
Writing with Four Senses: A Hearing Impaired Person's Writing

LAUREN PERRY

Produced in Laurie Uttich's Spring 10 ENC1102

Fifty-one million people out of a total estimated population of 300 million in the United States have a disability. Within that 51 million, about one million have some sort of hearing impairment; this is one million people that may or may not have a fully developed literacy due to their impairment (U.S. Census Bureau). I am one out of that million people. I have severe hearing loss in my left ear and moderate hearing loss in my right ear. I am obviously not of normal hearing, but I do not exactly fall into the deaf category either. Since I reside somewhere in between the two extremes, I have come to believe that hearing impairment—mild to severe—affects a person's writing development.

Hearing impairment affects a person's writing in various areas. Research has identified some of these areas, such as grammar errors, syntax, writing strategies, and others (Antia, Reed, and Kreimeyer; Marschark and Spencer; Mayer; Paul; Yashinago-Itano, Snyder, and Mayberry). Even though researchers may stress different points, this is not to say that some areas are more important than others. Researchers have studied different areas of writing in hearing impaired students of a specific age or span of age levels, but there has not been research on the consistency of the problem areas over a length of time. As a result, it must be determined if, after progressing through school, hearing impaired students still show the same writing errors related to their hearing impairment.

Foundation of writing skills

An individual's literacy is dependent on his or her development of language. How could one expect a person who does not have a full understanding of his or her own language to write a comprehensible piece? A child begins to learn language very early on; this is why hearing tests and early intervention are stressed at an extremely young age. Children with more interaction and a better understanding of their language tend to transition into writing easier than others (Mayer). Hearing impaired children with knowledge in American Sign Language (ASL) tend to have better chances when it comes to literacy, but many hearing impaired people do not have definite knowledge or experience with ASL. Therefore, if a person is hearing impaired, has limited to no experience with ASL, and has difficulties with his or her spoken language, then the person has little understanding of any language and will have great trouble with writing. No matter the age level or degree of hearing loss, hearing impaired individuals are "mapping a written system onto a reduced set of understandings of the language" (Marschark and Spencer). The understanding of language sets a large precedent for the development of writing.

Writing differences and errors among hearing impaired students

Even though it is noted that hearing impaired students develop parallel to normally hearing students, hearing impaired students still differ or make errors in various aspects of writing (Mayer). Each of my sources claims some of the same or different weaknesses or errors in hearing impaired people's writing; therefore, each source will be noted for its specific perspective on the subject. For example, it was reported that hearing impaired students typically lack severely in the development of their syntactical skills; more specifically, they "use fewer cohesive markers or fewer different lexical devices to signal cohesion" (Marschark and Spencer; Antia, Reed, and Kreimeyer). It was also discovered that a hearing impaired student's writing tends to consistently show an introduction of ideas, but failure to fully develop or establish said ideas due to a lack of semantic and syntactic skills (Yoshinaga-Itano, Snyder, and Mayberry).

Not only is the comprehension of a hearing impaired person's writing affected, but the production of the writing itself is not strong. Marschark and Spencer and Antia, Reed, and Kreimeyer agree that hearing impaired people tend to not have a broad vocabulary or to use extensive word variety. Also, compared to their hearing counterparts, hearing impaired individuals are not able to produce complex sentences or have ample sentence length. Researchers have noted that hearing impaired students "made errors of addition (adding unnecessary words), omissions (omitting necessary words), substitutions..., and word-order deviations (inappropriate word order)" (Paul). The attention brought to these errors was significant, but there was no conversation about the significance of the errors themselves.

Overall, it can be summarized that hearing impaired students struggle with the mechanical and organizational skills of writing (Paul). All of these discoveries and statements made about hearing impaired students must be taken with caution because not every source's information is entirely accurate for every situation. There are a wide range of variables that affect something as broad as writing and they cannot all always be taken into consideration. However, it is safe to assume that hearing impairment leads to differences in both writing development and writing itself.

What can still be learned?

