Advances in Social Sciences and Management
January 2024, Vol-2, No-1, pp. 24-35.

American Sign Language and English Proficiency Among Children with Disabilities

Sumali Junuthula

1. Independence High School

Abstract:
A continuous cycle of mistreated children is being neglected in the education system. The debate on using American Sign Language (ASL) as a teaching mechanism in the education system for disabled children is ongoingly debated without a decisive conclusion. In order to advance this field of study and promote impartiality to disabled children in their educational pursuits, this study pitches this question: how does teaching in ASL impact the English grades of children with disabilities? A case study revealed many research papers, experiments, and studies that persistently contrasted each other. One paper detailed the negative side effects of learning ASL as a first language on the children's English language skills while another asserted ASL as directly factoring to improvements in the children's English proficiency. Based on this case study, a methodology and study design are spelled out circling on applying a field experiment with a control group and an experimental group dividing up a section of 16–18-year-old children with autism, dyslexia, and deafness. In this experiment, the control and experimental groups will receive teaching on an English language skill, one in pure English and the other in ASL. Once the lesson is concluded, both groups will partake in a pop quiz and the results are compared. The expected result is a positive correlation between ASL and English proficiency.

Keywords: American Sign Language, ASL, English Proficiency, English Language Skills, Social Psychology, Disabled Childre, Autism, Dyslexia, Deafness

INTRODUCTION

In a world where communication lies at the basis of human interaction, the essence of non-verbal communication is neglected. This evinces difficulty for people leaning on the likes of sign languages. American Sign Language (ASL) is a particular form of signing that, despite its absence of sound, is composed of phonological segments that determines ASL as similar to spoken languages, including English (Lidell & Johnson, 1989). Deaf people are commonly associated with plying ASL, yet research suggests that even the non-deaf were capable of utilizing ASL to overpower their communication disabilities, pinning ASL as a universal language (Toth, 2009).

Despite the grasp ASL holds in contemporary communication, its importance diminishes when planted into reality, precisely in education. Anne Toth (2009), Head of Data Policy at the World Economic Forum, conducted a research project covering deaf children between the ages of 0-6 years old diagnosed with autism, Down Syndrome, Fetal Alcohol Spectrum Disorder, and other learning disabilities. The author claimed that deaf children and hearing children displayed augments in their vocabulary acquisition and application of the oral language. ASL, in this study, is contemplated to benefit disabled children in learning spoken languages. Building off this, Markku Jokinen (2009) expressed dismay at the lack of research on the consistent end of deaf people falling victim to "linguistic genocide", the tragic practice of forcefully destroying a

language, in this case, ASL. Although sign language should be accepted as a mother tongue for the deaf, this natural human right is denied to them around the world, as the author urges.

Critically, ASL is neglected in education such as at schools and universities, where ASL is the direst component in serving proper education to disabled children (Robinson & Henner, 2018).

In order to study the link between ASL and English for disabled children, my research raises this question: How does teaching in ASL impact the English grades of children with disabilities?

This research zooms into three specific disabilities: autism, dyslexia, and deafness.

Autism is the "primary defect in terms of a language or coding problem" (Rutter, 1968).

Furthermore, dyslexia is a "neurodevelopmental disorder that is characterised by slow and inaccurate word recognition" (Peterson & Pennington, 2012). Finally, deafness was coined as hearing loss factored by genetics and environmental factors (Sheffield & Smith, 2019). Focusing on these distinct disabilities, in spite of their loose relation to each other, permitted the ability to develop an overall understanding of all the disabled children while also scoping into the disabilities most availed by ASL. Each of the three disabilities had unique factors that had to be considered during the experiment and required individual research to be gathered.

