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Teaching Reading and Writing to Students who are Deaf and Hard-of-Hearing

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Teaching Reading and Writing to Students who are Deaf and Hard-of-Hearing

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EDCI 590 Individual Research

April 2015

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Abstract

Research has shown that more and more deaf and HOH students have begun enrolling in public schools instead of residential schools for the deaf. However, with deafness being a low incidence disability many teachers do not have a strong understanding or knowledge of these students or how to teach them. The objective of the proposed research is to investigate various methods of teaching reading and writing to students who are deaf and HOH that will make these students more successful. In-depth interviews will be conducted with students who have went through public schools and students who have went through residential schools for the Deaf to determine how to improve literacy instruction. This research will provide teachers with more insight into how students who are deaf and HOH need to learn reading and writing and strategies to use to make these students reach their full potential.

Introduction

For the EDCI 590 project, I explored the topic of teaching reading and writing to students who are Deaf and Hard-of-Hearing (HOH). I conducted this research project through qualitative research, using in-depth interviews with the Deaf community in both hearing schools and Deaf schools. I also discovered more through research in books and articles.

I became interested in this topic through several factors. One is that I have always loved to talk with my hands, and I decided that if I am going to talk with my hands I should actually learn to talk with my hands. Due to this factor I started learning American Sign Language (ASL) in high school. Unlike my attempts at Spanish, I was able to quickly pick up on ASL. As soon as I started taking ASL I quickly started becoming interested in the Deaf world and culture, and made it to as many Deaf events as possible. In college I was a big sister for a student who was HOH. Now I am working towards a degree in ASL and interpreting ASL. I thought that this

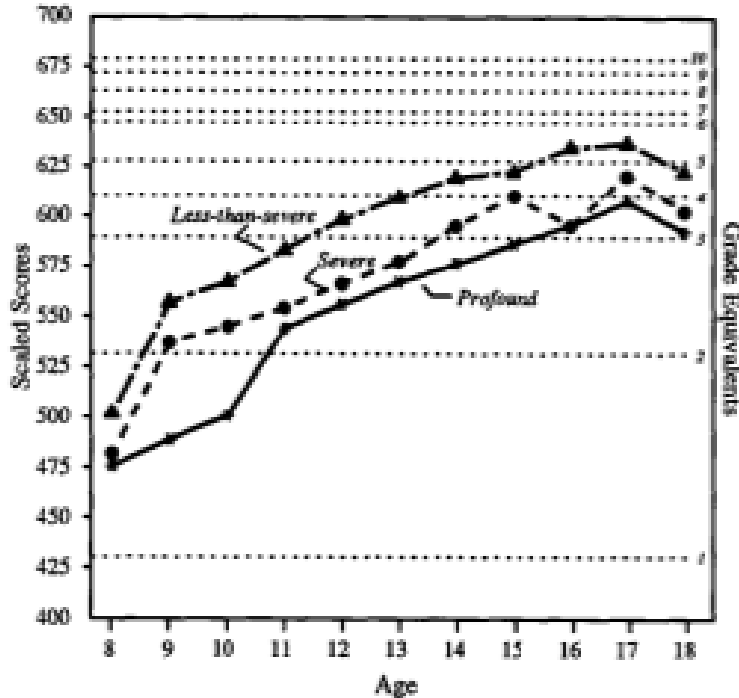
research project would be a great way to connect both my special education degree and my ASL degree.

The last reason I am so interested in this topic is that there does not seem to be a lot of research and information about this topic. Holts (2014) states that these students go through the public (and hearing) schools are always so far behind academically and I want to know how to bridge the gap for these students. Throughout the time that I have been teaching and taking ASL classes I have noticed a large difference between how hearing students are treated and taught and how those who are Deaf or HOH are treated and taught. It is assumed they are assumed that because they are behind in school and are struggling that they must be Special Education Section I.A.602 (3)(A)(i) of IDEA lists “hearing impairments (including deafness)” as a category in the definition of children with disabilities. Based on that law, students who are behind because of their disability qualify for “Special Education.” However, teachers should not always jump to the conclusion that students are in need of Special Education classes if they are behind. Teachers should possibly think about it could be the teaching style that the child is not learning from or that the student just needs extra help because they came from a different background then others.

More and more deaf and HOH students have begun enrolling in public schools instead of residential schools for the deaf ever since the Individuals with Disabilities Education Act (IDEA) was enacted (Briggle, 2005). However, with deafness being a low incidence disability, only 10% of all Americans have a hearing loss, many teachers do not have a strong understanding or knowledge of these students or how to teach them (Briggle, 2005).

I examined the data for reading scores for those who are Deaf and HOH compared to their hearing classmates and the scores where quite shocking and heartbreaking.

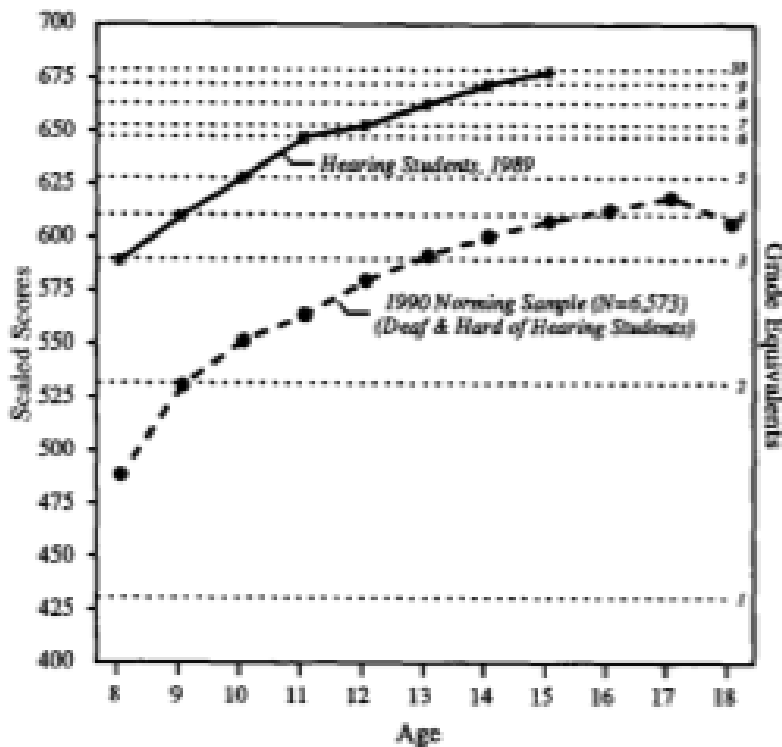
**Figure 3. SAT-8 Reading Comprehension
Median Scaled Scores, by Level of
Hearing Loss**