Although there were several captivating studies on the writing development of hearing impaired people, I did not find any information on the consistency of grammar errors, writing styles, and other areas of writing over time. For instance, Yoshinaga-Itano, Snyder, and Mayberry's study discussed the possibilities of how a person's writing differs over age levels and by hearing loss, but these researchers and others have not considered anything related to how hearing impaired individuals may have consistent problems in writing that are related to their hearing impairment. This may be difficult to study because researchers would need to have many writing samples from participants and the study would have to consider the multiple variables that would affect the writing.

I decided that I am going to limit these difficulties by doing a study on myself. Considering I have had a hearing loss since I was in middle school, I decided my own writing samples would be the best to study. My overall theory for this personal study was that I would find a consistency in the areas that I have chosen related to hearing impairment over a period of time represented by the writing samples. For this analysis, I focused on punctuation errors, word repetitiveness, word choice, sentence structure, and development of ideas.

There are a wide range of variables that affect something as broad as writing and they cannot all always be taken into consideration.... I decided that I am going to limit these difficulties by doing a study on myself.

Methods

For my experiment, I have nine writing samples, three each from my junior and senior years in high school and three from my freshman year in college. I chose the three samples “Argument Essay,” “Chapter 1 Reaction Paper,” and “Free Response Essay” because of the limited amount of choices I had from my junior year in high school. For my senior year in high school, I selected “It’s Easy Being Green,” “ELP #1,” and “Final Exam Essay” because I wanted variety in the types and purposes of the samples. Furthermore, I thought it was important to select papers from different classes. As for my first year in college, I decided on “Paper 4,” “School Uniforms,” and “Research Plan” because they, too, represent a variety of papers. For more information on the writing samples I chose, see Table 1 below.

Table 1: General Information on the Writing Samples

Title - Writing sample	Year/School status	Teacher/ Class	Purpose	Type	Pages
“Argument Essay” - WS #1	2007/HS Junior	Butler/AP English	Followed a story that was read	Semi-Formal	3.5
“Ch.1 Reaction Paper” - WS #2	2007/HS Junior	Jaap/Intro to Psychology	Opinion on chapter	Informal	2
“Free Response Essay” - WS #3	2008/HS Junior	Butler/AP English	Prompt essay	Formal	2.5
“It’s Easy Being Green” - WS #4	2008/HS Senior	Rallo/English Composition I	Semester Research Paper	Formal	6
“ELP #1” - WS #5	2009/HS Senior	Glover/AP Microeconomics	Newspaper article review related to class concept	Formal	2
“Final Exam Essay” - WS#6	2008/HS Senior	Powell/Sociology	Response to video	Semi-Formal	2.5
“Paper 4” - WS #7	2009/College Freshman	Kallina/US History	Possible alternatives in history	Formal	2.5
“School Uniforms” - WS #8	2010/College Freshman	Koger/Intro to Teaching	Research project	Formal	2.5
“Research Plan” - WS #9	2010/College Freshman	Uttich/English Composition II	Response to Essay	Semi-Formal	almost 2

After collecting and organizing the data for the samples and creating a chart in which to log my findings, I began analyzing the samples by the following criteria: punctuation errors, repetitive words, word choice, sentence structure, and fully developed ideas. The process for each analysis was repeated throughout.

First, I read through the sample one time and only noted confusing areas or parts that I thought could be developed more. I also observed if the argument of the paper was backed up with evidence and if the argument was weak or strong. This was pertinent for the category of fully developed ideas. It allowed me to look at the paper as a whole before I critiqued specific areas of the paper.

Next, I reread the paper, sentence by sentence, to find any kind of punctuation errors. It was very important for me to go sentence by sentence because it allowed me focus on the information on a smaller level. If I had not done this, I would have merely viewed the sentences grouped together in paragraphs which, in turn, would have made me focus on understanding what the paragraph itself was saying, rather than the mechanics of each individual sentence.