LITERATURE REVIEW

Importance of Communication

When families have a disabled child, the lack of knowledge on how to nurture their child disrupts familial relationships (Sen & Yurtsever, 2007). Families place their trust in schools to tend to their children. For the education system to place its foremost endeavors into caring for disabled children, the incorporation of ASL in teaching is highly debated. Education relies on the proper use of communication and effective translation of knowledge from the teacher to the student especially for a disabled child suffering from autism, dyslexia, or deafness where information could be easily lost in both the teacher's and student's absence of understanding each other. Dammeyer (2010), in his study of a Danish population, characterizes the significance of communication through their study of psychosocial difficulties in children with hearing loss.

They conclude with a clear implication of the importance of communication despite the barrier of hearing loss supported by the reasoning that if the sign language and oral language skills are adequate for hearing loss children then they do not have a significantly higher level of psychosocial difficulties. Communication, besides seizing the core of human interaction, also assists in understanding the difficulties and ability levels of children suffering from disabilities. The key takeaway is the efficacy of communication whether it be through oral languages or sign languages (Dammeyer, 2010).

Literacy Development in Dyslexic Children

In the discussion of the language skills of dyslexic children, one controversial issue has been the high-risk children are at for having reading difficulties (Hulme et. al, 2015). Hulme and his co-authors, in a study on early language skills and dyslexic children, insisted that "variations in reading skills are highly correlated with variations in oral language skills" (pg. 1). The author didn't mention the service of ASL in the early ages of children at the risk of dyslexia, but the nature of reading skills correlating to oral language skills. Building off the previous statement, another study corroborated

that reading comprehension itself is governed by the children's decoding skills as well (Storch & Whitehurst, 2002). Eighteen years later, Snowling and their partner's study (2020) advance the field through the notion of dyslexia falling on a spectrum of IQ and the importance of taking action towards students with poor decoding abilities. Decoding abilities not only alter reading skills but also might sway how ASL impacts English proficiency for dyslexic children. Thus, the reason for the vague expected results equipped later in the paper and the desperate need for this experiment to clarify the best teaching method for dyslexic children, to apply that to instruction, and to deliver superior and fruitful education to students.

Sign Language Pronouns by Autistic Children

Sheild and his associate investigators (2015), who concentrated on autistic children developing ASL at an early age due to having deaf parents, report that at the weeny ages of one and two, autistic children consistently switched up pronouns such as "me" and "you" (pg. 3).

Further, "[t]here is some evidence that linguistic symbols which have motivated, non-arbitrary (iconic or indexic) forms can be beneficial to both first-language (L1) and second-language (L2) learners" and "are faster at matching signs and pictures when those pictures resemble iconic qualities of the sign" (pg. 3). In other words, signing has evidence of aiding the user in learning other language skills. The ability to use sign advances the child's visual and correlating skills, in turn, driving them when learning other languages. Bonvillian, Nelson, and Rhyne (1981) agree with Sheild and his partners' general claim by declaring that speech skills for autistic children can be gained from simultaneous signing. Signing follows effortlessly for autistic children as in the sample of 100 autistic children for this study, all of them exhibited exemplary techniques in sign language.

Deaf Children's Bilingual Abilities

In Freel and her researchers' (2011) study on deaf children's ASL proficiency and reading abilities, it was uncovered that "a significant positive relationship between a measure of ASL proficiency and a measure of reading skills, was supported [by the data]" (pg. 21). They also emphasize that "teachers of the deaf often do not take advantage of ASL skills as a bridge to English literacy" urging for ASL as a teaching mechanism in deaf children's education (pg. 1). A need for ASL grammar courses and the lack of it in schooling is mentioned as well, a contrast to how all children all required to take English and English grammar courses. Mounty, Pucci, and Harmon (2012) from Gallaudet University support the previously mentioned authors by illustrating the strengths of deaf children's bilingualism in ASL and English. In essence, ASL, based on the case study and experiment conducted by Freel and her investigators and Mounty and her partners harbors pivotal information on the high leverage of ASL in the education of English for deaf children.

