuals to match the symbols to the sounds they represented. As a result, individuals no longer needed to memorize thousands of unique symbols or draw pictures, but rather were able to match the symbols (i.e., the alphabet) to the sounds. Once individuals learned the symbol that represented the sound they were able to read the words by using the code. In contrast, sign languages are visual/gestural, spatially based languages that use a grammar system that is different from spoken and written languages. Native signers communicate by executing systematic manual (shapes, positions, and movements of the hands) and non-manual body movements (gestures involving eyes, eye brows, shoulders, cheeks, lips, and tongue) simultaneously. In addition, sign languages do not have a standardized secondary form, which means that it is not possible to read or write in sign. Therefore, no linguistic interdependence between L1 (sign) and L2 (written text) exists.

Third, a shortage of trained personnel who are fluent in sign and the written form of the dominant language exists (Baker, 1996). Many professionals are skilled in one language, yet not both. Fourth, although the first inception of bilingual programs in Sweden began in the early 1980s (Svar-

tholm, 1993) a lack of evidence to support broad-based interpretation and implementation currently exists (Marschark, Knoors & Tang, 2014; Spencer & Marschark, 2010). Although many educational programs for students who are deaf or hard of hearing have incorporated features of second language models, there has been a lack of research on the effectiveness of these approaches. The literature contains numerous articles and essays supporting bilingual education, yet the programs that have been implemented have provided little data to help others know what features are and are not effective. As noted by Knoors, Tang and Marschark, (2014), "researchers have concluded that bilingual deaf education may have a strong theoretical foundation, but simply lacks empirical evidence" (p. 15).

Recommendations

Optimize the Sensitive Period for Acquiring Language.

It is widely accepted that all children are biologically predisposed to acquire language (e.g., Lenneberg, 1967). Hearing children in all parts of the world, regardless of the complexity of their home language, acquire that language naturally and at similar rates. Research with hearing children indicates that the quantity and quality of parent - child interactions is a significant determinant of children's language and cognitive development (e.g., Dunst, Valentine, Raab, & Hamby, 2013; Fewell & Deutscher, 2004). The frequent experiences of engaging with rich and varied language from attentive caregivers provides young children with models for language learning as well as opportunities to practice understanding language, thus fine-tuning and strengthening the processing skills used for the purposes of communication. Similar to building any skill, the amount of practice that children experience in language processing has enduring consequences for the optimal development of brain mechanisms underlying linguistic fluency (Fernald & Weisleder, 2011). In contrast, children who demonstrate delays in developing language skills and linguistic fluency tend to exhibit clinical level behavior problems significantly more than their peers who develop age appropriate language skills (Hart, Fujiki, Brinton, & Hart, 2004).

Research with children who are deaf or hard of hearing has demonstrated similar results to those of their hearing peers when examining parent – child interactions. The quantity and quality of interactions has a major impact on the growth of language development for children who are deaf or hard of

hearing (e.g. Cruz, Quittner, DesJardin, & Marker, 2013; DesJardin, & Eisenberg, 2007). However, due to the "mismatch" between the hearing status of the child and parent, typical patterns of interaction may not exist. Research suggests that as a result of their child's language delays parents of young children who are deaf or hard of hearing tend to be more controlling, intrusive and directive in their interactions (Spencer & Marschark, 2010). As a consequence, the children may withdraw from interactions, initiate interactions rarely, and communicate less frequently, which may negatively affect language development, attention, and parent attachment (Cruz et al., 2013).

The language delays observed in young children who are deaf or hard of hearing may be due, in part, to the challenges that hearing parents experience in making adaptations in how they communicate with their child, the lack of verbal feedback that parents receive, or the difficulty of scaffolding the sound-oriented society that exists. Similar to hearing children, delays in language development increases behavior problems. Research (e.g., Austen, 2010; Barker et al., 2009) suggests that children who are deaf or hard of hearing exhibit higher rates of externalizing (e.g., aggression, violating social rules) and internalizing (e.g., anxiety, depression, social withdrawal) behavior problems than their hearing peers. Language delays interfere with emotional and behavioral regulation as well as executive functioning (i.e., attention regulation, planning, problem solving, and response inhibition) (Morgan & Lilenfield, 2000).

Research also indicates that children who are deaf or hard of hearing are likely to be read to less frequently than hearing children (Kaderavek & Pakulski, 2007). This may occur because (a) hearing parents feel that the book vocabulary and concepts are too difficult for the child, (b) they find it difficult to find a comfortable way to seat the child and hold the book to accomplish satisfactory visual contact, (c) they feel uncomfortable signing, or (d) they have a limited sign vocabulary (Stewart & Kluwin, 2001). When parent book reading does occur with children who are deaf or hard of hearing, the interactions are significantly different from those between parents and hearing children. The parents of children who are deaf or hard of hearing demonstrate increased levels of interrupting and questioning with fewer instances of connecting the text to the child's daily life experiences (Kaderavek & Pakulski, 2007).