Subsequently, I began to read the paper through again, this time looking at word choice, repetitive words, and sentence structure. As I read it, I noted any words I felt that I had seen too many times. I counted the number of times each word was overused with the help of Microsoft Word's word find. I also made distinct remarks on the sentence structure throughout the sample. The areas of sentence structure I focused on were length (findings of fragments or run-ons), syntax variety, and word positioning in sentences. Finally, but importantly, I commented on the paper's word choice. The Flesch Reading Grade Level assessment on Microsoft Word helped me determine the sophistication and complexity of the words used in the writing samples. For each paper, I highlighted a few areas throughout the paper and took note of the Flesch Reading Grade Level stated. Also, as part of word choice, I examined word variety.

I feel that the personal interest I have in this study gives it tremendous strength. The personalization of my study may inspire educators, scientists, or anyone interested in this topic to see the subject from a different perspective.

At the end of each group of samples (junior, senior, and college freshman), I made notes on what I thought any of it could possibly mean. In addition, I wrote my thoughts regarding each of the individual criteria for every group of samples. At the very end of all nine samples, I made some overall notes concerning my findings.

As a student, I want to believe that my method of analysis was the most efficient, but as a researcher, I know it is not. Like any study, mine has its weaknesses and strengths.

Despite the fact that my study provides specific and detailed insights into the writing of a hearing impaired person, it cannot be generalized for a broad population; this raises a problem. If my research does not help a general population, then what good is the information? Rather than provide these sorts of concrete answers, I see my research as a starting point. The information I found can help build a case study that could be generalized for the hearing impaired population. It could also compete with studies that have already been done and lead researchers to search for more answers.

I feel that the personal interest I have in this study gives it tremendous strength. The personalization of my study may inspire educators, scientists, or anyone interested in this topic to see the subject from a different perspective. However, at the same time, some may view my personal investment in this study as a biased perspective and I would have to agree. Since I am the researcher of the study in addition to the subject being researched, it presents some conflict. Although I have tried to remain as objective as possible throughout the entire study, it is possible that I may have allowed my personal bias to slip in.

Another weakness of my study is the fact that I may not have used enough samples. I only used three samples to represent an entire academic year. Three pieces of writing cannot form an adequate representation of each school year. However, I think it is important I used writing samples from different classes to give a more balanced representation of each academic school year.

Furthermore, we must take into account the circumstances, besides hearing impairment, that may have influenced my writing. These include factors such as the teacher and the class the piece of writing was for, the things I was going through at the specific time in my life, how much time I spent on the writing sample, the type and purpose of the paper, and so on. There are an overwhelming number of factors that could be taken into consideration; consequently, all of my results must be taken with caution.

Last but not least, I feel confident about my choice of research methods; I think it was the most appropriate way to go about my research. For example, I read through each sample three times, each time focusing on different criteria. I felt this was the best way to go about it since, if I had only read each sample once, I would have overwhelmed myself trying to look for all of my criteria in one reading. Reading for everything at once would have led me to miss important findings. However, since I broke the criteria into separate parts, it enabled me to be more focused on the specific areas I

was looking at; as a result, it allowed for a more accurate read of the individual sample.

Another crucial part of my methods was looking at my own writing versus samples selected randomly from strangers. I chose my own writing samples because I felt that I was able to trust my own writing more than samples from strangers. Also, I would most likely not have been able to get enough writing samples from one individual with a hearing loss to answer my research question. With another person's writing samples, I would have had no background knowledge of the participant without ample conversation and contact. Without any knowledge of my participant, I would not have known the other factors that might have influenced that person's writing. The lack of trust I would have had in the writing samples would have affected my confidence in the information and shown throughout this entire research paper. For all of these reasons, I believe that my methods of research were strong and sufficient.

Results

My results were not quite what I had expected. I expected to see quite a noticeable consistency within each of my specified criteria, but that was not the case at all. My results can be seen in Table 2 and the following discussion.