This graph, from Holts (2014, p 174), shows the scores of the Scholastic Aptitude Test (SAT) at different ages at different levels of hearing loss (less than severe, severe, and profound). At age 8 all students with a hearing loss read relatively close to the same level, which was somewhere between 1st and 2nd grade. The graph shows that those with a profound hearing loss at age 18, and graduating, are only at a third grade reading level. Those with a mild hearing loss are graduating at a fifth grade reading level. All of the levels of hearing loss had an overall increase in reading level by age 18 however at times they all showed some kind of loss in reading level as well as a spike in reading level. The students with a less than severe hearing loss showed a spike in reading level between ages 8 and 9 and they showed a loss at age 15 and age 18. The students with a severe hearing loss showed a spike between ages 8 and 9 and a loss at ages 16 and 19.

Those with a profound hearing loss showed a spike in reading level between ages 10 and 11 and a loss of reading level at age 18. While this graph shows the SAT scores between students with various levels of hearing loss, the following graph also does a comparison of SAT scores, but compares in a different way.

Figure 1. SAT-8 Reading Comprehension Median Scaled Scores



This graph, also from Holts (2014, p 173), shows the difference between hearing students and Deaf/HOH students. At age 8 hearing students were reading at a 3rd grade reading level and the Deaf/HOH classmates were reading between a 1st and 2nd grade reading level. At age 15 hearing students were reading at a 10th grade reading level while their Deaf/HOH classmates at age 15 were only reading at a fourth grade reading level. That is a dramatic difference, and it is something that needs to be corrected. Both hearing and Deaf/HOH students had increases in

their reading levels throughout their time in school, however Deaf/HOH students did see a drop in reading level between ages 17 and 18.

Existing literature discusses the many struggles that children who are Deaf or HOH go through. Literature also reveals different educational models and school systems that these students can have and the benefits/consequences/struggles of these various methods. Anita, Reed, and Kreimeyer (2005) tell us that about 75% of the deaf and HOH student population are receiving their education from a public school. From this number 42% are primarily in a general education classroom, 17% are split between a special education classroom and general education classroom, and 38% are in a self-contained classroom. There is concern about the quality of instruction that these students are receiving due to the classrooms not having enough opportunities for communication and interaction due to language barriers as well as hearing barriers. If most of the deaf and HOH population are in the public school system, shouldn't we have a solid knowledge of how to teach and assess these students? These students are getting placed into the special education classrooms because teachers do not have the understanding of how to teach these students properly, and because of this they are sadly not reaching their full potential. A good example of how they are not reaching this potential is from Trezek and Malmgren (2005) where they say that the standardized tests reveal that students who are deaf and HOH are at a fourth grade reading level when graduating from high school. However teachers need to remember what Briggie (2005) says, teaching should not be changed on a large scale just because you have a student who is deaf or HOH, but just adapted to provide meaningful instruction that is both developmentally appropriate and print-rich.

My project focused on the struggles that Deaf and HOH students go through in regards to learning reading and writing. My project also compares and contrasts Deaf/HOH students in a

hearing school to those in a Deaf school. My original research was done through interviewing Deaf students and their families in both hearing schools and Deaf schools. Another major part of my project was completed through reviewing the literature on methods to teach reading and writing to those who are deaf and HOH, their scores on tests, different educational models or school systems for these students to go into, and struggles that these students go through.

The remainder of the proposal includes a literature review on struggles and language of students who are deaf and HOH, the different models of teaching, the various strategies and instruction for teaching, and assessment of deaf and HOH students. I was very excited to research this topic. I gained knowledge through research and interviews that not only benefit my teaching, but the teaching of all educators of the deaf and HOH.

Literature Review

Struggles and Language

Crace, Ronco, and Hossler (2013) ask a great question in regards to parents and that is, “Why do parents seek other parents?”. They state this is how they learn, get questions answered, and become part of a group. Many parents go about finding information from other parents instead of looking online or through literature, and this is especially true especially when parents are going through something with their child that was unexpected and they don’t know what to do or how to handle it. This becomes especially true when a hearing parent gives birth to a deaf child. These parents can introduce other parents to events within their community that will offer support and will teach parents about resources to help them out more, such as schools for their children or classes for the parents. One set of parents from Crace, Ronco, and Hossler (2013) stated that an event they went to encouraged them to visit a preschool which immediately invited

their daughter in to join, and they didn't even know her last name yet. This preschool informed them of all the paperwork to follow, and they were sent home with books and videos go get started with signing at home. These parents from Crace, Ronco, and Hossler (2013) said that their "Journey into the world of American Sign Language (ASL)" began with that classroom. Now their bilingual household, originally German and English, held a new meaning, bilingual to them now meant ASL, English, and access into the Deaf world.

Trezek and Malmgren (2005) and Briggie (2005) discuss the struggles that Deaf and HOH students go through, especially in regards to language. Briggie (2005) makes the case that many students who are deaf or HOH when entering school are language delayed. A large part of how and when a deaf child acquires language has to do with their home life. Briggie (2005) says that children who are deaf and are born to hearing parents typically begin to learn language later, less consistently, and it is less useful. He says that these children do not share a language with their family, and on average their hearing loss is not identified until their first birthday. The environment for these children is significantly less linguistically rich. Briggie (2005) states that when these children live in a home with parents/caregivers who are hearing they are more likely to develop language at a later age. When learning a language with hearing caregivers Briggie (2005) states that children tend to learn language incorrectly or inconsistently, and this deprivation in language explains why 90% of deaf children with hearing parents experience delays as compared to those who are born deaf with deaf parents. Many of the children who have hearing parents are language deprived up until they enter school, and that could even possibly be their first time experiencing any language at all.

