NARRATIVE LANGUAGE DEVELOPMENT IN DEAF CHILDREN AS ASSESSED
THROUGH AMERICAN SIGN LANGUAGE: A COMPARATIVE ANALYSIS
UTILIZING RETELLS AND ORIGINAL STORIES

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**ABSTRACT**

NARRATIVE LANGUAGE DEVELOPMENT IN DEAF CHILDREN AS ASSESSED THROUGH AMERICAN SIGN LANGUAGE: A COMPARATIVE ANALYSIS UTILIZING RETELLS AND ORIGINAL STORIES

Cathy Milliren

Despite advances in hearing technology, legislative changes, and instructional strategies, Deaf/Hard of Hearing (D/HH) students continue to demonstrate language delays on standard assessments. Although there are assessments that evaluate a child's American Sign Language (ASL) proficiency, research thus far has assessed the language structure of D/HH students through their use of English not ASL. Through a convergent mixed methods study, the Narrative Scoring Scheme (NSS) was used to compare the scores of D/HH fourth-, fifth-, and sixth-grade students with their hearing peers to compare their story structure with original stories and retells. Using $t$ tests and multiple linear regression analyses, scores were compared by utilizing their primary language in its original form. Grounded in second language acquisition and emancipatory/critical disability theory, D/HH children were investigated from a bilingual perspective and, by eliminating bias, were assessed in their primary language. In addition to the scores gathered, the D/HH students answered open-ended questions which allowed them to elaborate on their stories and the choices they made. The findings showed there were no significant differences between the NSS scores for the original stories and the retells for the D/HH students. In addition, no significant differences were found between the D/HH students and the hearing students for the NSS scores on either the original or retell

stories. Most of the eight classifier categories found in ASL were apparent in the stories of the D/HH students. In integrating the quantitative and the qualitative findings, it was shown that the more frequently the students used these classifiers, the higher the NSS scores. This served to demonstrate that the stronger the ASL skills of the D/HH students, the stronger their skills in story structure.

**DEDICATION**

I dedicate this dissertation as well as my entire journey to the mountain of friends and family who have supported and encouraged me along the way. At my age, rather than laughing or questioning my decision to pursue this degree, they uplifted me. Specifically, I wish to thank Kofie Montgomery, Dr. Judy Ogden, and Amy Herrera for being three of my raters. In doing so, they gave of their time, energy, efforts, and expertise to my project. Their help and insights were invaluable and without them, my data analysis would have been impossible. I also must thank Dr. Ellen Jampole for being a most amazing friend. She shared her own personal doctoral journey with me and offered advice, encouragement, assistance, and resources as I moved through this process.

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grateful.

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**CHAPTER 1 INTRODUCTION**

**Background**

Deafness has long been blamed for a child's poor academic performance (Scott & Dostal, 2019). However, it is not the deafness but rather language deprivation that is often the cause. In the United States, about one child in 1,000 is born with a bilateral hearing loss of at least 40 dB (M. L. Hall et al., 2019). Of these children, approximately 90% are born to hearing parents (Beal et al., 2020; Beal-Alvarez & Easterbrooks, 2013; Dubé, 2000; Scott & Dostal, 2019). This means that from birth, these youngsters lack the ability to acquire language through the auditory channel and do not have access to the linguistic exposure they require to develop language naturally. Whereas hearing children acquire as much as 70%–90% of their knowledge through incidental learning opportunities (Wilkinson & Wilkinson, 2020), these are too often lost experiences for the Deaf child.

According to the Colorado Commission for the Deaf, Hard of Hearing, and DeafBlind (2022), the 2022 Census identified that there were 11.5 million Americans with varying degrees of hearing differences. The Survey of Income and Program Participation (SIPP) in 2005 reported that of the approximate 11 million Deaf/Hard of Hearing (D/HH) Americans, which includes individuals over the age of 5 years, 1 million or .38% were functionally deaf. From this number, less than 4% were under the age of 18 years (Mitchell, 2006). Although the SIPP and the U.S. Census Bureau report on this population, due to the relatively small numbers, the type of questions asked, and the use of proxies to provide information, there is a lack of reliability regarding these estimates (Mitchell, 2006; Mitchell et al., 2006). Regardless of the exact percentages of D/HH

students in this country, addressing the educational needs of this population is of extreme importance.

Through the last several decades, there has been legislation that has had an impact on the way in which services are provided to the D/HH population. In 1973, Section 504 of the Rehabilitation Act required that school districts provide a free and appropriate education to students with disabilities (U.S. Department of Education, Office of Civil Rights, 2020). The key word in this law that continues to draw controversy is "appropriate." The Americans with Disabilities Act (ADA), passed in 1990, addressed full participation and equal opportunities for all persons with disabilities (Americans With Disabilities Act, 1990). It was grounded in freedom similar to the laws for civil rights. However, with this legislation, the phrase that has created the most controversy has been "reasonable accommodation." In 1975, the Education of Handicapped Children Act was passed and later amended in 1990 to be called Individuals with Disabilities Education Act (IDEA). IDEA is a federal law that oversees all special education services in the country whereas Section 504 is a statue that protects disabled students who attend schools that receive federal financial assistance (IDEA, 1990). For those who are involved with Deaf students, the controversial area of IDEA is the wording of "least restrictive environment."

In addition to these laws, acts, and statues, the Bilingual Education Act (BEA) was passed in 1968. This Act provided federal grants to school districts to assist students with limited English-speaking ability (Bilingual Education Act, 1968). The BEA refers solely to immigrant children and therefore does not govern Deaf children born in the United States. Title III, which is part of the Elementary and Secondary Education Act of

1965 (ESEA) and later amended by Every Student Succeeds Act of 2015 (ESSA), ensured English language learners (ELLs) attain English language proficiency (Every Student Succeeds Act, 2015). On the surface, it seemed that Deaf students, whose primary language is American Sign Language (ASL), would be a fit for this law. However, in 2011, a letter was written to the Title III directors that specifically stated deaf and hard of hearing students could not be considered as limited English proficient simply due to their reliance on ASL for communication (Meléndez de Santa Ana, 2011).

These aforementioned laws, statues, and acts were all enacted to protect and provide equal services to individuals with disabilities. The controversy, however, stems from the inherent differences between deafness and other disabilities. The word "appropriate," which is used in Section 504, as well as the phrase "least restrictive environment," which was taken from ADA, are both vague and biased (Conference of Educational Administrators of Schools and Programs for the Deaf, 2019). Is it more appropriate or least restrictive to educate Deaf children, who rely primarily on ASL for communication, in an environment where they can only effectively communicate with an interpreter or is it more appropriate and least restrictive for them to be placed in a school where they can freely interact with all members of that community? ADA refers to "reasonable accommodations," which is another biased phrase in terms of who decides what is reasonable (National Association of the Deaf, 2016). Unfortunately, the results usually are based on finances rather than need. Finally, in the letter written to the Title III directors, it was made quite clear that Deaf students were not considered to be ELLs (Meléndez de Santa Ana, 2011). Not viewing ASL as a native language of the Deaf and thereby only classifying Deaf students as ELLs if they come from another country

disavows both Deaf culture and the language of ASL as well as places these children at another disadvantage (Gerner de García, 2011). Regardless of what has been legislated or strategized, there remains a significant gap between the reading and language achievement levels of hearing and Deaf children (Dubé, 2000; C. Hall et al., 2021; National Association of the Deaf, 2016; Priestley et al., 2018; Reagan, 2011; Scott & Dostal, 2019; Wang et al., 2017; Wilkinson & Wilkinson, 2020).