Table 2: Results

Title - Writing sample	Punctuation Errors	Repetitive Words	Word Choice	Sentence Structure	Fully Developed Ideas
"Argument Essay" - WS #1	25	"different" - 4 "throughout" - 3 "by" - 6 "that" - 7	Vocabulary coincides with grade level.	Beginning to middle show good sentence length. Middle to end has run-ons. Minor confusing areas.	Yes. Logic may be flawed in areas, but ideas are backed up.
"Ch.1 Reaction Paper" - WS #2	9	"everything" - 4 "thing(s)" - 4 "that" - 11	Vocabulary coincides with grade level.	Beginning is okay. Middle to end is confusing. Seems generic, broad, and not very specific.	Kind of developed. Sentences are repetitive. Doesn't always flow from point to point. Bad separation and transitions from idea to idea (paragraph indents).
"Free Response Essay" - WS #3	16	"by" - 8 "that" - 16	Vocabulary coincides with grade level.	Sentences run on a little bit more than they should. Transitions are better than previous samples.	Ideas are fully developed.
"It's Easy Being Green" - WS #4	14	"then" - 5 (within first two pages) "that" - 24	Vocabulary coincides with grade level.	Structure varies quite a lot, but it has to do with the content of the paper, describing processes. It is kind of simple.	Ideas are absolutely fully developed. It's a research paper, so everything had evidence.
"ELP #1" - WS #5	14	"that" - 11	Vocabulary is sufficient. Word choice is good.	Very simple. Run-ons, can't disconnect a thought.	Kind of weak, but yes.
"Final Exam Essay" - WS#6	17	"better" - 5 "that" - 15 "country" - 8 "think" - 8	Vocabulary is sufficient. Word choice is good.	Pretty bad. Fragments and run-ons. A lot of sentences are confusing because they are worded incorrectly. A lot of unnecessary words or incorrect ones.	Not really at all. Quite disorganized. Doesn't make sense. Things are introduced, but not explained. Phrases with no definitions.
"Paper 4" - WS #7	5	"that" - 14	Vocabulary is	Very good. Only one or	Explains one situation that I

			very good.	two poorly worded sentences.	mention. Otherwise it is very good.
"School Uniforms" - WS #8	9	"that"- 20 "student(s)"- 14	Word choice is just okay. Word variety is not great.	Fairly good. Alternating sentence length.	Yes, all ideas are developed and backed with evidence.
"Research Plan" - WS #9	6	none	Vocabulary and word choice are average.	Pretty good. Short and long, representing rhetorical choices.	Quite organized and thorough.

Regarding punctuation errors, my junior year in high school collectively (WS #1-3) had the most errors. Then my senior year samples (WS #4-6) came in second, and my freshman year in college samples (WS #7-9) had the fewest. However, WS #4-6 had 45 errors, which is very close behind the WS #1-3 group's 50 errors. Therefore, there was only a consistency between junior and senior year in high school because in my freshman year at college the number of errors came to a total of 20.

Next, I examined word repetitiveness. WS #1-8 had anywhere from two to four repetitive words in each sample. One of the repetitive words WS #1-8 shared was the word "that." Besides "that," both WS #1 and 3 used the word "by" between six to eight times. WS #6 and 8 had repetitive words that correlated with the writing sample's topic; WS #6 used the word "country" eight times and WS #8 reused the word "student(s)" fourteen times. WS #9 had no repetitive words. Since almost every single sample had at least two repetitive words and such words were repeated a considerable number of times, I concluded there was a consistency in word repetitiveness.

Each writing sample had sufficient and quality word choice. I noted on WS #1-7 that the word variety was indeed sufficient. However, on WS #8, I commented that the word choice did not demonstrate much variety. For instance, the title of WS #8 is simply "School Uniforms." Any teacher would agree that this title is not captivating or thought-provoking. The title is only sufficient because it simply informs the reader of the essay's content. WS #9 had average word choice; it was not spectacular, but it was not exactly poor. The following excerpts are from WS #9: "To write better," "thought of," "I plan on," "I want to see," "to think," "would like to know," "I would look," and "I have done." WS #9 is barely two pages long; I provided eight excerpts from WS#9 that represent the average word choice.

I conclude that the application of passive voice is due to a hearing impaired person's inefficient development of language. This discovery may call for further research into a hearing impaired person's use of passive voice.