Gap

Current research on ASL and disabled children comprised various studies on individual disabilities: autism, dyslexia, and deafness. Other auxiliary pre-existing studies examined ASL and the constituents that altered it. However, there was short of pre-existing studies that tethered on ASL affecting English language skills among these disabled children. There is research studying the interdependence between ASL and deaf children, enough to develop a background understanding of the topic but not enough to make resolute conclusions on how ASL affects disabled children, not simply children that are deaf, and how ASL alters English proficiency specifically, rather than the entirety of the children's education. The foremost rationale to pinpoint this topic was to figure out the distinctive correlation that exists between ASL, children with disabilities, and English language skills. This correlation is paramount as it can provide teens and the education system an

understanding of whether ASL can improve disabled children's understanding of English language skills. The ongoing debate on whether ASL has positive or negative repercussions on English language skills was especially a concrete reason to dig deeper into this area of psychology.

Hypothesis

As presented in the literature review, the broad extent of this topic is fixated on a mixture of positive and negative influences of ASL on English language proficiency for disabled children. In the current study, I predict that the time spent teaching ASL will be positively associated with increased English reading skills and overall higher quiz grades among disabled children.

METHOD

Study Design

The design will consist of a field experiment to observe the natural setting of the classrooms. Students suffering from autism, dyslexia, and deaf children will be divided into two groups: a control group and an experimental group. Both groups will be taught a lesson on the English language. The lesson will be approximately an hour long and the control group will learn the lesson in English while the experimental group will be taught in ASL. Once the lesson is complete, both groups will receive identical pop quizzes on the material. The entirety of the pop quiz will be constructed by classic multiple-choice questions. Some reference questions will be provided to base the official questions from when performing the experiment. In order to avoid other variables from disrupting the flow of the experiment, the teacher instructing the lesson will be the same for both groups to ensure the lesson reaches the participants equally. There will also be an "Additional Information" section that gathers light, qualitative data on the participant's family history with disabilities and ASL and their own experiences with how ASL influences their mastery of the English language. All the questions in this section are optional and used solely for the purpose of analysis. Any questions that will reveal the identity of the participant will not be shared with anyone but the investigator. The analysis and data can survive with a one-time pop quiz but to gather more accurate and exact results, the study can take place throughout a month with pop quizzes every week, each time with a new lesson, and increased time spent teaching the lesson.

Participants

Participants are required to be between the ages of 16 and 18 with a focus on the large suburban school districts in North Texas. This demographic was categorically chosen to represent this study as teens have comprehensive and detailed pre-existing research that advances this study. Furthermore, the ages are closer together and will allow for the lesson to be taught to an age range that will grasp it. Once the questions for the experiment are finalized by the teacher based on the lesson being taught, the Informed Consent Form (see Appendix A) along with a detailed overview of the experiment will be submitted to the Institutional Review Board (IRB) denoting that participation is anonymous and participants are free to leave whenever during the experiment. This will also ensure the ethicality of the study design and practices. As soon as the IRB approves the procedures, the experiment will flow as described. Approximately 40 to 60 participants are ideal for this study.

Research Instruments

Quantitative data will be collected through the multiple-choice questionnaire. The number of questions each participant answered correctly will be recorded and grouped into the categories of autistic, dyslexic, and deaf children. Then, the average number of correct answers from the three categories within the control group will be calculated as well as the average number of correct

answers from the three categories in the experimental group. The average can be calculated by combining the number of correct answers of each person in the specific category divided by the amount of people in the category. This is the mean number of correct answers earned by the particular category in either the control or experimental group. The numbers of each category in the control group will then be compared to the number of the corresponding category in the experimental group. Following this, other measures such as median (middle number of correct answers), mode (most occurring number of correct answers), standard deviation (dispersion of the data set), range (difference between the greatest number of correct answers and the least number of correct answers), and even a box-and-whiskers plot (a type of graph measuring minimum, Q1, median, Q3, and maximum) can be used to analyze the data set flawlessly. Questions for the pop quiz can also be gathered from recent STAAR tests, but the questions in Tables 1-5 are drawn from "Test Your Language", a free language test website to calculate the user's language proficiency. Table 1 focuses on testing English grammar.