**Statement of the Problem**

This achievement gap first appears in the early assessments of reading and language. The National Association of the Deaf (2014) stated the following in its position statement regarding early cognitive and language development and education of D/HH children:

> Young deaf and hard of hearing children continue to experience delayed cognitive and language development in early childhood that led to academic difficulties and underperformance when they begin schooling. Despite the good intentions of government, schools, and professionals, this condition persists, resulting in significant under-education and underemployment for persons who are deaf or hard of hearing. The effects of early language deprivation or limited exposure to language due to not having sufficient access to spoken language or sign language are often so severe as to result in serious health, education, and quality of life issues for these children. (Context Requiring Action section, para. 1)

Currently, the national data on literacy rates of D/HH high school graduates have shown that the median reading level of this population continues to be that of fourth grade (Lederberg et al., 2014; Seaver, 2014). In addition, one in five graduates have reading skills at or below a second-grade level and one in three have reading skills

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between the second- and third-grade levels (Lederberg et al., 2014). These statistics have not changed significantly in the last 50 years regardless of legislation, educational philosophies, or instructional practices. Part of the problem rests on the types and methods used in assessing the literacy performances of this population and the information gleaned from these results.

Given the poor performances of D/HH students when assessed in the areas of reading and writing, no studies have investigated their language performances by looking strictly at their ASL competency. There is a need to engage D/HH students in a natural environment to gain a richer picture of their literary competence. There has been research that used their original stories (Dubé, 2000; Marschark et al., 1994), but in both cases the narratives were translated into English before evaluation. With retells, investigations have utilized a variety of research designs and emphasized differing components of assessment, differing populations, or differing forms of assessment. However, in the studies that specifically focused on assessing story structure with Deaf students (Galvan, 1999; Tarwacka-Odolczyk et al., 2014), all utilized the method of translating the students' ASL into English prior to analyzing the results. None of these studies attempted to assess these students' language performance by evaluating their productions in their original form. In addition, almost no research has been conducted comparing hearing youngsters with their Deaf peers where both were assessed utilizing their primary language of communication. Assessing Deaf youngsters in this manner places them on an equal playing field with their hearing cohorts and allows educators to view them as second language learners, which is both equitable and appropriate (Dubé, 2000; C. Hall et al., 2021; Heilmann et al., 2010; Khan et al., 2016; Lucero, 2018). If educators are

sincerely interested in improving the literacy skills of D/HH students who utilize ASL as their primary mode of communication, then we must begin with this language in evaluating their current status. These data will provide a roadmap as to what skills they possess and where we are headed.

**Purpose of the Present Study**

Through a convergent mixed methods design, this study served to investigate the assessment of the narrative constructions of both D/HH and hearing students in their primary languages (ASL for D/HH students and English for hearing students) to address the gap that exists within the previous research. The purpose was to obtain statistically quantitative results from a sample of both populations and to explore qualitative insights from interviews with the D/HH students as well as from their language samples (Creswell & Plano Clark, 2018). The goal in keeping all collected stories as well as the interviews in their original forms was to obtain a more clear, accurate, and fair evaluation of their language performances. Comparing these two populations by using their primary languages was intended to address the inequalities in research that has previously interpreted the original ASL into English prior to evaluation (Anderson et al., 2018). The theoretical bases were second language acquisition theory as well as emancipatory/critical disability theory. In keeping with the emancipatory/critical disability theory, it was important that the procedures be enabling, that deafness not be viewed as a liability, and that social well-being not be viewed as the ability to hear (Barton, 2005). Second language acquisition theory, as proposed by Cummins (1984), espoused that learners draw on one language to acquire another (see also Evans, 2004). Because the significance of this study was to preserve the original language in which data

were collected, analyzed, and interpreted, both theories served as a lens through which this study focused.

**Overview of Guiding Theoretical Frameworks**

The emancipatory/critical disability theory espouses the importance of meaningful and practical outcomes as well as the pursuit of social justice through the elimination of unfair power inequities (Barnes, 2003; Connor et al., 2008; Mertens et al., 1994). The main underpinnings include placing the lives and experiences of traditionally marginalized groups ahead of medical understandings; viewing the sample population as participants rather than subjects while actively involving them in all aspects of the study; and utilizing research methodology that does not objectify, marginalize, or oppress those involved (Connor et al., 2008; Mertens et al., 1994). Following this perspective, it was essential that the researcher assumed competence on the part of the participants and rejected traditional models of deficiency (Connor et al., 2008). Additionally, the investigator needed to have ample knowledge of this population as well as an understanding of the unfairness and inequities that continue to threaten the educational/societal opportunities for this population (Connor et al., 2008; Mertens et al., 1994). Emancipatory/critical disability theory is a call for social change.

With second language acquisition theory, Cummins (1984) proposed that language systems were linked by a common conceptual core which promoted the transfer of subject-matter, knowledge, higher-order thinking skills, reading strategies, and written literacy. This common proficiency, of which Cummins (1984) wrote, does not exist at the surface level but rather at a deeper underlying level (Evans, 2004). Accordingly, language learning must occur in meaningful contexts which support more naturalistic

teaching strategies and less explicit instruction (Evans, 2004). The former encourages participation and problem solving, whereas the latter promotes less active involvement.

Given the strength of ASL, it is helpful and effective to think of Deaf children as second language learners. For this population, it is important to consider ASL as their primary language and written English as their second language (Evans, 2004). Teaching strategies that use ASL as the language of instruction and that make translations conceptual rather than literal contribute to literacy learning (McQuarrie & Abbott, 2013; Scott & Dostal, 2019). Understanding that language learning occurs in meaningful contexts supports the use of storytelling both as a classroom activity and as an effective method of assessment. Through this method, students express their knowledge, ideas, thoughts, feelings, and emotions in a manner in which they are proficient (Beal et al., 2020; Galvan, 1999; Khan et al., 2016; Lockett & Jones, 2009; Miller et al., 2018). By recognizing ASL as a Deaf child's primary language and assessing their linguistic skills in that language, one can begin to acknowledge the level of literary skill they possess.

**Research Questions**

Through a convergent mixed methods design, this study examined the differences in story structure within original stories and retells for both Deaf and hearing children when assessed in their primary languages as well as explored how the Deaf students' unique characteristics of ASL and Deaf culture were reflected in their stories. It was expected that by preserving the integrity of their language, a more complete, accurate, fair, and appropriate evaluation would be possible to procure their literacy skills (Anderson et al., 2018).