Each writing sample differed in the quality of word choice. The Flesch Reading Grade Level assessment scores varied greatly for each writing sample for every group. For example, WS #1's randomly selected passages were all above the 12th grade level even though I was only in 11th grade at the time. As for WS #2 and #3, their scores varied anywhere from 8th to 12th grade. The following two groups

of writing samples seemed to follow the same format; at least one of the writing samples in its group was on or above grade level, whereas the other two in the group were anywhere from a little to significantly below grade level.

Writing samples #1-6 showed consistency in insubstantial sentence structure; whereas, WS #7-9 showed decent rhetorical choice in sentence structure and maybe one or two errors within the sentence structure. WS #1-6 have consistencies with run-ons, confusing word order, and simple—instead of complex—sentences.

Last but not least, I looked at each sample for fully developed ideas. Writing samples #2, 5, 6 were the only ones to have incomplete or weakly developed ideas. It was noted that the ideas lack evidence or had poor transitions between thoughts, which caused confusion. As for writing samples #1, 3, 4 and 7-9, they showed consistency in the development of ideas through writing.

Discussion

Although my results are not what I expected, they are still significant. First of all, I believe the severity of hearing impaired individuals' punctuation errors in writing is due to their inability to hear the pauses in speech; thus, it translates into their writing. My results indicate a consistency of punctuation errors between my junior and senior year, but not for my college freshman year. My theory was proven true until I came upon the results for my college freshman year; I speculate the consistency did not translate into the third group of writing samples because I began to wear my hearing aids for my first year in college. While hearing aids are not a cure for a hearing impairment, they helped tremendously in my particular situation, most likely because I was not severely hearing impaired in both ears, but just one. The hearing aids facilitated a balance of hearing between my two ears that I had not had before, allowing me to understand people very differently.

Though I did not find a complete consistency in punctuation errors, I did find consistency in word repetitiveness. One of the words used repeatedly throughout writing samples #1 and 3 was 'by.' The word 'by' is typically associated with the use of passive voice. The use of passive voice sometimes causes confusion within a paper. I conclude that the application of passive voice is due to a hearing impaired person's inefficient development of language. This discovery may call for further research into a hearing impaired person's use of passive voice.

Almost every single writing sample showed adequate word variety. However, I feel this was the case because, recalling my experiences with writing—as well as with the particular writing samples used in this experiment—I constantly had to use a thesaurus or the synonym tab on Microsoft Word. My papers usually begin with many basic words and, after some switching and flipping, I have a sufficient word variety. The reason for my basic vocabulary is possibly because I did not have a severe hearing loss until the age of 12 and, by that age, I had already developed a basic vocabulary consistent with a middle school student. After my hearing worsened, it is possible that I was unable to comprehend or hear complicated words, consequently causing me to maintain a somewhat middle school level vocabulary. It does not mean that I do not understand or use bigger or more complex words, because I do. However, as mentioned in the very beginning of the paper, interaction with language is essential to a person's literacy and my interaction with language became limited at the age of 12, therefore limiting the development of my vocabulary.

Although word variety was sufficient, word choice varied greatly throughout each writing sample. It is a theory of mine that the higher Flesch Grade Level scores directly correlate with the complexity of the ideas within the paper. For example, the very first writing sample, Argument Essay WS #1, scored above 12th grade level throughout the paper. This paper called for opinions, ideas, and complete thought processes, which made for more complicated word choice and sentence structure. WS #8, "School Uniforms," is the direct opposite of WS #1. "School Uniforms" was a simple paper that asked for straightforward opinions on a subject; therefore, the word choice was not as complicated for WS #8 as it was for WS #1. All of this can only lead me to believe that word choice does not relate to hearing impairment, but to the kind of paper that is being written.

My theory that, after progressing through school, hearing impaired students would still show the same writing errors related to their hearing impairment was incorrect.