Table 1: Example English grammar questions based on "Test Your Language"

Q1	Q2	Q3	Q4
Don't be too loud.	Samantha …… her	He is …… out the	There …… in
Bob …… to take a nap.	teeth as soon as she wakes up.	trash.	Chicago.
A.	A.	A.	A.
try	brushes	taking	snows
B.	B.	B.	B.
tries	will brush	took	snowed
C.	C.	C.	C.
tried	brush	take	is snowing
D.	D.	D.	D.
is trying	is brushing	is taking	is snow

Table 2 displays example English idiom questions from "Test Your Language".

Table 2: Example English idiom questions based on "Test Your Language"

Q1	Q2	Q3	Q4
What is the meaning of "face the music"?	What is the meaning of "hit the nail on the head"?	What is the meaning of "stick your neck out"?	What is the meaning of "an old hand"?
A. control the situation	A. accept the consequences	A. risk it	A. tired
B. take the risk	*B.* memorize it	*B.* watch out	*B.* an old person
C. accept responsibility	*C.* absolutely right	*C.* look in front of you	*C.* lazy
D. agree	*D.* experience	*D.* get out of the way	*D.* experienced

Table 3 shows example English slang questions straight from "Test Your Language".

Table 3: Example English Slang questions based on "Test Your Language"

Q1	Q2	Q3	Q4
What does "what's up" mean?	What does "let's hang out" mean?	What does "have a blast" mean?	What does "have a crush" mean?

A. what is above you	A. hang our stuff	A. have a lot of fun	A. being depressed
B. something going up	*B.* let's go outside	*B.* ignore someone	*B.* really like someone
C. what is upstairs	*C.* go out	*C.* have a lot to eat	*C.* destroy
D. how are you	*D.* spend time together	*D.* use a lot of fireworks	*D.* very tired

Table 4 is example irregular verb questions from "Test Your Language".

Table 4: Example Irregular Verb questions from "Test Your Language"

Q1	Q2	Q3	Q4
Have you	She spoke too softly. I couldn't	But we heard everything she	We went shopping and I
your lost dog yet?	_____her.	_____.	_____a new pair of jeans.
A. finded	A. here	A. sayed	A. buyed
B. find	B. heard	B. said	B. bought
C. found	C. hear	C. say	C. buy

Qualitative analysis is also critical. Following the pop-quiz questions will be a standard set of explanatory and descriptive questions. They will be used exactly as written despite the lesson being taught and graded on. The questions will be open-ended responses as well as "yes, maybe, and no" questions. Likert-scale questions and multi-select questions (M-S Questions) will be sprinkled throughout the questionnaire to provide enhanced information. To ensure fairness for all participants, the questions will remain optional and anonymous. The main objective of these questions is to gather the history of the participants and to understand how the factors described in the literature review play into the experiment. These factors such as learning ASL as a first language, having deaf parents or hearing parents, and their perspective on whether ASL impacts their English language. These will be used to gain further understanding and develop complex analysis from the experiment. Furthermore, an effective combination of quantitative and qualitative questions allows for a "better organized understanding of the results" (Lee & Smith, 2012). Table 5 will focus on ASL in the participants' personal life. The total number of questions in the "Additional Information" section is 15. The entire set of questions in the "Addition Information" portion is displayed in Appendix B.

Table 5: Questions on ASL in Participants' Family History and ASL Impact on English Proficiency

Q1	Q2	Q3	Q4
Is American Sign Language your first language?	If so, do you speak American Sign Language at home?	How fluent are you in American Sign Language?	Are one, both, or neither of your parents or guardians suffering from hearing loss?
Answer Choices: Yes, Maybe, No	Answer Choices: Yes, Maybe, No	Likert-scale Question (1-Not at all; 10-A lot)	Answer Choices: One, Both, Neither

EXPECTED RESULTS

As stated in the hypothesis, the prediction is that among each category, the average number of correct answers on the pop quiz will be higher for the expected group than the control group. This will naturally claim that the time spent teaching ASL will benefit the overall disabled children. However, after the conduction of the case study displayed in the literature review, each category might have varying outcomes. Dyslexic children have the possibility of delivering any sort of results—negative, neutral, or positive—as the focus of the bulk of studies has been the children's reading abilities without a focus on their signing skills, thus the results lie open.