The quantitative questions with the hypotheses were:

1. Were there significant differences between story structure with the original and retell stories of Deaf fourth, fifth, and sixth graders whose primary language was ASL?

2. Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in original stories?

3. Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in retells?

The hypotheses were:

1. There will be no significant differences on the story structure rubric with original stories and retells for Deaf fourth, fifth, and sixth graders, proficient in ASL.

2. There will be no significant differences with the story structure rubric when comparing Deaf fourth, fifth, and sixth graders (ASL) and their hearing peers (English) with original stories.

3. There will be no significant differences with the story structure rubric when comparing Deaf fourth, fifth, and sixth graders (ASL) and their hearing peers (English) with retells.

The qualitative question was:

4. How were the unique characteristics of ASL and Deaf culture reflected in the original and retell storytelling of the Deaf fourth, fifth, and sixth graders?

The mixed methods question was:

5. How did the quantitative comparative results and the qualitative findings converge to demonstrate the narrative literacy performance level of Deaf students when assessed in ASL?

The theoretical bases were emancipatory in terms of disability in addressing critical disability theory as well as second language learning theory in the consideration of ASL. The paradigm shift called for a change in how Deaf children's primary language was assessed, evaluated, and valued (Creswell & Plano Clark, 2018). In the analysis phase of this study, the Deaf students' stories were purposively not transcribed into text, because ASL does not have a written form. Rather, these stories were viewed in their original forms for the purpose of analysis. In this way, the relationship between the researcher and the participants preserved their dignity while establishing a process based on trust, respect, and reciprocity (Barton, 2005). The Deaf population is certainly an underrepresented and marginalized group (Anderson et al., 2018; Bauman, 2004; Reagan, 2011). However, as with any group studied under these theories, it became a question of power. Studying ASL on an equal playing field, as any other recognized language, has far reaching implications for Deaf education as well as attitudes toward this culture of people in general.

**Significance**

Language study of Deaf children has largely focused on the weaknesses found in their written English and in their reading comprehension (Dubé, 2000; Scott & Dostal, 2019; Wang et al., 2017). If there was a significant increase in Deaf children's literacy

performance when assessed in their primary language rather than their secondary language, then they may have higher language skills than previously reported (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Evans, 2004). Rather than labeling this population as language deficient, they need to be viewed as second language learners and evaluated as such (Dubé, 2000; Evans, 2004; Priestley et al., 2018; Wang et al., 2017; Wilkinson & Wilkinson, 2020). This study addressed Deaf students whose primary language was ASL. The purpose of this convergent mixed methods design research inquiry was to obtain statistically quantitative results from a sample of both Deaf and hearing students while at the same time involving the Deaf students in open-ended discussions regarding their choices made in both their original stories as well as their retellings. These explorations and clarifications led to more depth of understanding and a pathway to future research (Creswell & Plano Clark, 2018).

### *Implications for Teachers of the Deaf*

For teachers of the deaf to effectively utilize narratives within the classroom, their knowledge and use of ASL is critical. In order for them to appropriately guide and foster a child's language development, they must possess the skills to assess ASL accurately (Galvan, 1999; Miller et al., 2018). Additional education, training, and support for teachers will be necessary for them to become comfortable and fluent with this approach. Integrating native models within the classroom will increase the richness of the discourse and provide models for the students and the teachers.

In addition to the use of storytelling in the classroom for a variety of purposes, teachers need to engage in evaluation of these practices. It will be through these measurements that they will possess a needs assessment that, in turn, will drive their curriculum. Once a developmental scale of ASL is developed and an assessment is

standardized to measure that development, then classroom teachers can develop their lesson planning to meet the unique needs of their students. Teachers are the critical factor in research development of these evaluations and thereby opening the doors to the wealth of information that can be gleaned from student storytelling.

### *Implications for School Leaders*

All typical public schools and schools for the Deaf in the United States have required courses in English but most do not currently have courses in ASL (Evans, 2004; M. L. Hall et al., 2019; National Association of the Deaf, 2016). This needs to change. With ASL being acknowledged as the primary language (L1) for many Deaf students, it needs to be taught with an emphasis on grammar, structure, and organization. In this way, students will learn the rules of production, practice that ability, and use that information in learning English, which will improve their reading and writing skills. Courses in ASL need to be developed along with appropriate materials and with assessment tools.

In addition, leaders need to align themselves with researchers who are developing assessment tools for standardized measurements for both ASL and English. Working in tandem with a university will serve to coordinate this effort and provide support for schools in moving forward. Ongoing evaluation of new programs serves to demonstrate and validate improvement, which will rally parental and community support. Developing reliable and valid assessments of ASL that can be compared with the literacy skills of typical hearing children is of critical importance in this movement toward bilingual/bicultural education. A joint effort between researchers and schools is that next step.

*Implications for Legislation*

  The federal government currently has The Alice Cogswell and Anne Sullivan Macy Act under consideration in the House of Representatives as an amendment to the IDEA. This proposal is historic in that it is the first bill to directly address the specific needs of the Deaf population. Most importantly, it recognizes ASL as the primary language of the Deaf community and states that the Deaf must have access to educational placements that recognize and provide for their language, communication, social-emotional, and academic needs (Alice Cogswell and Anne Sullivan Macy Act, 2019). This bill refers to the concept of least restrictive environment as one that meets the communication and related needs of the deaf. It also recognizes the significance of learning skills and gaining knowledge through incidental learning and the setting that is required for this to occur (Alice Cogswell and Anne Sullivan Macy Act, 2019).

*Implications for Future Research*

  The majority of studies use English as the primary language for both the hearing and Deaf populations, which puts the Deaf child at an immediate disadvantage. In the cases where the child uses ASL, it is transcribed into English before analyzing the structure, which again becomes an unfair comparison (Demers & Bergeron, 2019; M. L. Hall et al., 2019; Marschark et al., 1994; Tarwacka-Odolczyk et al., 2014; Wilkinson & Wilkinson, 2020). More research is needed to directly compare the primary language of Deaf children (ASL) with the primary language of typical hearing children (English).

  In order for this to be possible, a test must be developed that will accurately measure the story grammar and story structure of both ASL and English in "oral" discourse. At the current time, there are many tests that measure these constructs for English and a few in development that measure these same constructs for ASL. However,

future research is needed to develop a measure that can do both in order to produce a score that is statistically comparable.

**Definitions**

*American Sign Language* (ASL): ASL is a language with its own syntax and grammar, both of which different from those of English. In addition to signs, non-manual markers are used to express semantic and syntactic information (Beal-Alvarez & Easterbrooks, 2013)

*Deaf* (spelled with a capital D): individuals who are audiologically deaf, whose primary language is ASL, are members of the Deaf community, are entrenched in Deaf culture, and have a strong positive Deaf-identity (Evans, 2004).