Luckner, Slike, and Johnson (2012) mention that most people do not even think about language acquisition and the process that occurs. They mention that most students enter into

school with solid background knowledge of oral and written language. This prior knowledge of language allows for their learning in school. “Virtually all school learning occurs through the medium of language. Not only do people need to acquire strong language skills to communicate with others, the very use of language enables people to acquire concepts and ideas and to sharpen their thinking” (Luckner, Slike, Johnson, 2012, p59). Luckner, Slike, Johnson (2012) state that those who are Deaf or HOH rarely come into the school with the same understanding in language, both oral and written. Luckner, Slike, Johnson (2012) say that vocabulary development and academic achievement are strongly related and students who are deaf or HOH, when compared to their hearing peers, are delayed in their vocabulary knowledge, have smaller lexicons, acquire new words at slower rates, and have a narrower range of contexts that result in word learning. Luckner et al. (2012) states that background/domain knowledge is a foundation for learning, understanding, and remembering facts that we are told to learn in school through stories, academic content, and textbooks, and people who already have a knowledge of a topic have a better recall and are able to elaborate better. In this context, “Background or domain knowledge refers to the prerequisite facts, skills, and concepts that students must already know in order to learn a new strategy, system, concept, or content” (Luckner, Slike, Johnson, 2012, p61). Luckner et al. (2012) says that students who are deaf or HOH typically do not have a sufficient amount of this background or domain knowledge due to their limited opportunities for accessing information, such as overhearing conversations, television, and radio, they have had more limited experiences, and they are not avid readers. Due to this when compared to their hearing classmates there are both qualitative and quantitative differences in world knowledge.

McKinley and Warren (2000) discuss children with Cochlear Implants. They say that performance of these children varies greatly and that it is difficult to say how well these children

will do. Some factors that effect how well they do which is age, onset of deafness, age of implantation, speech processor type, number of implanted electrodes, duration of deafness, communication mode, and duration of implant use. Another big factor is when they became deaf, prelingually (before speech) or postlingually (after speech). McKinley and Warren (2000) say that children who had prelingual deafness may not show immediate success. McKinley and Warren (2000) say that when they compared speech perception between children who received a cochlear implant and children who received a hearing aid, those who had the implant were significantly higher in speech and language then those with the hearing aids, and that was just after 12 months. Those with a hearing aid progressed in their speech/vocabulary development at a slower rate then those with a cochlear implant.

Although there is much attention on the differences and struggles of teaching students who are deaf and HOH, research suggests there are still many deficits in these children's learning, especially in the areas of reading and writing. Enns, Hall, Isaac, and MacDonald (2007) say that those who are deaf are at a disadvantage because they not only cannot hear, but also because they are unable to read and write. A key point that Briggie makes is the connection between a child's signing and their ability to comprehend sounds or spell. Briggie (2005) states that there are generalizations from children who are deaf about beginning sounds in words based on the word's hand shape. A handshape in ASL is defined as the shape of the hand and fingers when creating a sign. Trezek and Malmgren (2005) state that even with all of the additional attention there are still severe reading deficits for the deaf and HOH population. Students continue to graduate high school at a fourth grade reading level. They suggest that there is an extreme deficit in the scores of deaf and HOH students, especially when it comes to reading. In

addition to students struggling in writing, a large struggle for students who are deaf and HOH is reading, more specifically reading comprehension.

Models and Strategies

Drasgow (1993) says that even with all the widespread use of various systems to help with language instruction many people believe that the education of deaf students in American is a failure. Throughout the years the methods of teaching students who are deaf/HOH have changed dramatically. Drasgow (1993) says that between 1860 and 1960 the focus was on an oral approach focused on only on lip reading and artificial speech. After 1960 there was manual systems added as well as invented signs, and these all included syntax and morphology. Even more recently educators have favored using ASL for instruction, although there are still some systems such as manually coded English (MCE) and Total Communication (TC) being used. Drasgow defines MCE systems as “ MCE systems use English word order in which each word is encoded as a manual sign. These signs usually are borrowed from the lexicon of ASL” (Drasgow, 1993, pg 245).

One model of teaching students who are deaf and HOH is the bilingual-bicultural (bi-bi) model. Mayer and Akamatsu (1999) say that within this bi-bi model is the linguistic interdependence model, and this model argues that there is a commonality between the proficiency in languages. Therefore when dealing with deaf education they say that having a foundation in ASL can help in their learning of writing in English and they can do this without exposure through hearing English. Mayer and Akamatsu (1999) say that learning a second language can be difficult for any child, but it can be even more difficult for a deaf child, and that to help them change and grow educators need to work toward a model that highlights what we know about both language and child development. While Mayer and Akamatsu (1999) were

unable to find evidence of a correlation between oral language ability in the first language and the ability to read and write in the second language, they were able to find a correlation, and a large one, between reading and writing in the first language (ASL) and the ability to do the same in the second language (English). In this the first (or native) language is what the child was first taught and grew up with, ASL, and the second language is what was taught to them later in life, spoken English. Mayer and Akamatsu (1999) state that having a native sign language (ASL) is necessary for developing a first language (English), and that native language (ASL) can be used as a central component when teaching reading and writing to a student who is profoundly deaf. Going along with their idea that the two languages can intertwine and help one another Mayer and Akamatsu (1999) state two facts, fact one is that some of the lexicalized items in sign language resemble the written word, and fact two is that ASL is the bridge to help these students learn English literacy. Lexicalized signs are signs that are finger spelled in a way that looks like the sign. Drasgow (1993) discusses how in order for the bi-bi model to be successful the school system needs to fully accept and support ASL and accept it as a language. He states that along with accepting it as a language the school system needs to accept the culture and all that it has to offer. Drasgow (1993) says that in the real world language and culture are intertwined and cannot be separated, therefore we shouldn't try to separate them in the school system. At the very minimum there needs to be an exposure to the Deaf culture, and this exposure will help allow for a greater acceptance of the deaf/HOH students, and it will affect how these deaf/HOH students feel about themselves and school. Drasgow (1993) says that the exposure of these students will reduce the belief that deafness is a disability and will increase the belief that it is a difference. The bicultural aspect of the bi-bi model must be included in order for the model to be completely successful and have these deaf/HOH students believe they are competent learners.