The central issue and challenge for parents of children who are deaf or hard of hearing and educators who work with families and children is the development and high proficiency of L1, whatever the modality. Language is the medium for communication. It is also an indispensable ingredient of read-

ing, mathematics, and writing. It is a close partner of memory, translating facts and ideas into words, shaping how we understand, store and access concepts and providing internal control over behavior (Levine, 2002). It is currently accepted that there is a critical, or sensitive, period for language development that begins at birth and extends through the earliest years of childhood (e.g., Mayberry, 2007; 2010). Children who do not develop L1 during the sensitive period for language development will find it difficult to become fluent at a later age. "Indeed, the lack of early fluency in their L1 creates difficulties not only for the acquisition of their L2, but for their continuing L1 development, cognitive development, social development, and academic achievement" (Marschark, Knoors & Tang, 2014, p. 453). Consequently, parents of children who are deaf or hard of hearing need special support from very early on and ongoing facilitation in order to learn how to interact effectively with their children, especially if they want to use sign language.

It is also valuable to point out that the divide that often exists among professionals who align themselves with one communication approach as opposed to another (e.g., oral vs. sign) is detrimental to parents (Young & Tattersall, 2007). To date, there is no research to support the often stated contention that using sign interferes with children's motivation or ability to develop spoken language (Spencer & Marschark, 2010). In fact, the opposite is true. Yoshinaga-Itano and Sedey (2000) and Nussbaum, Waddy-Smith, and Doyle (2012) reported that students who use sign initially have an increased chance of developing intelligible speech because they acquire vocabulary early and have more opportunities and practice using their communication skills.

Create a Bridge Between from the First Language to the Second Language

Research with children who are deaf or hard of hearing and exposed to sign language from birth indicates that they acquire language on a similar maturational timeline as hearing children acquire spoken language (e.g., Morford & Mayberry, 2000; Petitto, 2000). Parents and educators who support the use of sign language as an L1 need to create a bridge from L1, (e.g., ASL), to the L2, (e.g., written English). Examples of strategies summarized by Luckner (2015) include the following:

Child-directed signing – Adult responsiveness to a child's eye gaze provides opportunities to name people and objects in the child's immediate environ-

ment. In addition, adults should sign at a slightly slower rate, increase the size and the duration of their signs, maintain a high rate of redundancy, and modify the placement of signs so they are within the child's field of vision (Bailes, Erting, Erting, & Thumann-Prezioso, 2009).

Fingerspelling – Fingerspelling is the use of handshapes to represent letters of the alphabet. Deaf parents of deaf children fingerspell to their children early and often. Adults should expose children to fingerspelling when conversing as well as when teaching in order to establish a manually based linguistic bridge between ASL and written English.

Storybook reading – Shared storybook reading is the joint use of picture books to talk about the pictures, read the text, and to discuss the ideas in the story. Storybook reading promotes an awareness of story grammar and provides opportunities for adults to introduce concepts of print such as the direction one reads, identification of letters and words, punctuation, capitalization, and to clarify the meaning of the story.

Chaining- Chaining is a multi-sensory teaching strategy for introducing vocabulary and concepts. Two frequently used sequences include (a) point to the word written on the board (e.g., tornado), (b) fingerspell T-O-R-N-A-D-O and (c) sign tornado, or (a) fingerspell T-O-R-N-A-D-O, (b) sign tornado, and (c) write tornado on the board. Use of pictures or objects may be used to as well.

Preview-View-Review (PVR) – This is a three-stage process. "Preview" is initially done to access background knowledge, provide an overview and to prepare students for the story or content of the lesson. This phase is conducted in sign. The second phase, "View," occurs in when students are exposed to the written material using books, a document camera, or a SMART board. The third phase, "Review," is the discussion of the story or the wrap up of the lesson that occurs in sign (Ga'rate, 2012).

Summary

Most individuals who are deaf or hard of hearing want to, need to, and benefit from being bilingual (Marschark, Knoors, & Tang, 2014). Additional reasons to support bilingualism for individuals who are deaf or hard of hearing include: (a) a strong positive correlation exists between sign language proficiency and reading comprehension skills (e.g., Chamberlain & Mayberry, 2008; Freel et al., 2011; Mayberry, del Guidice, & Lieberman, 2011; Twitchell, Morford & Houser, 2015), (b) a natural sign language serves as a potentially important part for deaf children's identity as a member of a linguistic-

cultural minority - the Deaf community, and (c) although the increasingly widespread implementation of newborn hearing screening, cochlear implantation, and access to advanced hearing technology is causing more families to choose listening and spoken language options as the primary communication approach for their child (Nelson, Lenihan, & White, 2014), none of these technologies can ensure that children who are deaf or hard of hearing are going to acquire spoken language during the sensitive period for language development.

In closing it is essential to point out that the population of children and youth who are deaf or hard of hearing is highly diverse and differ across a variety of factors including (a) degree of hearing loss, (b) type of hearing loss, (c) when hearing loss occurred, (d) when the hearing loss was identified, (e) whether or not early intervention services were provided, (f) if early intervention services were provided, the quality and quantity of the services, (g) use/benefit from hearing assistive technology, (h) home language of the family, (i) family attitude about hearing loss, (j) existence of an additional disability or not, (k) cultural identity, and (l) primary mode of communication they prefer. Consequently, it is highly unlikely that one educational approach will be optimal for all. In the past there have been successful individuals who are deaf or hard of hearing who used speech, others who used sign, and still others who used both. The bilingual approach is one option that will benefit some individuals. Additional research focusing on the successful implementation of bilingual approaches with families and in schools is critical.

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