*deaf*: a generic term (spelled with a lower-case d) that refers to the physical condition of hearing. It is an inclusive term that refers to all people who are Deaf and deaf regardless of their primary language, culture identification, community affiliation, or age of onset (Evans, 2004).

*macrostructure*: the global organization of the ideas, formed from the sentence structure, into higher order units such as setting, conflicts, and resolutions also referred to as discourse-level structure (Kintsch, 2019).

*microstructure*: according to Kintsch (2019), it is "the network of propositions that represents the meaning of the text; a translation from the actual words used into an idea-level format" (p. 181).

*original stories*: for the purposes of this study, an original story is a narrative that comes from one's imagination. It is a story that is not known, and it is not based on a book, movie, or television program (Marschark et al., 1994). There were no restrictions on the style or length of the production.

*retells*: for the purposes of this study, a retell is a narrative which repeats, in the participant's own "words," a story that was recently told by the researcher. It is the process of constructing a narrative from memory that recounts a previously experienced "oral" representation of an activity or event (Wang et al., 2017).

**CHAPTER 2 THEORETICAL FRAMEWORKS AND LITERATURE REVIEW**

**Theoretical Frameworks**

The two theories that served as the framework for this study were second language acquisition theory and emancipatory/critical disability theory. Second language acquisition theory, as first espoused by Cummins and then by Krashen (Ariza et al., 2016), emphasizes the importance of having a foundation in one language to learn another. With emancipatory/critical disability theory, the focus is on promoting inclusion rather than exclusion while supporting accessibility by breaking down barriers (Procknow et al., 2017). The interactions of these two theories affected the direction of the research, perspectives taken and included, as well as the manner in which data were gathered and findings were revealed and discussed.

*Second Language Acquisition Theory*

**What is Second Language Acquisition Theory?** Whether one is a proponent of Cummins or Krashen, second language acquisition theory is based on the foundation that competence in a second language is partially a function of the competence already developed in the individual's first or primary language (Ariza et al., 2016; Cummins, 1979; Nguyen et al., 2001). Both theorists espoused the significance of the experiences in a first language and its influence on the development of second language skills. Although they each have their own models and hypotheses, Cummins and Krashen both stressed the need for interactive communication and the active engagement necessary to comprehend language and interpret its meaning (Ariza et al., 2016; Cummins, 1979; Krashen, 2003; K. Lichtman & VanPatten, 2021). The explicit teaching of textbook grammar and the emphasis on drill and practice in teaching a second language should be minimized in favor of social interactions (K. Lichtman & VanPatten, 2021).

**Developmental Interdependence Hypothesis.** Cummins's developmental

interdependence hypothesis indicates there is an interaction between the competence a

child develops in their first language prior to entering school and the language of

instruction (Cummins, 1979; Hermans et al., 2008). If a child demonstrates a high level

of competence in their first language (L1), it sets the foundation for a similar

development in the second language (L2). However, if the L1 is less developed, then this

is likely to present obstacles for the development of L2 (Cummins, 1979). The

significance of this hypothesis is in the emphasis on the development of the first or

primary language of the child. If this is not strong, then attempting to provide instruction

in a second language will not be as effective. In addition, Cummins (1979) stated

providing instructional time in bolstering the foundation of a child's first language will

not only have no detrimental effects on the development of L2 skills but rather will likely

demonstrate positive outcomes.

The linguistic interdependence model, which was an outgrowth of this hypothesis,

refers to a common proficiency, inherent in all languages, that is acquired in an L1 and

that can be transferred to a L2 (Hermans et al., 2008). It is the process of this transfer

between languages that allows bilingual individuals to learn the second language

(Mounty et al., 2014). Conceptual knowledge and skills being transferred across

languages are based on this "common underlying proficiency" (CUP) and demonstrate

the interdependent nature of L1 and L2 (Ariza et al., 2016; Mounty et al., 2014).

Ultimately, the linguistic knowledge children bring to school along with their competence

in L1 and L2 that they developed through instructional interactions produces academic

and cognitive outcomes (Cummins, 1979). If, however, the conceptual-linguistic

knowledge is not sufficient in a child's L1, then initial instruction should be taught in the

L1 to provide the necessary foundational skills (Cummins, 1979). This is significant for

all English learners (ELs) but especially for Deaf students who use ASL as their primary

language. For those students who enter school with no formal language (only home signs

and gestures), they must first acquire ASL before they can be expected to learn English.

If it is the combination of the child's language input, background, and educational

instruction that explains the individual's academic outcomes (Cummins, 1979), then one

cannot emphasize enough the significance of bolstering the foundation of a child's L1.

**Second Language Framework.** Cummins (1984) proposed a theory that

conceptualized communicative proficiency along two continuums. Along the horizontal

continuum, he distinguished between the processing of language in an informal way with

the processing of language that was required in most classrooms. Cummins referred to

these as social language versus academic language (Ariza et al., 2016). The vertical

continuum demonstrates the distinction between activities that are cognitively

undemanding with those that are demanding (Cummins, 1984). His model has four

quadrants with the first depicting the development of survival vocabulary with high

contextual clues to the fourth quadrant showing the understanding of academic

presentations (Ariza et al., 2016). By utilizing this framework within the perspective of

bilingual education, he espoused that educators could more appropriately determine

whether children were ready for instruction without support from their primary language.

Herein lies one of the major differences between bilingual education for hearing students

and those who are Deaf. Whereas Deaf children are capable of reading to learn, they will

always require instruction that maintains accessibility, through their primary language,

for all information and communicative interactions (Beal et al., 2020; Evans, 2004; Gee & Kegl, 1983).

**Theory of Language Acquisition.** Krashen's theory contains five hypotheses: acquisition learning hypothesis, natural order hypothesis, monitor hypothesis, input hypothesis, and affective–filter hypothesis (Ariza et al., 2016; Krashen, 2003; K. Lichtman & VanPatten, 2021). His theory of language acquisition espouses the importance of meaningful interactions to gain competence in a second language (Krashen, 2003; K. Lichtman & VanPatten, 2021). It emphasizes the need to focus on the message through comprehensible input in an encouraging environment rather than on grammar to achieve competence (Krashen, 2003; Krashen & Brown, 2007; K. Lichtman & VanPatten, 2021).

Krashen's five hypotheses are the core of his theory of language acquisition. The language acquisition learning hypothesis provides the distinction between the processes of acquisition and learning. Krashen defined acquisition as a subconscious process whereas learning is conscious in terms of awareness of knowledge and understanding the rules of the language (Krashen, 2003; K. Lichtman & VanPatten, 2021). These are thought of as separate language systems in that learning cannot turn into acquisition just as explicit knowledge cannot become implicit (Krashen, 2003; K. Lichtman & VanPatten, 2021). Natural order hypothesis indicates "the evolution of the learner's linguistic system occurs in ordered and predictable ways, and is largely impervious to outside influence such as instruction and explicit practice" (K. Lichtman & VanPatten, 2021, p. 293). This supports the idea that grammatical structures do not need to be the emphasis of a curriculum but rather utilizing problem-solving structures to promote the

acquiring of rules is a more effective strategy (Ariza et al., 2016; Krashen, 2003).