There are ways that we can help deaf and HOH students and make learning more accessible to them and their families, as well as make them feel more welcome in the classroom. Briggie (2005) shares the following tips for families to remember in their teaching at home: model all encounters like a adult who was deaf would, use written language to communicate with others often, and keep up with learning American Sign Language (ASL). For educators Briggie (2005) states that even though most teachers are not ASL speakers, they can help make their students who are deaf feel more welcome and involved in the classroom by at least learning a few basic signs, and possibly even teaching the class some signs. When teachers do this, the student(s) will feel that the teacher cares about communicating with them. When writing, students will do better when they have a sense of ownership of their work, as well as when they are able to in written form as well as in ASL.

Briggie (2005) states that there is a strategy in teaching where students use finger spelling to help them with writing words in print. This strategy helps make the connection for these students between ASL and spelling, and with this their writing will improve. Briggie (2005) emphasizes that these students should be allowed, and even encouraged, to use ASL, especially finger spelling, as a strategy in the classroom.

Since deaf and HOH students are unable to hear, or hear very well, one important thing to do is make sure that learning is very visual for these students. Luckner, Bowen, and Carter (2001) says that in order to enhance communication and instruction for these deaf and HOH students we need to establish an environmentally rich learning environment, and they give some examples for ways to make the classroom more visual for these students. First, some instructional aids are signing, equipment/technology (examples: projectors, bulletin boards, computers), pictures, slides, graphics, and captioning. More ideas are having a classroom rules

chart, job and choice menus, transition time cards, posted daily schedules, and task organizers. Another big item that Luckner, Bowen, and Carter (2001) discuss is the use of graphic organizers in the classroom. These graphic organizers allow teachers to really emphasize the important concepts and show a connection between the concepts. Some of the patterns that graphic organizers can help show these students are hierarchical patterns, conceptual patterns, sequential patterns, and cyclical patterns. Not only are visuals important, but Luckner, Bowen, and Carter (2001) says that you need to teach these students how to access the information that is provided on these visual supports. They say that when you do this you can greatly improve student participation and understanding, and prepare these students for all of the visual supports found in daily life.

One way to help students learn better and access more parts of the world are through an interpretation service, even with a mild hearing loss and good speaking abilities this may be an important aspect of a HOH or deaf child's life. According to DesGeorges (2013) this is something that increased competence in sign language skills, access to communication/the world, enhanced social life through access to other people who are deaf, and help if and when needed.

Not all students, this includes hearing, deaf, HOH, English as a second language (ESL), special education, and gifted, learn the same way. Teaching needs to be adapted to meet the needs of all students in the classroom. Enns et al. (2007) say that opportunities are needed for creating and revising stories for these students in their natural language, ASL. By doing this the students will have a greater feeling of ownership and they will develop more metalinguistic skills. Due to the difficulties deaf and HOH students have in learning to read and write, Enns et al. (2007) say we need to change the language arts curriculum for students who are deaf to

incorporate bilingual principles, meaning-based strategies, and language processing that is visual. In the study done by Enns et al. (2007) there were 3 classrooms for deaf students, and in these classrooms they did a writers workshop every day for 3 weeks, and these workshops lasted between 60 and 90 minutes. In the workshop students prewrote, drafted, revised, edited, and published pieces of writing, with the key adaption in the workshop being the ability to create stories in both ASL and English. The findings from Enns et al. (2007) shows that there are three main themes from the teachers perspective which are: the role of ASL in developing English literacy skills, how critical metalinguistic awareness is in the writing and signing process, and the importance of having ownership in your own work. From the students perspective the three main themes are: how important self-confidence is, the use of the knowledge from ASL, and the feeling of ownership. This study shows that while learning and teaching skills is important, the key to making these students successful in the classroom is to make sure that all of their language skills are acknowledged and valued.

Since the No Child Left Behind Act was enacted there has been a shift in focus originally on student learning and now more towards an increased emphasis on student learning outcomes. Trezek and Malmgren (2005) state that just like their hearing classmates, they also could benefit from developing phonological processing skills at the beginning of reading. In this study researchers found that instruction in phonemic awareness and phonics can benefit students who are deaf and HOH. A control group and an experimental group were compared to one another. The control group continued to receive the standard reading curriculum while the experimental group received instruction from a phonics treatment package called Corrective Reading Decoding A. In this program they used the first 20 lessons. On the pretest both groups scored between 1 to 33 correct responses on the Matched-Pair Wilcoxon test (Trezek & Malmgren,

2005). On the posttest the students in the control group again scored between 1 and 33 correct responses, while the experimental group scored between 43 to 45 correct responses (Trezek & Malmgren, 2005). After the posttest, Trezek and Malmgren (2005) completed an analysis to discover any correlations between the amount of hearing loss and the performance on the posttest, and this showed that in the treatment group there was no longer a significant correlation between the two but in their control group there was still a significant correlation. Based on these results we can see that students who are deaf and HOH are able to learn and generalize the phonics skills taught to them. Easterbrooks and Stephenson (2012) say that this shift “requires teachers to implement strategies that will have the greatest impact on student learning.” Therefore they poured over articles and searched for the top strategies in literacy and math for students who are deaf and HOH. They identified ten strategies for literacy and then rated for the amount of evidence there is to support them. Out of the ten strategies they found only four of them had a strong evidence base. Easterbrooks and Stephenson (2012) found that there was much conflict over the instruction of phonics and phonological awareness. They also showed that teachers of the deaf and HOH were not very likely to scaffold reading through content area reading materials due to the lack of being convinced of the value of shared reading and writing. Furthermore, Easterbrooks and Stephenson (2012) said along with the effective strategies to teach literacy, teachers also need to find a way to bring motivation into your classroom.

Teaching a student who has a cochlear implant can be even different than teaching a student who is deaf or HOH. Stith and Drasgow (2005) say that when a teacher has a student with a cochlear implant come into their classroom the first thing they need to do is find out how long they have had the implant because the first six months are often a large adjustment for the child. They also need to know that while it enables the child to hear, it does not provide typical

hearing for them. For most of them they are still not able to talk on the phone, appreciate music fully, or understand speech from an audiotape or computer. These children must learn to interpret the meaning of sounds, and this takes a lot of repetition with no visual distractions, background noise, or any other sounds from the environment. Stith and Drasgow (2005) give some tips to the teacher for best supporting a child with a cochlear implant, some of these are checking to make sure the implant is working throughout the day, learn how to take care of the implant, reduce background noise in the classroom, use a frequency-modulated radio transmission (FM system) where you wear a microphone, alert the child to transitions in topics, make frequent eye contact, talk slower, and use outlines. Another idea that Stith and Drasgow (2005) gives is a buddy system. This is where a hearing child can be paired with a child with a cochlear implant to help them out. The hearing child can repeat directions and check for understanding, allow for social skills to develop further, make sure the child knows when assignments are due, and more.