Whereas dyslexic children have an open analysis, the data for deaf children is predictable in that ASL will hold critical importance in their learning of the English language. For autism, ASL appears to ameliorate the child's visualization and correlation abilities which has a high chance of benefitting them while learning English, producing a possible positive correlation between ASL teaching and English proficiency. The expected data, regardless of its clear contrast, will yield a general understanding of whether ASL is worth placing into the education system.

Designating the disabilities most linked to ASL teaching in this research will grant a wide spectrum of results. While that may surface as disadvantageous, it is rather beneficial in comprehending the overall efficacy of ASL on the children's English skills all while gaining specific information on each of the disabilities.

DISCUSSION

Limitations

Due to limited time, there were some hindrances in this study. The main limitation was the lack of conducting an authentic experiment. Without the experiment, the method and study design will be unable to be modified and tweaked for other investigators and researchers in this field of area. However, the case study conducted in this paper and the literature review developed an accurate experimental design that will certainly produce results and advance the current research on ASL and English proficiency in disabled children.

Implications

If results deliver as expected by this study, the inclusion of ASL will be highly encouraged to teach lessons in schools for disabled children, thus allowing for a better and more efficient form of learning for the students. Some children might benefit from ASL as a form of communication in teaching while others might not, as be detailed in the literature review. Instead of following a teaching style with only English, the objective of this paper is to encourage the addition of ASL in the classrooms that could benefit the students lagging in their studies to promote a far more inclusive education system individual to each student's strengths and weaknesses.

REFERENCES

Bonvillian J.D., Nelson K.E., & Rhyne J.M. (1981). Sign language and autism. *J Autism Dev Disord, 11*(1), 125-137. doi: 10.1007/BF01531345.

Dammeyer, J. (2010). Psychosocial Development in a Danish Population of Children with Cochlear Implants and Deaf and Hard-of-Hearing Children. *The Journal of Deaf Studies and Deaf Education, 15*(1), 50–58. doi: 10.1093/deafed/enp024.

Finnegan E.G., Asaro-Saddler K., & Zajic M.C. (2021). Production and comprehension of pronouns in individuals with autism: A meta-analysis and systematic review. *Autism, 25*(1), 3-17. doi: 10.1177/1362361320949103.

Hulme C., Nash H.M., Gooch D., Lervåg A., & Snowling M.J. (2015). The Foundations of Literacy Development in Children at Familial Risk of Dyslexia. *Psychol Sci, 26*(12), 1877-1886. doi: 10.1177/0956797615603702.

Jokinen, M. (2000). The Linguistic Human Rights of Sign Language Users. Taylor & Francis Group. https://doi.org/10.4324/9781410605603.

Lee, S. & Smith, C. (2012, May). Criteria for Quantitative and Qualitative Data Integration. *Computers Informing Nursing: CIN*. https://10.1097/NXN.0b013e31824b1f96.

Liddell, S.K. & Johnson, R.E. (1989). American Sign Language: The Phonological Base. *Sign Language Studies 64*, 195-277. doi:10.1353/sls.1989.0027.

Mounty J.L., Pucci C.T., & Harmon K.C. (2014). How deaf American Sign Language/English bilingual children become proficient readers: an emic perspective. *J Deaf Stud Deaf Educ, 19*(3), 333-346. doi: 10.1093/deafed/ent050. Epub 2013 Nov 9. PMID: 24212202.