Monitor hypothesis utilizes the strength of a student's L1 to correct their errors in L2.

Teachers' modeling of appropriate sentence structure provides rich input in developing

ways for children to edit and self-correct their own work (Ariza et al., 2016; Krashen,

2003). Input hypothesis emphasizes the critical importance of comprehensible input.

Krashen used the formula $i + 1$ to illustrate the need to be exposed to comprehensible

content that exceeded one's current stage of language competence (Ariza et al., 2016;

Krashen, 2003; Krashen & Brown, 2007; K. Lichtman & VanPatten, 2021). He stated it

is comprehension, not production, that advances language proficiency (K. Lichtman &

VanPatten, 2021). "Comprehensible input is indispensable for L2 acquisition" (K.

Lichtman & VanPatten, 2021, p. 295). Without comprehensible input, learners cannot

acquire language. The final hypothesis in this model is the affective–filter hypothesis.

This aspect of the model refers to the significance of emotions in either helping or

obstructing the acquisition of language. Providing a cooperative learning environment

that is safe and secure is of paramount importance to ensure optimal effectiveness of

instruction (Ariza et al., 2016; Krashen, 2003).

**Language Acquisition.** Early exposure to an accessible language is essential to

developing native-like proficiency in any language (Mounty et al., 2014). It follows then,

that for successful acquisition of a second language, a solid foundation in a first language

is critical. As both Cummins and Krashen emphasized, it is upon the strength of the first

language that the potential for a second language can be realized (Keck & Wolgemuth,

2020; Nguyen et al., 2001). Therefore, just as with spoken languages, it is equally

important, especially during the critical language period, for sign languages to be introduced early into a Deaf child's life (M. L. Hall et al., 2019).

For Deaf children born to hearing parents, which accounts for approximately 90%, there is a mismatch between the language of the home and the language of the child. For most of them, the amount, timing, and quality of comprehensible linguistic input are variable at best (Goldin-Meadow & Mayberry, 2001; Keck & Wolgemuth, 2020). When the critical learning periods for learning ASL are missed, as with any language, foundational skills are negatively impacted and therefore so are reading levels (Keck & Wolgemuth, 2020). Deaf children born to Deaf parents or hearing parents who know and use ASL are at a distinct advantage. In this case, these children are exposed to language at an early age, exposed to the phonological structures of the language, and thereby build a strong foundation from which English literacy can be supported (Keck & Wolgemuth, 2020). Statistically, this group of Deaf children tends to become better readers due to their language foundation, the consistency of language input, early detection of hearing loss, and early entry into the educational system (Goldin-Meadow & Mayberry, 2001).

Language acquisition is not dependent on speech but rather can be acquired through the eyes and hands (Goldin-Meadow & Mayberry, 2001). ASL, as an example of one sign language out of hundreds, is not an outgrowth of a spoken language but rather is a language in itself; built on its own unique phonological structure (Goldin-Meadow & Mayberry, 2001; Keck & Wolgemuth, 2020). Rather than sound, the phonological structures of ASL consist of hand shapes, locations, and movements which, when combined and following the rules and proper grammatical structures, can express

anything that can be conveyed through speech (Keck & Wolgemuth, 2020). For example, in English, by altering one phoneme the word can change from fit to bit. In ASL, by altering one parameter the meaning of the sign can change from summer to dry (by moving the X-hand shape from running across the forehead to running across the chin).

Deaf children cannot learn to read without having a foundation in a language (Goldin-Meadow & Mayberry, 2001; Hermans et al., 2008; Keck & Wolgemuth, 2020; Mounty et al., 2014). Without the early access to a language, such as ASL, and the experiences and opportunities for meaningful communicative activities that allow the child to engage in an exchange of ideas and thoughts as well as gaining knowledge and information, the ability to learn English is severely compromised (Keck & Wolgemuth, 2020; Mounty et al., 2014). However, in cases where ASL (L1) is acquired early and consistent and continuous opportunities are provided for meaningful communication with comprehensible exchanges, then the learning of English (L2) can be achieved (Hermans et al., 2008).

**Bilingual/Bicultural Education.** The rationale for bilingual education, taken from the U.S. Commission on Civil Rights 1975, stated a "lack of English proficiency is the major reason for language minority students' academic failure. Bilingual education is intended to ensure that students do not fall behind in subject matter content while they are learning English" (California State Department of Education, Office of Bilingual Bicultural Education, 1981, p. 17). This clearly proclaims that although second language competence may be the goal, one must not sacrifice a child's accessibility to knowledge in order to attain this skill.

Although the concept of bilingual education is applicable to the Deaf, there are some profound differences between this population and hearing populations of second language learners. First, ASL, as a primary language, has no spoken or written component. This lack of a written form serves to present an inconsistent exposure to the language (Evans, 2004; McQuarrie & Abbott, 2013). Second, the family language background is typically a mismatch with that of the child. This is most unusual as the majority of EL children share their first language with their families and their communities. Finally, if children are to learn to read and gain knowledge and pleasure from print, they must learn English, as ASL has no print version (Bailes, 2001; Berke, 2013). In a household, for example, where Spanish is the home language, families can freely communicate and share their culture in their native language as well as printed and digital reading materials. For the Deaf child, unless the parents are Deaf or know and use ASL, the child is isolated from communication with the family, culture, and formal language. This does not preclude the Deaf from being considered bilingual (ASL–L1/ English–L2), it just presents additional challenges and necessitates alternative instructional strategies.

There is a bidirectional nature to the connection between ASL and English (Hermans et al., 2008; Mounty et al., 2014). With a strong foundation in ASL, Deaf children increase the possibilities that they will achieve higher levels in reading achievement (Goldin-Meadow & Mayberry, 2001; Hermans et al., 2008; Keck & Wolgemuth, 2020; Mounty et al., 2014). The quantity and quality of the signs learned serve to increase the vocabulary of printed material (Hermans et al., 2008). By presenting whole contexts, the child learns to select the signs that match the contextual meaning of

the text. In this way, reading begins to move from word to word to full sentences, which, in turn, improves comprehensibility (Mounty et al., 2014). This is vital if Deaf children are to progress from learning to read to reading to learn.

Reading is difficult for Deaf children. Although we know that ASL facilitates the learning of the skills needed to read, the achievement scores of this population are still below the mean of their peers (Hermans et al., 2008). Deaf adults with a high level of proficiency in ASL read at approximately the eighth-grade level or above while Deaf adults with a low level of proficiency in ASL tend to read at approximately the fourth-grade level or below (Hermans et al., 2008). Keck and Wolgemuth (2020) showed that Deaf individuals identified as having early access to ASL and therefore higher phonological awareness in ASL had better reading skills than those with later access to ASL. These differences should be enough to emphasize the critical importance of early exposure to ASL.