Assessment

A majority of students who are deaf and HOH are entering into public schools instead of residential schools for the deaf, which raises concerns about their standardized high-stakes testing. Antia, Reed, and Kreimeyer (2005) completed a study on the assessment of writing for being deaf/HOH students. This study was completed over a period of 3 years, and throughout those 3 years 110 students, between grades 3 and 12, completed a writing test. This test had two parts, but only one part, which was a picture writing prompt, was given to the students. The students were given 15 minutes to write about the picture after they were shown, and were scored based on three areas, contextual conventions, contextual language, and story structure. Antia, Reed, and Kreimeyer (2005) found that their participants scored as follows 51% below-

average range, 32% average range, and 17% above average range. Also 5% of the students who scored below average scored a zero because they created an essay that was deemed unscorable. According to Antia, Reed, and Kreimeyer (2005) these findings show that in a general education classroom we need to look at and examine the impact of intensity, quality, and support in writing, as well as the access to interpretation and impact on writing instruction that has been interpreted. The findings from Antia, Reed, and Kreimeyer (2005) also show that even HOH students with access to oral English need additional support from both the general educator as well as the teacher of the deaf/HOH, and that writing instruction should be a large focus for any and all students with any form of a hearing loss.

As stated by Luckner, Slike, Johnson (2012), background knowledge plays a significant role in a student's ability to learn, store, and encode new information on any given topic, and those students who are deaf and HOH have a lack of this background knowledge. Luckner et al. (2012) suggests a variety of methods to test a student's knowledge prior to learning a new topic to see how much prior knowledge each student has, which according to these authors pre-assessing is one of the most important forms of assessment that educators can do. Some of their examples of pre-assessments are writing for one minute about everything they know about a given topic, create a web about the topic, and a know/what to know/learned chart (K-W-L chart). Luckner et al. (2012) say some other ideas are a graphic organizer, making books available for students at many different reading levels, creating a blog about the topic, and including virtual experiences about the topic.

All deaf students are different, they come from different backgrounds and they communicate differently, however one key idea is that reading comprehension is a barrier to their achievement in academics. In the article by Luft (2009), there were three students. There

was LeRoy, and he was a 6th grader who was deaf and communicated using both sign and voice. Yanetta was in 8th grade and also deaf. She had deaf parents and therefore her main method for communication was ASL. Last was Michael, and he was a 5th grade student, also deaf. He was in an oral program and used only his voice to communicate. All of their teachers decided to use a miscue analysis to help develop a plan for literacy instruction. Miscue analysis is defined as, “a structured observation of student reading in which teachers give students interesting and challenging material and systematically note errors as they read” (Luft, 2009, p 7). Luft (2009) says that when the miscue analysis was done for LeRoy, due to translation issues the teacher did not count any sign-related errors such as switching the wording big and large, and if he finger spelled where there is normally a sign it was marked that he did not understand. According to Luft (2009) LeRoy scored 86.6% accuracy. With that score on the miscue analysis the teacher decided that the focus needed to be on increasing comprehension and building decoding skills. At first look at Yanetta’s miscue analysis one might think she did not do a decent job. According to Luft (2009) Yanetta received a score of 96.88% on her miscue analysis. She showed a high level of bilingual fluency. Luft (2009) tells us that based on the score and miscue analysis the teacher needs to focus on building links between her experiences in life and what she will be reading. On Michael’s miscue analysis he received a score of 92.6%. Luft (2009) tells us that based on his score and miscue analysis he needs to work on building his middle and end of word sounds as well as self-monitoring and psycholinguistic strategies. Luft (2009) concluded that careful assessment using Miscue Analysis allows teachers to differentiate lessons based on the child’s form of communication and allows for teacher’s to understand their student’s skills and make their instruction and teaching strategies more effective.

Holts (1993) studied achievement data from a random selection of deaf and HOH students between the ages of 8 and 20, who were without mental retardation, but were receiving special education services, and took the SAT-8 in 1989. The findings from Holts (1993) are that these students are graduating on average with a fourth grade reading level, which is way behind their hearing classmates. At age 15 hearing students were reading at a 10th grade reading level, while on average deaf/HOH students were reading at a fourth grade reading level.

Methodology

I conducted my original research on how to effectively teach reading and writing to students who are deaf and hard-of-hearing. This was conducted through in-depth interviews. Before beginning my original research, I conducted a more thorough review of the literature relating to this topic, which guided me in finalizing my data collection and analysis procedures. The literature I was researching lead me to create my five research questions, which are as follows.

1. What factors in the school setting influence or hinder the teaching and learning of literacy skills of students who are deaf and HOH?
2. What are the appropriate instructional approaches to increase the teaching and learning of literacy skills of students who are deaf and HOH?
3. What strategies can teachers in the public schools use to increase participation and feeling of belonging to students who are deaf and HOH?
4. What factors before they entered the school setting influence or hinder the teaching and learning of literacy skills of students who are deaf and HOH?
5. What are deaf and hard-of-hearing students' perceptions of their school experiences relating to literacy?

The literature review answered the first four questions and the interviews answered the final question listed above. The literature used helped to form the basis of my interview questions. After creating these research questions I broke down what I was looking for and turned these

questions into interview questions. Before beginning my data collection, I obtained approval to conduct this research from the IRB, appropriate school officials, and interview participants.

The environment that I used for interviews is both residential schools for the Deaf and public schools. When I chose six subjects (which is two more participants than originally planned) to interview I focused on looking at the crucial factors such as age, gender, background, and current status or situation of individuals of my key focus. The population I gathered participants from is high school graduates who are deaf and HOH from both residential deaf schools and public schools. I specifically wanted half to be from public schools and half from private or residential schools. There were some criteria I used when searching for these participants. I looked for male and/or female young adults who have graduated high school within the last 10 years, they could be born hearing (if they became deaf early on), they were able to have a cochlear implant or hearing aid, they could have either hearing or deaf parents, and they must have attended either a deaf residential school or a public school. These students were located through reaching out to the local Deaf community, specifically the local Deaf church, and from there I was directed to all of my participants. All participants chose to use an interpreter of their own or to communicate with me without an interpreter.

