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Strategies to address educational needs of students who are Deaf or hard of hearing

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Abstract

This paper addresses some of the educational needs of students with hearing impairments, for this group has unique learning needs especially in relation to language acquisition. Throughout the course of history there have been two dominant approaches to deaf education, oral (speech) and manual (sign language). Despite conflicting opinions between medical professionals and educators in the field of Deaf education, current research suggests that flexibility and an openness to utilise a combination according to the individual needs of the students is the best approach to forming language proficiency. This paper will use these findings to suggest a holistic range of effective management strategies for educators, which target the physical, academic, social, emotional and communicative wellbeing of deaf students.

Author's Note:

The Deaf community (people who are deaf or hard of hearing) have a strong history of common interests, sports and culture; and mainly use AUSLAN (Australian Sign Language) for communication. In this article a small 'd' is used when referring to the medical definition of deafness, while a capital 'D' is used when referring to people who are culturally Deaf. While the term 'hearing impaired' was seen as politically correct, the terms Deaf and hard of hearing are more frequently used today. This paper has been written to inform and assist teachers in 'included classrooms' where some students may be Deaf or hard of hearing.

Introduction

Deaf history reveals the tale of a hearing world that has neglected to listen to the needs of students who are Deaf or hard of hearing. A description of hearing loss, its causes and available treatment provide helpful insight into a variety of ways of providing education and support.

Current research suggests the best educational methods for language acquisition together with important management strategies for teachers to consider, revolve around supporting the physical, academic, social and emotional wellbeing of Deaf and hard of hearing students.

Deaf and hard of hearing students

The Deaf community is made up of a diverse group of people who have a wide range of hearing loss. Some Deaf people are able to hear at lower frequencies (deep sounds like drums and bass), but are unable to hear at higher frequencies (high pitch noise like vocals and guitar) and vice versa. Then there are Deaf individuals who are 'profoundly' deaf (Rochester Institute of Technology, n.d.), meaning that they are unable to hear any sound below 95 decibels. By definition, 'hearing impaired' classifies any individual who is "partially or completely deaf" (Hearing Impaired, 2017). Within the Deaf community, there are people with hearing loss who are 'oral' (primarily use speech) and individuals who primarily use sign language to communicate (as well as those who use both) (Edwards, 2012). These forms of communication represent the main approaches to deaf education, and have long been debated and pinned against one another throughout the course of deaf history.

History of Deaf Education

The first public school for the deaf was established

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in 1755 by De l'Épée. Located in his Paris home, De l'Épée was employed to provide two deaf twin sisters with a religious education. The girls used sign language as a primary means of communication and De l'Épée learnt it from them. De l'Épée understood that sign and gesture could express human thought just as effectively as spoken language, and he regarded speech and articulation of lesser importance (Périer, 2013).

Samuel Heinicke was a pioneer of 'oral' education of the deaf. In 1778, Heinicke established a school in Leipzig, Germany. Strongly opposed to sign language, Heinicke's method placed emphasis on teaching students to speak and enunciate clearly. De l'Épée was heavily criticised by Heinicke and his followers, as they considered sign language a detriment to the development of speech and proper enunciation (Périer, 2013).

During most of the 19th century, there was controversy between advocates of oral and manual approaches to deaf education. In 1880 an International conference for deaf educators was held in Milan to discuss which method was more effective. Advocates for manual (sign) based education weren't invited to the congress and thus were outnumbered and out-ruled. A vote was taken and it was decided that the purely oral method must be preferred, in schooling of the Deaf (Edwards, 2012). After several decades, American Sign Language was accepted in 1960, re-establishing the basis for manual (sign) based education worldwide. Australia followed with the acceptance of AUSLAN (Australian Sign Language) in the 1980s and it is now included in the Australian Curriculum.

One could say that over the years sign language and 'oralism' may have learned to co-exist. However, the medical industry generally advocates for oral education, in conjunction with the advancing technology of assistive hearing devices. Some contemporary educators still fear that employing sign language will detract from the development of fluent speech (Smith & Scherer, 2013). However, these educators neglect to recognise that not all assistive hearing devices are effective for every child. This can lead to adverse effects where Deaf or hard of hearing students are denied a language to communicate and are left isolated and unable to express themselves (Humphries et al., 2014).

Today, Australia has many schools that cater for deaf education. Some of these schools contain a deaf unit that is an extension of their mainstream system. These schools have adopted their own perspective on oral or manual education and will teach accordingly (Harris & White, 2013). Parents of deaf children are given the autonomy to choose their child's school on the basis of which communicative approach is used.