Children cannot read without knowing a language, even if it is not the language captured in print (Goldin-Meadow & Mayberry, 2001). Besides a language, reading requires the understanding of mapping between that language and the printed word. For most languages this is based on sound. Phonological coding helps hearing children as they are learning to read but for most Deaf children this is of little value, especially if they do not know the word (Goldin-Meadow & Mayberry, 2001). Therefore, this population requires different techniques that are designed to move the student from print to sign.

Chaining is an instructional strategy that serves to create associations between printed vocabulary/concepts and ASL (Goldin-Meadow & Mayberry, 2001; Hermans et

al., 2008; Mounty et al., 2014). It involves pointing to a word or picture in a text, fingerspelling the word and signing the word or concept, and then pointing to the word again. In this way, the child begins to associate the print with the meaning as well as the spelling (Hermans et al., 2008; Mounty et al., 2014). This strategy builds vocabulary skills in English, which has been linked to improved reading comprehension scores (Hermans et al., 2008). In ASL, the signs for "outside" and "went" as well as "explain" and "describe" can look the same. However, through specific strategies designed for the Deaf, words and concepts such as these can be delineated, thereby fostering academic development in both languages (Mounty et al., 2014).

In addition to the significance of a bilingual education, addressing the bicultural aspects of a student's academic life is crucial as well. Cummins (1979) stated the importance of a cultural identity in that one who identifies with both cultures will reach higher achievement levels than one who does not identify with either culture. In the case of Deaf children born to hearing parents, they are often isolated from their family's culture due to poor communication and, if not exposed to Deaf culture and the Deaf community, are destined to be low achievers (Cummins, 1979; Mounty et al., 2014). Cummins's (1979) threshold hypothesis was in support of the U.S. Commission on Civil Rights in that he stated that if the foundational language of students was weak and children were not instructed to support that language, they would continue to fall behind their academic peers. Comprehensible communication is the key which necessitates active participation and interaction (K. Lichtman & VanPatten, 2021). For Deaf children to achieve academic success, they must have a strong foundation in their primary

language (ASL) and then, through specific teaching strategies designed for their needs, be taught to bridge those skills to English.

*Emancipatory/Critical Disability Theory*

**What is Emancipatory/Critical Disability Theory?** The emancipatory/critical disability theory views disabilities through a social lens rather than one of a medical model (Barton, 2005; Procknow et al., 2017; Shakespeare, 2014). This represents a shift from a deficit perspective to one representing difference and inclusion. Therefore, in discussing this viewpoint, one is focused on a society that seeks to break down barriers, advances inclusion, values diversity, and promotes accessibility (Procknow et al., 2017). Instead of viewing disabled individuals as those that need to be fixed, are not the norm, and are inherently inferior, it is necessary to change attitudes and support social justice and equality.

**Ableism.** The oppression and discrimination of disabled people lead to their exclusion from key decisions affecting the quality of their lives (Barton, 2005). Ableism is a pervasive concept and one that, although invisible, has a strong negative impact on the population. It supports and reinforces marginality and serves to silence and ignore the voices of the very people to whom we should be listening (Procknow et al., 2017). What renders individuals as disabled are the environmental barriers, negative attitudes, and the inaccessibility of systems that exist in our society (Shakespeare, 2014). To begin to address these issues, we must include disabled individuals in the conversation and collaborate with them in working toward the goal of empowerment, social justice, and equity.

This treatment of disabled students within our schools, from a paternalistic perspective, must end if we are to achieve equality and for us to establish an environment

that is most enabling. Within a typical classroom in the United States, English is the language of instruction and topical discussions often involve crosstalk between and among the various members of the class (Cawthon, 2001; Keating & Mirus, 2003; Stinson & Antia, 1999). For a Deaf child, this environment is fraught with communication barriers and obstacles. English is their second language, and it is a verbal language in that it is most easily learned through hearing it rather than by reading it, due to its many exceptions to its rules. Crosstalk, which makes for lively discussions and debate, presents extremely difficult situations for Deaf students (Cawthon, 2001; Keating & Mirus, 2003; Stinson & Antia, 1999). They are unable to discern who is speaking and the interpreter will often struggle with keeping up with the conversations. In addition, even under the best of circumstances in working with an educational interpreter, there is a natural delay from the spoken word to the interpretation (Cawthon, 2001). This is because ASL is a conceptual language, so for the interpreter to relay the message accurately, one must hear the message in its entirety before interpreting it. This delay in receiving the message makes it difficult for the Deaf student to participate in the discussion or to ask relevant questions (Keating & Mirus, 2003). By the time the student gets the message, the conversation may have already moved on to the next topic.

Critical disability theory refers to accepting individuals as they are rather than looking to cure, change, or pity them (Barton, 2005). In recognizing ASL as the primary language of the Deaf, we can assess deaf children in their language and discover their true linguistic performance levels (M. L. Hall et al., 2019). In this way they are uplifted and respected for their culture and way of thinking (Lane, 2002). It serves to embrace them for their differences and breaks down the barriers of communication.

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While working as the principal at a school for the deaf, this researcher was required to attend a committee on special education meeting. The school psychologist accompanied her to present his report. He is Deaf and, as such, had requested a sign language interpreter. When he arrived at the meeting, the committee had neglected to hire an interpreter. This psychologist quite eloquently explained that the interpreter was in fact for them, not him. He had no difficulty in transmitting his knowledge, but it was the committee of professionals who had the "disability" in not understanding his message.

**Integration to Current Study.** Designing a study that both compared and analyzed Deaf children's ASL, their primary language, with the English of their hearing peers, served to address the issue of equity as well as acknowledgement of Deaf people's culture and life experience. Utilizing a methodology that involved narrative discourse presupposed the stance of competence and allowed the participants to "speak" freely and, with original stories, on a subject of their choice. Including Deaf professional adults in the analysis phase of the inquiry provided the necessary insight as well as the inclusive aspect needed for authenticity. Finally, with over 30 years in the field of deaf education serving as a teacher, school administrator, and advocate, this researcher had the necessary base of knowledge as well as the ASL ability to conduct this inquiry. Emancipatory/critical disability theory not only helped to define the problem that this study addressed but also served to point the direction for the future.

*Summary*

One of the most significant results of viewing Deaf students from the viewpoints of second language acquisition theory and the emancipatory/critical disability theory is that it presents a shift from the deficit perspective to one of a language/cultural perspective. It highlights the importance of making the classroom accessible and

encouraging Deaf children to be active participants in their education and as part of the school community. Including Deaf culture in the curriculum, as one would include other cultures, serves to change attitudes and demonstrates respect for their values and beliefs (Evans, 2004).

**Literature Review**

*Framework*

Through universal newborn hearing screening, improvement in hearing technology, and early intervention services, Deaf children are being identified earlier. However, their lack of ability to acquire language through the auditory channel and the inaccessibility to the linguistic exposure required to develop language naturally remains unapproachable (C. Hall et al., 2021; Priestley et al., 2018; Wang et al., 2017; Wilkinson & Wilkinson, 2020). Once in school, their often poor academic performance is blamed on their deafness rather than on the true culprit, which is language deprivation (Scott & Dostal, 2019). Evidence showing equivalent academic skills, when comparing typical hearing students with Deaf students from Deaf families, has borne witness to this point (Dubé, 2000).