The recording of the interview was done through a program on a Mac laptop application, Imovie, which allows for both auditory and video recording. This type of recording allowed me to record both the spoken and signed languages used, and what the subject said and what the interpreter said. All of the recordings were deleted after being transcribed. When conducting the interviews there were certain ethical practices that the interviewer had to observe. According to Creswell (2008, p. 11-13) these practices are respecting the rights of participants, honoring the research sites, reporting the research you gather completely and honestly, and using an ethical

context. Before meeting for the interviews participants were asked to indicate if they use ASL and if they felt they needed an interpreter. They were also asked if they wanted one supplied for them or if they wanted to bring someone they knew. Those who felt they needed an interpreter brought one to the interview with them. The interpreter needed to respect the rights of participants. Therefore I had the interpreter sign a confidentiality agreement before the interviews begin.

Before I began the interviews I introduced myself to the participant and explained to them why I am completing the research and why I am interested in this particular topic. During the interviews I used a semi-structured interview process where I had a set of questions to use, but I also pulled from the answers I received to get more questions, most of the additions were clarifications to what I had already asked. The questions I asked are as follows,

1. Are you deaf or HH?
2. Where you born deaf/HH? If not when/how did this happen?
3. Where your parents deaf or HH or hearing?
4. Preferred form on communicating with others?
5. Did you go to school at a public, private, or residential school?
6. What were some struggles (if any) you and/or your family went through before you entered school?
7. What were some struggles (if any) you and/or your family went through when you were in school?
8. What type of learner do you believe you are?
9. How were you taught to read and write in school? What were some pros of these methods? What were some cons?

10. If you could change anything about how you were taught to read and write would you? If so what would you change?
11. What strategies can teachers use to help make you more successful in reading and writing?
12. How did teachers make you feel included and accepted in the classroom? How did they not make you feel this way? Did this effect how you learned?
13. Overall, what did you think of your school years?

The goal is to probe as deeply as possible into the answers. When asking questions when I needed participants to elaborate about a topic I used a recommendation from Creswell (2008, p 229) where he suggests using probes such as “Tell me more”, “Could you explain your response more?,” “I need more detail,” and “What does ‘not much’ mean?” I would also rephrase my question if they participant did not fully understand the question or did not answer it correctly.

After the interviews were complete I transcribed all of the oral language on the tapes, including what was said by me, by the interviewees, and by the interpreter, as well as noting any nonverbal gestures and expressions such as laughter or upset looks that accompany the oral language. Once the process of transcribing was complete I coded the data, according to Creswell (2008, p 251), this is when the researcher makes sense of all of the data they have collected through dividing, labeling, examining, and collapsing the data. For the process of dividing the researcher is separating text and image pieces, and when you are labeling you are giving names to the various segments with codes. When you are examining you are looking for themes or overlap in ideas, and when you are collapsing you are making broad categories out of the data you received. There should be about 5-7 themed categories when completed. To code I first broke all interviews into two categories, public schools and private/residential schools. After

breaking them into two categories I began looking detailed into the data to find themes and key words within the groups. I found 5 themed categories within each group. The public school groups themes were hearing, frustration, ASL, visual, partner/pair, and communication (lack of). The private/residential groups themes were deaf, ASL, communication (lack of), struggles, visual, and sign. After all data was collected and coding/categorizing was completed I compared my findings to summarize. My comparison was between the results of the interview analysis to information for the literature review. To compare I broke up what was learned in the interviews into the three groups that the literate review had which were, struggles and language, models and strategies, and assessment. Upon completing that I then looked at the literature review sections and began my comparison. Both the results and discussion sections, when talking about my interviewees, will have a pseudo name. Through the interviews and research I discovered many strategies that have best helped them or caused difficulties for this population. This, in turn, will help me in the future as well as other teachers to teach successfully when we have a student who is deaf or hard-of-hearing in our classroom.

Results

Participant Demographics

Interviews were conducted with six participants, which was two more than what was originally outlined in methodology section. These six participants were all found through members of a deaf church in my community, some were members of the church and others were people outside of the church that members knew. I asked the pastor of the Deaf church for help in finding participants, and he connected me with the lady who is the leader of the deaf community at the church. This lady then connected me with members of the church, and these members either personally helped or connected me with someone outside of the church to help.

All the participants signed consent forms. Each person was very willing to help, and after the interviews they offered to help further if needed later on in the research. The interview process began January 19th 2015 and ended on March 8th 2015. Five of the six were deaf and the other one was HOH. Three of the participants were born deaf, one became HOH due to an injury as a child, and two became deaf as a baby due to an illness. There was only one participant that had any deafness already in her family; she had a deaf mother and sister. All of the other participants had only hearing family members. All of the participants preferred using ASL to communicate with others, one was fine with using voice with family only, and two were fine with using lip reading in addition to ASL. Out of my six participants half went to a public school for their schooling and the other half went to a private or a residential school. This section is broken down to compare and contrast those who were in public schools and those who were in private/residential schools.

Public School

The major themes that were found within the public school group were hearing, frustration, ASL, visual, partner/pair, and communication (lack of).

One important concept to think about in order to fully understand what these participants went through during school is to dive into what they went through before entering schools. Out of the three public school interviewees two were deaf and one was HOH. They were all born hearing but two went deaf early on due to an illness and one went HOH due to an injury. All three of the interviewees had parents and family members who were hearing. Due to the fact that they were deaf/HOH and all of their families were hearing all three of their largest struggles growing up before entering school was communication, both the lack of it and difficulty of it. The girl who was HOH also stated that speech therapy prior to entering school was a difficulty

for her. She said that this was a difficulty because it was trying to force her to use more hearing than she had. One interviewee, Kelly, stated, “There was no communication between us. I had no way to talk to my family.”