Causes & Management

Medically speaking, there are two major categories of hearing impairment: conductive loss and sensorineural loss. Each category is defined by the location of damage within the ear, which impacts the hearing process. Conductive hearing loss occurs when there is a problem conducting sound waves anywhere along the route through the outer ear, tympanic membrane (eardrum), or middle ear (ossicles). Conversely, sensorineural loss is any damage that has occurred in the inner ear or the vestibulocochlear nerve. An individual can have either or both conductive and sensorineural hearing loss depending on where the damage is located (Harris & White, 2013).

Causes of hearing loss are classified as either congenital or acquired. Congenital hearing loss is present from birth, usually detected via hearing screening or from the family history (can be of genetic or non-genetic origin). In contrast, acquired hearing loss is not present from birth, but is acquired at some point during an individual's life (Moore, 2010). The causes of both types of hearing loss are listed in Tables 1 and 2.

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Table 1: Non-hereditary causes of hearing loss

Causes of congenital hearing loss (non-hereditary) include:	
1.	Maternal infection
2.	Kernicterus (severe jaundice)
3.	Trauma during birth
4.	Medication toxicity

Table 2: Causes of acquired hearing loss

Major causes of acquired hearing loss include:			
1.	Noise exposure	1.	Tympanic (eardrum) membrane perforation
2.	Ototoxic medications	2.	Otosclerosis - abnormal bone growth in the middle ear
3.	Age	3.	Otitis media (inflammatory disease of the middle ear)
4.	Autoimmune disorders	4.	Obstruction of the ear canal
5.	Head trauma	5.	Cholesteatoma
6.	Acoustic neuroma	6.	Tympanosclerosis - calcification of tissue in the middle ear

Implications & Strategies

Deafness has a profound effect on a child's physical, academic, social and emotional development. In the context of a classroom, it is vital for educators to be aware of these unique learning needs, in order to implement effective strategies for improving language acquisition and education.

Physical Development and capabilities

In regard to physical development, some Deaf students experience difficulty with balance and gross motor skills. This is a result of dysfunction of the inner ear (Kid Sense Child Development Corporation, 2017). In the classroom environment, a teacher can assist students with these difficulties by modifying activities to the individual's physical ability level. Teachers should also ensure access to equipment which aids in developing balance.

Learning challenges

Academic achievement can also be a concern for parents with Deaf children. Research shows that students who are deaf or hard of hearing often experience difficulty in the following cognitive areas: language acquisition, speech development, sensory processing, literacy development (reading & writing) and sustaining focus for extended periods of time (Kid Sense Child Development Corporation, 2017).

Learning strategies and consequences

In acquiring a language to communicate, children with hearing loss will learn to speak and/or sign or a combination of both. Those individuals, who do select the purely oral method, will often use a range of hearing assistance devices to aid them (cochlear or hearing aids). In most cases, children who are born deaf are born into hearing families (Humphries et al., 2014). As a result, the purely oral method is often preferred. However, cochlear implants and hearing aids have varying success rates, and not all children who adopt this approach learn to speak and hear proficiently (Humphries et al., 2014). This fact can generate major consequences in relation to the student's language acquisition, academic achievement and psychological wellbeing (Kid Sense Child Development Corporation, 2017).

Similarly, students who learn sign language are mostly deprived of learning sign at a young age and don't learn it until they reach school age unless the family is committed to signing at home, therefore it is necessary for those around them to also know the language. In the case that family members, peers or associated teachers are unable to communicate through sign, the student becomes at risk due to a reliance upon speech alone (Humphries et al., 2014).

Current responses

Therefore, it comes as no surprise that current research suggests, that regardless of the method chosen, constrained language development contributes to behavioural and psychosocial difficulties (Fellinger, Holzinger, & Pollard, 2012). Furthermore, "the absence of early auditory stimulation and delay in acquiring language seems to affect neurocognitive processing domains, such as auditory and visual working memory, attention, and inhibition. Therefore, early access to auditory and linguistic experience is essential for development of spoken language, as well as cognitive and emotional control, planning, and organisation." (Fellinger et al., 2012, p. 1038). Currently paediatricians are recommending that Deaf children adopt both the oral and signing method for language acquisition in unison (Fellinger et al., 2012). This approach will ensure that children with hearing loss are not deprived of early language acquisition and are able to bridge the gap of communication with their families, peers and teachers.

Strategies for inclusive classrooms

Given that the large majority of hearing families do not teach their Deaf children sign language, it is of utmost importance for educators to understand how to cater for Deaf and hard of hearing students (Humphries et al., 2014). In the classroom environment, the teaching strategies listed in Table 3 can be used to assist Deaf and hard of hearing students.