Hearing children acquire as much as 70%–90% of their knowledge through incidental learning experiences (Wilkinson & Wilkinson, 2020). These are missed opportunities for most Deaf children due to the fact that only a small percentage of family members of Deaf children learn sign language (Beal et al., 2020). Unlike Deaf children of Deaf parents, many hearing parents view ASL as a backup option and sacrifice the early years of language development to concentrate on speech production. This baseless idea that there is a longer critical period for sign language acquisition has been used to argue that spoken language exposure must be prioritized at the expense of sign language

exposure (M. L. Hall et al., 2019). In fact, ASL requires early, high-quality language input just like any spoken language (Priestley et al., 2018; Wilkinson & Wilkinson, 2020). In actuality, exposure to both a signed and spoken/written language is one way to guarantee accessible language input (Wang et al., 2017; Wilkinson & Wilkinson, 2020).

For years, the myth that sign language was harmful to the acquisition of a spoken/written language was widely believed. However, through much research in the last few decades, it has been shown that a strong foundation in ASL promotes the development of English (Kushalnagar et al., 2010; Mayer & Trezek, 2014; Wilkinson & Wilkinson, 2020). Achieving mastery of one language provides the foundation for acquisition and development for the second language (Beal-Alvarez & Scheetz, 2015; M. L. Hall et al., 2019). This is as true for ASL as it is for any other language and early exposure is the key (Scott & Dostal, 2019). The skills embedded in the deeper structures of ASL promote linguistic and background knowledge that can be transferred to English for the purposes of supporting the reading/writing process (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Evans, 2004).

### Approaches to Language Instruction

Discovering effective approaches to language instruction for Deaf children has been one of ongoing controversy and research. Although most educators agree that there is no magic plan of action, there continues to be disagreement as to what methods should be emphasized. Speaking historically, regarding the use of ASL, Armstrong and Karchmer (2009) espoused that the deaf would not achieve their full potential using a language that did not emphasize sound and that any sign language was secondary to a verbal language. Oralists still contend that the use of ASL is a detriment to learning English (Armstrong & Karchmer, 2009; Demers & Bergeron, 2019; M. L. Hall et al.,

2019; Mayer & Trezek, 2014). There are some who believe the introduction of sign language negatively affects the region of the brain responsible for auditory processing (M. L. Hall et al., 2019). M. L. Hall and colleagues (2019) noted any concerns about ASL interfering with spoken language development or accelerating maladaptive cortical reorganization are unsubstantiated.

Programs that espoused the use of Total Communication (TC) strongly proclaimed that this use of all methods (i.e., sign, speech, written, fingerspelling, and lipreading) was the most effective philosophy (McCay, 1972). TC became popular in schools for the deaf in the 1970s and is still seen today. Originally, this philosophy was developed from the perspective of providing for each child's individual needs (Arnold, 2022; Clements & Prickett, 1986; Neria et al., 2019). Therefore, if a Deaf child learned best with an oral approach, then that would be the emphasis, and in contrast, if a child benefited more from an ASL approach, then that would be provided for that individual. However, this philosophy became more of an approach and slowly became synonymous with SIMCOM (simultaneous communication). In other words, teachers of the deaf would sign and speak at the same time (Arnold, 2022; Clements & Prickett, 1986; Vernon, 1972). This was the preferred method for decades and it is only recently that researchers have investigated the inherent negative impact on Deaf children's development (Reagan, 2011; Wang et al., 2017). Given that ASL is a language with its own rules of grammar and word order, it is impossible to effectively use ASL and speak English at the same time without one language suffering. Subsequently, English became the preferred language of instruction with ASL signs used for support (Wang et al., 2017). Through this SIMCOM approach, students were not given the opportunity to fully

develop their primary language and were instructed in two languages at the same time. Although learning both languages was a goal, expecting children to attend to both simultaneously produced overload and detracted from the concepts presented (Arnold, 2022; Clements & Prickett, 1986).

In contrast, bilingual/bicultural education emphasizes the teaching of Deaf children through the strength of their primary language (Dubé, 2000; Kushalnagar et al., 2010; Priestley et al., 2018; Scott & Dostal, 2019; Wilkinson & Wilkinson, 2020). Instruction is primarily in ASL and when English is taught it is through speech with ASL support when needed. The two languages (ASL and English) are taught separately, and children learn to code switch as well as to understand the differences (Priestley et al., 2018; Scott & Dostal, 2019). Just as English is taught as a language, so too is ASL. Deaf students begin to discover the grammar inherent within ASL and gain an appreciation for their native language (Priestley et al., 2018). From here grows a connection to the Deaf community and contributes to their social/emotional well-being.

In schools for the deaf across the country, philosophies (Oralism, Total Communication, and Bilingual/Bicultural) are established and outcomes are varied, partially due to the variability among deaf students. However, in mainstream/integrated programs, students' sign language skills are often assumed rather than taught and their strengths in language are overlooked, misunderstood, or unrealized (Reagan, 2011). Thereby, they often do not fully develop ASL and are expected to learn English with no language basis.

Greater proficiency in ASL has been congruent with increased competency in reading and writing skills (M. L. Hall et al., 2019; Scott & Dostal, 2019). Repeated

viewings of narratives in ASL, the development and increased use of more advanced

ASL linguistic structures, and access to ASL linguistic models have all been linked to

increased competencies in overall literary skills (M. L. Hall et al., 2019; Priestley et al.,

2018; Scott & Dostal, 2019). These include isolated words, reading comprehension,

features of academic writing, vocabulary usage, and general language proficiency

(McQuarrie & Abbott, 2013; Scott & Dostal, 2019). M. L. Hall et al. (2019) stated "a

child who has developed age-appropriate mastery of at least one language is expected to

be less vulnerable to a wide range of developmental challenges than a child who has not

developed age-appropriate mastery of any language" (p. 372). A stronger foundation in

ASL has been shown to facilitate the acquisition of English as a second language

(McQuarrie & Abbott, 2013).

However, knowledge of ASL alone is not sufficient for learning to read and write

in English (Mayer & Trezek, 2014). Wang et al. (2017) noted that

> although there is a longstanding controversy over communication methods in deaf
>
> education, perhaps in early stages of language development it is the separation of
>
> modes rather than the exclusion of one over the other that matters most in
>
> language and concept development. (p. 714)

In this vein, the positive outcomes of providing a language rich environment for Deaf

students include simulating creativity, avenues for shared experiences, improved

"listening" skills, motivation to learn, improved grammar and vocabulary, development

of social skills, language development, retention of knowledge, improved attention span,

and overall improvement in cognitive abilities (Priestley et al., 2018; Wang et al., 2017;

Wilkinson & Wilkinson, 2020). Additionally, it allows them to acquire the patterns of

language, vocabulary, and syntactic complexity, as well as new uses for existing vocabulary (Mayer & Trezek, 2014; Wilkinson & Wilkinson, 2020). Their writing becomes more sequential and fluent, and their confidence builds.