Once they entered school and throughout their years of school there were many difficulties for all of the individuals, mostly from lack of help and patience from the teachers. One interviewee, Ruby, stated, “Everyone, including the teachers, wanted me to be “normal” and tried to keep me ‘hearing’”. Ruby knew that she did not have enough hearing to make that possible and wished that she had someone who would help her in the classroom and wouldn’t treat her so coldly. Just like Ruby wanted help and someone to support her, Kelly discussed her longing for an interpreter so that she could fully understand what teachers were trying to teach her. When she was finally placed in a classroom with others who were deaf and received an interpreter she said, “I was so thrilled, and I felt fit in for the first time with other students.” The interviewee who was HOH, Beth, along with not having help in the classroom had a larger issue she discussed. She stated, “I had problems with the teachers having no patience with me. They would treat me really badly and accuse me of things, for example when I would be sitting in the front row and the teacher would pass me I would turn around. They would always think I was cheating or doing something wrong.”

While in school their ways of being taught were all quite different. Kelly said a lot of her learning to write happened through pictures, Ruby said a lot of her learning to read and write was through repetition which she said was extremely difficult for her, and Beth stated that without getting a tutor outside of school she didn’t think she would have learned how to read and write. Kelly stated that while having her learn to write through pictures and gradually changing into writing, she wished that she had been made to write more throughout her years so that she would

have become a better writer. Beth stated that she was the first HOH person that her teachers had ever had to work with, so they did not really know how to teach her, and during Beth’s interview the interpreter added this statement about Beth’s schooling, “During my many conversations with Beth, she has shared with me that when growing up both of her parents were very involved in her education. Her father was a very strong advocate for Bridget in school. If there were any issues he was there at the school for her. The parental involvement, I believe, is one of the main reasons Beth was so successful.”

The strangest statements from the interviewees came from Ruby. Ruby stated this about her teachers, “One teacher demanded I wear hearing aid in his class because his mother in law could hear perfectly with hearing aid. He refused to understand otherwise.” She also said this about her school years, “I felt blessed I grew up with caring friends. I did miss out on a lot by attending public schools.”

Comments Related to Public Schools		
Thematic Comment Category	Number of Comments	Key Terms Used
hearing	3	Hearing, sick, injury
frustration	3	Struggles, hard time, demanding, missed out, no patience
ASL	3	Use it with them, know it, use it with others
visual	3	Learning style, classroom
partner/pair	2	Others like them, accepting, helpful, extra help

communication	3	No communication, hard time, difficult
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This table displays the major themes that were found within the interviewees from the public schools. Along with showing the major themes, it also shows how many out of the three possible participants said something related to the theme as well as key terms the participant used during the interview. This table shows that while they were very frustrated and found communication lacking or difficult there are many ways to help them succeed in the classroom.

Private/Residential School

The major themes that were found within the private/residential group were deaf, ASL, communication (lack of), struggles, visual, and sign.

Again it is important to think about, in order to fully understand what these participants went through during school, what these participants went through before entering schools. Out of the three private/residential school interviewees all were deaf and they were all born deaf. Two of the participants had only hearing family members, and one, Sarah, had a mom and sister who were also deaf. All the participants said that they prefer to communicate with others through ASL. Since Sarah had family members who were also deaf she did not have any troubles before entering school, however Chris and Julie did. Julie does not fully remember what struggles she had before entering school; however she does remember that she was terrified to go to school for the first time because school would have a of lack of comfort in communication since the ways her and her family found to communicate without a language between them would not be used at school. Chris stated that communication was an extremely difficult thing between him and his family.

During his school years Chris said, “In private school children picked on me. I had no interpreters or anyone to help me in classroom.” Learning reading and writing for Chris went as follows, “The teacher would write the word, then showed picture of word, then spoke the word, next I put my hand on her throat while she said the word, and then learned how to form it on lips and say it. It was all sight words and had to memorize all the words taught. Because it was oral the teacher would say word behind a paper and I would try to guess what she was saying.”

About school Chris said, “I always felt left out and not included. I was frustrated most of time. Many times I didn’t understand and other students wouldn’t write things down for me. I had a very negative experience and I try not to think about it too much.” Much like Chris, Julie also had a tough time throughout school. Learning reading and writing for Julie went as follows, “English class forced us to read and write, there was very little help from the teacher.” Julie said that while she was in school, “In public school the teacher put me in front of the class to lip read. The problem is, I can’t lip read everyone in the class- I was lost.” Sarah had a completely different viewpoint of her school years than Chris and Julie. She stated that, “No struggles in school for me because both Deaf and hearing teachers had to sign to us which made it easier for me.” Learning reading and writing for Sarah went as follows, “I learned to read before going to school. My mother would read (sign) books to me. She would point out words to me and sign. If there was a word that I did not know I would ask my mom and she would tell me the word and sign. When I was at Deaf school the teacher would write new vocabulary words on the board and teach the sign for the word. We would then look up words in the dictionary and write sentence with the words. Afterwards we would share our sentences in class.”

All three of these participants had some advice for teachers who work with students who are deaf and HOH. The advice that Chris had for teachers was as follows, “I would have my

teachers know sign language and sign while teaching me to read and write. I would like for teachers to always use total communication approach, always make eye-contact before teaching, never have back to deaf student while talking, use lots of pictures, play games, and just make learning fun.” Some advice that Sarah had was, “Change up how you test, make it more enjoyable to learn many subjects, and have more discussions in the classroom. We would learn more and participate more when talking with everyone.” Julie’s advice is, “In order to read we need to understand the words we are reading, and that needs to be taught or we need to be shown how to do.”

Comments Related to Private/Residential Schools		
Thematic Comment Category	Number of Comments	Key Terms Used
deaf	3	Premature, family
struggles	2	Negative experiences, difficulty, scared, forced, lost and confused
ASL	3	Use it with them, know it, use it with others
visual	3	Learning style, classroom
Use sign	3	Total communication, helps learn
communication	3	No communication, hard time, difficult, lack of

This table displays the major themes that were found within the interviewees from the private and/or residential schools. Along with showing the major themes, it also shows how many out of the three possible participants said something related to the theme as well as key terms the participant used during the interview. This table shows that with help of visuals and

sign the students can learn and will understand better, but without it there will be great difficulty and many struggles.