Robinson O. & Henner J. (2018). Authentic Voices, Authentic Encounters: Cripping the University Through American Sign Language. *Disability Studies Quarterly, 38*(4). https://dsq-sds.org/article/view/6111/5128.

Rutter, M. (1968). Concepts of autism: A review of research. *Child Psychology & Psychiatry & Allied Disciplines, 9*(1), 1–25. https://doi.org/10.1111/j.1469-7610.1968.tb02204.x

Sen, E. & Yurtsever, S. (2007). Difficulties Experienced by Families with Disabled Children. *Journal for Specialists in Pediatric Nursing, 12*, 238-252. https://doi.org/10.1111/j.1744-6155.2007.00119.x.

Shield A., Meier R.P., & Tager-Flusberg H. (2015). The Use of Sign Language Pronouns by Native-Signing Children with Autism. *J Autism Dev Disord, 45*(7), 2128-2145. doi: 10.1007/s10803-015-2377-x.

Snowling M.J., Hulme C., & Nation K. (2020). Defining and understanding dyslexia: past, present and future. Oxford Review of Education, 46(4), 501-513, DOI: 10.1080/03054985.2020.1765756.

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38*, 934–947. doi:10.1037/0012-1649.38.6.934.

Toth, A. (2009). Bridge of Signs: Can Sign Language Empower Non-Deaf Children to Triumph over Their Communication Disabilities? *American Annals of the Deaf, 154*(2), 85–95. http://www.jstor.org/stable/26234583.

Peterson, R. L. & Pennington, B. F. (2012). Developmental dyslexia. *Science Direct*. doi: 10.1016/S0140-6736(12)60198-6.

APPENDICES

Appendix A

Informed Consent Form

[redacted]

1. KEY INFORMATION ABOUT THE RESEARCHERS AND THIS STUDY

CONSENT TO BE PART OF A RESEARCH STUDY

Study title: Fear of Failure and Its Impacts
Principal Investigator: [redacted], High Schooler, [redacted]
Faculty Advisor: [redacted]

You are invited to take part in a research study. This form contains information that will help you decide whether to join the study.

Taking part in this research project is voluntary. You do not have to participate and you can stop at any time. Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

2. PURPOSE OF THIS STUDY

The purpose of this study is to examine the impacts of American Sign Language on English language skills in children with disabilities of autism, dyslexia, or deafness. This is to promote an enhanced and efficient education system for all children.

3. WHO CAN PARTICIPATE IN THE STUDY

Who can take part in this study?
Teens between the ages of 16 and 18 with autism, dyslexia, or deafness in suburban North Texas are allowed to participate in this study.

4. INFORMATION ABOUT STUDY PARTICIPATION

What will happen to me in this study?
The participant will learn an English language skill and will be required to partake in a pop quiz. The student will be grouped into the control or the experimental group through a random draw. If placed in the control group, the participant will learn the lesson in pure English whereas if they are grouped into the experimental group, they will be taught in American Sign Language. The participant is also encouraged, but not forced, to engage in the "Additional Information" section which will help the investigator advance their analysis of the experiment.

How much of my time will be needed to take part in this study?
A one-time experiment is all that is needed. The experiment, including the lesson and pop quiz, will range approximately 60 to 90 minutes.

5. INFORMATION ABOUT STUDY RISKS AND BENEFITS

What risks will I face by taking part in the study? What will the researchers do to protect me against these risks?
The experiment is anonymous and any personal information such as name, address, email, phone number, etc. will not be asked. Any information in the "Additional Information" section that will reveal the identity of the participant will be censored and all questions are fully optional to heed IRB regulations. There is no risk to the participant in partaking in this study.

How could I benefit if I take part in this study? How could others benefit?
You may not directly receive any personal benefits from participating in this study. However, others may benefit from the knowledge gained through this experiment, and future generations will grow up in a more equitable education system.