The results showed that almost all the writing samples demonstrated a problem with either run-ons or fragments. This relates to hearing impairment because it is possible the hearing impaired person may not hear an entire conversation or the pauses in spoken sentences; as a result, his or her writing may have more run-ons and fragments. It can be difficult for a hearing impaired person to understand how to begin and end a thought before moving on to another. Another note under sentence structure was that the sentences were confusing or worded incorrectly, which leads me to believe that this may have to do with passive voice. Once again, this reinforces the need for further research into the role of passive voice in a hearing impaired person's writing.

Finally, my findings on the development of ideas throughout the writing samples were mixed. I found no evidence of consistency in idea development. This finding leads me to consider that hearing impairment does not have a great effect on the complete development of ideas or, at the least, other factors affecting the full development of ideas had far greater influence than hearing impairment.

Even though I found some consistencies in each category, they were not absolute. My theory had been based on the thought that my writing would have reached its peak within my junior or senior year, so I was not expecting to see much change throughout the three years of school. Therefore, my theory that, after progressing through school, hearing impaired students would still show the same writing errors related to their hearing impairment was incorrect. My writing had changed over the period of three years; although some areas of error exhibited a relationship to hearing impairment and showed a consistency, other areas had improved or were better than I thought they were.

Conclusion

I am confident that a few different studies could arise from my research. Take, for instance, the study of passive voice within a hearing impaired person's writing. Also, I think a study with more participants than mine would definitely be useful in getting more conclusive findings. In addition, I would like to see more research in the area of punctuation errors because I feel that my findings were not definite.

My research project may have revealed more questions than answers. Still, many could benefit from this information. I feel that hearing impaired people would profit the most from my research. The information is advantageous because it raises awareness for hearing impaired people's literacy. However, on an individual level, I think awareness of the kinds of errors within one's writing that one might be prone to would allow an individual to take the necessary precautions to prevent these errors from happening. I personally feel that once a teacher points out a mistake I have made repetitively, I take the proper measures to prevent it from happening again.

There is still more to be learned about the hearing impaired community. This research project did not only present quantifiable results and detailed explanations, but it introduced a broad picture. My overall hope for the readers of this paper is to understand that a disability does not automatically predetermine a situation. After I read many scholarly studies and books that repeatedly made comments regarding those with hearing impairments and the traits they tend to exhibit, I inferred that, without proper attention focused on a person's disability, one might possibly exhibit almost all of these traits. It seemed quite possible that, over a period of time, the hearing impaired person would continue to express these traits. However, I discovered that, with conscious efforts, proper education, and sheer willpower, I was able to overcome the effects of my own impairment.

An interesting revelation I had from this entire experience was that, during my time in high school, I constantly felt that I was not learning anything, that I was not improving. Nevertheless, after doing this research project, I realized that I had, in fact, been learning and progressing the entire time without realizing it. It is truly amazing what one learns when putting oneself under a microscope.

Works Cited

- Antia, Shirin D., Susanne Reed, and Kathryn H. Kreimeyer. "Written Language of Deaf and Hard of Hearing Students in Public Schools." *Journal of Deaf Studies and Deaf Education* 10.3 (2005): 244. Web. 15 March 2010.
- Marschark, Marc, and Patricia Elizabeth Spencer. "Writing: Characteristics, Instruction, and Assessment." *Oxford Handbook of Deaf Studies, Language, and Education*. New York: Oxford UP, 2003. 123-35. *NetLibrary*. Web. 1 March 2010.

- Mayer, Connie. "What Really Matters in the Early Literacy Development of Deaf Children." *Journal of Deaf Studies and Deaf Education* 15.2 (2006): 1-21. Web. 15 March 2010.
- Paul, Peter V. "The Development of Writing." *Literacy and Deafness: The Development of Reading, Writing, and Literate Thought*. Massachusetts: Allyn and Bacon, 1998. 93. Print.
- U.S Census Bureau. United States Census Bureau, 2010. Web. 15 March 2010.
- Yoshinaga-Itano, C., L. S. Snyder, and R. Mayberry. "Examining Written-Language Assessment and Intervention: Links to Literacy: How Deaf and Normally Hearing Students Convey Meaning within and between Written Sentences." *Volta Review* 98.1 (1996): 9-38. Web. 15 March 2010.