Discussion

The discussion section will be comparing and contrasting three main points that were previously referenced in the literature review and these points are struggles and language, models and strategies, and assessment. These were large ideas that I found were very important in knowing and understanding when teaching those who are deaf and HOH. Throughout the interview process these three themes largely stuck out, especially the themes of struggles and language.

Struggles and Language

Four out of six of the participants stated that they had major communication issues before entering school, which made entering school difficult due to lack of communication and the background knowledge of language. One did not remember how it was before entering school but remembered not knowing a language when entering school and the last one had a solid foundation of communication and language due to having a mother and sister who were also deaf. Briggie (2005) makes the case that many students who are deaf or HOH when entering school are language delayed. A large part of how and when a deaf child acquires language has to do with their home life. Briggie (2005) says that children who are deaf and are born to hearing parents typically begin to learn language later, less consistently, and it is less useful. He says that these children do not share a language with their family, and on average their hearing loss is not identified until their first birthday. The environment for these children is significantly less linguistically rich. Briggie (2005) states that when these children live in a home with parents/caregivers who are hearing they are more likely to develop language at a later age. Five

of my participants stated that entering school was what finally gave them ways to communicate with the world around them, even if it was a way that they did not care for. Briggie (2005) states that many of the children who have hearing parents are language deprived up until they enter school, and that could even possibly be their first time experiencing any language at all.

Models and Strategies

Every single interviewee when asked what their learning style said visual. Not one person believed they were not, however there were two who believed that in addition to being a visual learner they were also a kinesthetic learner. Since deaf and HOH students are unable to hear, or hear very well, one important thing to do is make sure that learning is very visual for these students. Luckner, Bowen, and Carter (2001) says that in order to enhance communication and instruction for these deaf and HOH students we need to establish an environmentally rich learning environment, and they give some examples for ways to make the classroom more visual for these students. First, some instructional aides are signing, equipment/technology (examples: projectors, bulletin boards, computers), pictures, slides, graphics, and captioning. More ideas are having a classroom rules chart, job and choice menus, transition time cards, posted daily schedules, and task organizers. Another big item that Luckner, Bowen, and Carter (2001) discuss is the use of graphic organizers in the classroom. These graphic organizers allow teachers to really emphasize the important concepts and show a connection between the concepts. Not only are visuals important, but Luckner, Bowen, and Carter (2001) says that you need to teach these students how to access the information that is provided on these visual supports. They say that when you do this you can greatly improve student participation and understanding, and prepare these students for all of the visual supports found in daily life. When asked about their schooling the major struggle for all of them was in understanding and

communicating, their teachers were not very visual, which made learning more of a challenge for these students. Their learning was more about memorization than anything else.

Two of the students who appeared to have less challenges in school both had one thing in common, and that was being paired with someone similar to themselves. They were both given partners who were also deaf or HOH, and this made them both feel more included and accepted. According to DesGeorges (2013) this is something that increased competence in sign language skills, access to communication/the world, enhanced social life through access to other people who are deaf, and help if and when needed.

Assessment

Five out of six participants stated that they had struggles with reading and writing throughout their school years. The one who did not struggle was Sarah, and she said she was able to successfully learn to read due to her mother reading to her in ASL every night and teaching her the words. These students said that they did not comprehend most of what they were reading or writing because they did not understand it, they did not have the language skills or background knowledge to be able to. Luckner, Slike, Johnson (2012) stated that background knowledge plays a significant role in a student's ability to learn, store, and encode new information on any given topic, and those students who are deaf and HOH have a lack of this background knowledge. Luckner et al. (2012) suggests a variety of methods to test a student's knowledge prior to learning a new topic to see how much prior knowledge each student has, which according to these authors pre-assessing is one of the most important forms of assessment that educators can do.

Overall, there were many connections between the research and what was discovered through interviews. Deafness and HOH is not a common thing to find within the classrooms and

when it is found there are a few things to remember when teaching them. Many who are deaf or HOH do not come into school knowing a lot of language so when they enter into the school system there needs to be a print-rich environment with many visuals around the classroom as well as preteaching vocabulary before a unit begins.

Limitations

There were two major limitations to this study. One was the lack of research on teaching people who are deaf and HOH. The other was a lack of multiple data collections.

Recommendations and Implications

If this study was to be completed again the only thing I would do differently is to add more ways of uncovering answers about how these students are taught in schools. I would want to observe a reading and writing lesson in at least two classrooms in each environment, public and private/residential. I would also want to survey some current high school graduates to get their opinions since the learning is current.

I feel that this research can greatly help all teachers, but especially teachers who work with students who are deaf or HOH. When teaching a student who is deaf or HOH we need to make the classroom as visual as possible, use pictures, power points, technology, charts, daily schedule, etc. For these students the more visual and the more examples they see the more successful their learning will be. Teachers should use strategies such as pre-teaching the vocabulary with the use of visuals, examples, and similar words. When there is someone who is deaf or HOH in your classroom make sure you are using total communication (using both ASL and speaking) with them to make sure they are taking in all of what is being taught, and do your best to never turn your back to them while teaching. Teachers need to make ALL students love to learn, which means that we need to get to know our students, their needs, their wants, their

learning styles, etc. It is our job to help make every single student feel appreciated, cared about, and to help them succeed. Do your research/homework if you get a student in your classroom that you don't know how to teach (ex: special ed, gifted, deaf, HOH, blind, etc). If you cannot find something online ask someone to help you out. There are always people you can talk to in order to learn more. Lastly, something that is crucial to remember and consistently think about is that we, their teachers, are important in students' lives and how we treat them/how we teach them makes a huge impact on their lives.

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Appendix A

Research Questions

14. Are you deaf or HH?
15. Where you born deaf/HH? If not when/how did this happen?
16. Where your parents deaf or HH or hearing?
17. Preferred form on communicating with others?
18. Did you go to school at a public, private, or residential school?
19. What were some struggles (if any) you and/or your family went through before you entered school?
20. What were some struggles (if any) you and/or your family went through when you were in school?
21. What type of learner do you believe you are?
22. How were you taught to read and write in school? What were some pros of these methods? What were some cons?
23. If you could change anything about how you were taught to read and write would you? If so what would you change?
24. What strategies can teachers use to help make you more successful in reading and writing?
25. How did teachers make you feel included and accepted in the classroom? How did they not make you feel this way? Did this effect how you learned?
26. Overall, what did you think of your school years?