6. ENDING THE STUDY

If I want to stop participating in the study, what should I do?
You are free to leave the study at any time. If you leave the study before it is finished, there will be no penalty to you. If you decide to leave the study before it is finished, please tell one of the persons listed in Section 9. "Contact

Information". If you choose to tell the researchers why you are leaving the study, your reasons may be kept as part of the study record. The researchers will keep the information collected about you for the research unless you ask us to delete it from our records. If the researchers have already used your information in a research analysis it will not be possible to remove your information.

7. PROTECTING AND SHARING RESEARCH INFORMATION

How will the researchers protect my child's information?
Research data is collected anonymously so none of your child's information will be needed and none of the questions require answers that will identify your child.

What will happen to the information collected in this study?
We will keep the information we collect about your child during the research for future research projects and studies on American Sign Language and its impacts on English proficiency. Your child's name and other information that can directly identify your child will be stored securely and separately from the research information we collected from your child.

8. CONTACT INFORMATION

Who can I contact about this study?

- Please contact the researchers listed below to:
- Obtain more information about the study
- Ask a question about the study procedures
- Report an illness, injury, or other problem (you may also need to tell your regular doctors)
- Leave the study before it is finished
- Express a concern about the study

Principal Investigator: [redacted]
Email: [redacted]
Phone: [redacted]

Faculty Advisor: [redacted]
Email: [redacted]

If you have questions about your rights as a research participant, or wish to obtain information, ask questions or discuss any concerns about this study with someone other than the researcher(s), please contact the following: [redacted]

10. YOUR CONSENT

Consent/Assent to Participate in the Research Study
By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. I/We will give you a copy of this document for your records and I/we will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information in Section 9 provided above.

I understand what the study is about and my questions so far have been answered. I agree to take part in this study.

Print Legal Name: _____
Signature: _____
Date of Signature (mm/dd/yy): _____

Parent or Legally Authorized Representative Permission
By signing this document, you are agreeing for your child's participation in this study. Make sure you understand what the study is about before you sign. I/We will give you a copy of this document for your records. I/We will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I understand what the study is about and my questions so far have been answered. I agree for my child to take part in this study.

Print Participant Name

Print Parent/Legally Authorized Representative Name

Relationship to participant: • Parent • Spouse • Child • Sibling • Legal guardian • Other

Signature Date

Reason second parent permission was not collected:

- Parent is unknown
- Parent is deceased
- Parent is incompetent
- Only one parent has legal responsibility for care and custody
- Parent is not reasonably available*; explain:

** Note: "Not reasonably available" means the other parent cannot to be contacted by phone, mail, email, or fax, or his or her whereabouts are unknown. It does not mean that the other parent is at work or home, or that he or she lives in another city, state, or country.*

Date of Signature (mm/dd/yy):

Appendix B

"Additional Information" Section

1. Are one, both, or neither of your parents or guardians suffering from hearing loss? (Multiple Choice Question)
    1. One
    2. Both
    3. Neither

2. Is anyone in your family, friends, or relatives suffering from deafness? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

3. If so, please state how many. (Open-Ended Question)

4. Is anyone in your family, friends, or relatives suffering from autism? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

5. If so, please state how many. (Open-Ended Question)

6. Is anyone in your family, friends, or relatives is suffering from dyslexia? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

7. If so, please state how many. (Open-Ended Question)

8. Have you learned American Sign Language as a first language? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

9. Are you fluent in American Sign Language? (Multiple Choice Question)

1. Yes
2. Maybe
3. No

10. If so, do you speak American Sign Language at home? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

11. How fluent are you in American Sign Language? (Likert-Scale Question)

1	2	3	4	5	6	7	8	9	10
(Not at	all)								(A lot)

12. How fluent are you in English? (Likert-Scale Question)

1	2	3	4	5	6	7	8	9	10
(Not at	all)								(A lot)

13. What other language are you fluent in? (Open-Ended Question)

14. Do you think American Sign Language helps your ability to understand English language skills? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No

15. Would you like to be taught in American Sign Language? (Multiple Choice Question)
    1. Yes
    2. Maybe
    3. No