The final concern for educators is the social and emotional wellbeing of Deaf and hard of hearing students. Statistics show that significantly higher rates of mental illness occur in people who are deaf than in hearing individuals (Alexander, Ladd & Powell, 2012). The language and communication environment of the family is a central element that impacts the psychosocial wellbeing of children with hearing impairment. When a deaf individual is unable to fluently communicate within the home, they are four times more likely to develop a mental illness than those in families who can. Fellinger et al., (2012) note that this same communication issue also leads to maltreatment in the school environment. Research shows that mental illness in deaf children is strongly linked with adverse experiences at school. Whether signed or spoken, poor language ability contributes to relationship difficulties with peers and teachers. Ultimately, mental distress can become increasingly worse in these individuals, contributing to behavioural problems, social exclusion and isolation (Fellinger, Holzinger & Pollard, 2012).

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Table 3: Teaching strategies to assist the Deaf and hard of hearing

To optimise learning in the hearing impaired, implement the following strategies.	
1.	Teach and use an official sign language (Auslan).
2.	Organise an Auslan Language Model (ALM) for classroom assistance.
3.	Use closed captioned videos.
4.	Visual emphasis should be provided in class. For example - written information – see 5, images and demonstrations.
5.	Write instructions on the board for visual reference.
6.	Use personal listening devices (PLD) and amplifiers in the classroom.
7.	Close doors and windows, and also turn off any unused electrical equipment, all to avoid interfering with PLDs.
8.	Make sure the classroom is well lit so the student can see you.
9.	Proximity is essential for lip reading, so have Deaf students sit at the front of the classroom. Do not try speaking across the room.
10.	Gain a Deaf student's attention before speaking to him/her - stand on a chair, stomp on the ground, wave your hand in their line of sight or turn the lights off and back on.
11.	When speaking – speak loudly and clearly using simple sentences. Avoid any simultaneous commentary.
12.	Always check for comprehension by the student.
13.	Retain focus by having frequent brain breaks.
14.	Develop an Individualised Education Program (IEP) that targets and develops the students challenging areas (place major emphasis on literacy skills).

Adapted from the sources: Nation Deaf Children's Society [NDCS], 2016; KSCDC, 2017

“*Organising an Individualised Education Program (IEP) is the effective way to begin involving students and their families in school-related decision making*”

Social and emotional considerations – The IEP

In order to support the social and emotional wellbeing of Deaf students, educators must strategise to target the following key areas: advanced language acquisition, communication in the family environment (through encouragement and discussion) and positive peer based relationships (with teacher facilitation). Organising an Individualised Education Program (IEP) is the effective way to begin involving students and their families in school-related decision making if this process has not yet been established. Teachers should do their best to encourage family participation and engagement in the classroom. In addition, an IEP will give educators the opportunity to discuss the importance of exposing students to both oral and manual language development. Some possible ways to ensure a high degree of language acquisition are: learning proficient Auslan, ensuring attendance at regular speech pathology classes, the use of assistive hearing devices and the practice of frequent reading and writing (Nation Deaf Children's Society, 2016; Kid Sense Child Development Corporation, 2017).

In order to avoid adverse experiences at school, it is crucial that teachers actively focus on including Deaf and hard of hearing students in the school

community. Teachers can help bridge the gap between the Deaf and hard of hearing students and their hearing peers by encouraging hearing individuals to learn some basic sign language and distributing learning resources. In addition to this, Deaf and hard of hearing students should be encouraged to socialise outside of the school environment. The Deaf community is a great way for students with hearing impairment to meet people and get involved in a variety of social clubs and sporting teams (Fellinger et al., 2012).

Conclusion

Overall, it is extremely important for family members and educators to be aware of the current research in Deaf education and its history. Archaic and ill-informed attitudes about spoken and signed languages among under-informed educators and other professionals can have severe consequences on successful language acquisition and overall well-being. Therefore, it is vital that educators implement strategies to support the physical, academic, social and emotional wellbeing of their Deaf and hard of hearing students. There are concerning rates of mental illness among individuals with hearing impairment, resulting from a lack of understanding from those around them and poor

Teaching & Professional Practice

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language acquisition. Through the implementation of effective management strategies, these rates can be reduced. Educators need to make a genuine effort to provide Deaf and hard of hearing students with more opportunities to become proficient in both oral and manual communication methods with the strategies suggested in Table 3. Further, encouragement and support for socialisation with their hearing peers in the classroom, will better facilitate the academic and personal success of Deaf and hard of hearing students. **TEACH**

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