*Education of the Deaf*

Deaf children require and deserve an educational setting that provides full visual access to language and communication while instilling a positive sense of identity as a Deaf individual (Priestley et al., 2018). With the barriers to accessibility removed, Deaf students are empowered and their learning potential is unleashed (M. L. Hall et al., 2019). ASL needs to be taught, as the primary language, in much the same way as English is taught to hearing children, emphasizing its unique grammar and syntax. Linguistic input should be presented in a natural way to establish a strong relationship between language proficiency and literacy (Scott & Dostal, 2019). This bidirectional looping of ASL and English provides evidence that reading achievement is possible in the absence of spoken-language phonological awareness (McQuarrie & Abbott, 2013).

Programs that emphasize the bilingual/bicultural approach for the D/HH are not unique to the United States. Countries such as Australia, Kenya, the Netherlands, New Zealand, Norway, Scotland, and Sweden have had them for many years (Schwarz et al., 2020). The conflicting obstacles are that the D/HH population are quite heterogeneous. Individuals differ greatly based on their degree of hearing loss, age of onset, opportunities for early intervention, exposure to ASL, age and quality of amplification, whether their parents are Deaf, and amount and type of schooling. Of the Deaf population in the United States, 10% are born to Deaf adults and therefore experience age-appropriate language acquisition, and 35% are raised in homes that regularly use Spanish or other languages besides English and ASL (Schwarz et al., 2020). All these factors as

well as socioeconomic status play a role in the academic/social/emotional/behavioral development of a D/HH individual.

Within a school for the deaf that follows a bilingual/bicultural philosophy, ASL and English are taught as two separate and distinct languages. They are used at different times, rather than simultaneously. In this way, students do not experience confusion, the knowledge and abilities gained in one language have a beneficial impact on the other, balanced exposure is provided, and language development is fostered in both (Dubé, 2000; Priestley et al., 2018; Wilkinson & Wilkinson, 2020). Within this environment, children learn language naturally through everyday activities and social interaction.

Bilingual programs for Deaf students differ, however, from other bilingual programs. In this case, learning to navigate different languages that utilize different modalities (visual–aural, signed–spoken/written) presents a unique circumstance (Evans, 2004; McQuarrie & Abbott, 2013). The absence of a written form and the inconsistent exposure of Deaf children to a primary language are educational challenges that must be addressed through specific strategies and particular skills (McQuarrie & Abbott, 2013; Scott & Dostal, 2019). Explicit teaching and knowledge of ASL is critical and understanding how to bridge the transition to English is essential (Berke, 2013). For example, the realization that background information, necessary for comprehension, must be attained through ASL before moving into text is crucial for the child's successful approach to the written form.

In addition to the academic benefits of this approach to deaf education, there is a strong cultural component to its methods. Deafness needs to be viewed from a cultural model rather than a deficit model and therefore viewed as a culture not a disability

(Priestley et al., 2018; Wilkinson & Wilkinson, 2020). Within a bilingual/bicultural program, both the cognitive and the social/emotional development of the child are addressed. The goal is to maximize students' potential to participate in the Deaf community and society as a whole, as well as develop fluency in ASL, awareness of Deaf culture/values, and find their identity within the Deaf community (Dubé, 2000; Evans, 2004; Priestley et al., 2018; Wang et al., 2017; Wilkinson & Wilkinson, 2020). The transmission of culture is through peers and community rather than parents and family which makes for a unique circumstance. In much the same way, the acquisition of ASL goes beyond the simple learning of grammar and vocabulary but encompasses the full understanding of the Deaf community and its culture; with respect for its values and beliefs (Evans, 2004).

Deaf children within a bicultural/bilingual program learn more than one language, have improved access to language in general, have better learning potential, experience enriched life experiences, learn about Deaf culture, and gain the ability to understand and move between the Deaf and hearing world (Priestley et al., 2018). In addition to obtaining knowledge of the Deaf community, they also learn and experience how to function as a Deaf person within a hearing world through shared stories with peers and Deaf adults (Wilkinson & Wilkinson, 2020). They gain access to generations of Deaf individuals and organizations. These important associations not only establish life-long relationships but provide leadership opportunities and fellowship not readily found elsewhere.

*American Sign Language (ASL)*

William Stokoe, in the 1960s, first demonstrated that ASL was a real language with a unique grammar and syntax (Dubé, 2000; Evans, 2004). Through ASL, one can

request, command, argue, persuade, express feelings, tell jokes, and create poetry. It contains an internal structure, idioms, and classifiers, and is one of hundreds of sign languages used worldwide (Evans, 2004; Reagan, 2011). As is true of all spoken languages, ASL is a living and an ever-growing system in which its vocabulary and conceptual transmissions are continually increasing and changing.

ASL has several complexities that are unique to its structure and important to note. Despite past arguments, phonemes do exist within this language, in the form of parameters (Galvan, 1999). These parameters take on their individuality based on the location, movement, and palm orientation of the hand, similar to English, where a phoneme may take on a different sound based on its position in a word (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015). As in English, phonemes in ASL build to larger units, morphemes, and then into multimorphemic lexical items (Galvan, 1999). Whereas in English additional information is presented in sequentially produced units, in ASL, it is presented in simultaneously produced layers. Grammatically, the syntax of English and ASL are quite different. English typically follows a subject-verb-object word order. Although ASL may follow this order at times, it generally follows a topic/comment word order. In English, for example, the sentence may be, "She's upset that she lost her money." This same sentence in ASL would be signed in the order, her money lost, she upset. As one can see, these significant differences make reading and writing English challenging for the D/HH child (Evans, 2004; McQuarrie & Abbott, 2013). Trying to glean meaning from print, attempting to put thoughts and ideas on paper, or even for the adult interpreting text into ASL, can be extremely demanding.

Classifiers are unique to ASL. Although they have been compared to pronouns in that they represent the object or person being described, their production and expression of meaning reach far beyond a simple representation (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015). These classifiers are essential to the language and convey the substance of the story being expressed. They consist of five parameters: handshape, orientation, location, movement, and nonmanual markers (facial expressions, head nods, body tilts and eye gaze; Beal-Alvarez & Easterbrooks, 2013). The lack of facial expressions would be likened to sounding monotone. Handshapes and location parameters tend to carry more potential for lexical contrasts, like consonants in English, whereas movement is more vowel-like (McQuarrie & Abbott, 2013). Classifier one (CL:1), for example, is using the index finger to represent a pen, pencil, or a person. If you wanted to indicate that a person was walking down the street, you could hold your index finger and move it slowly back and forth while moving it forward, away from your body. This would be an appropriate way to use CL:1 to express that "the person was walking down the street." That one movement, in ASL, would be an interpretation of that complete sentence.

ASL is quite different in structure from English. It is a conceptual language and therefore it needs to be interpreted, not translated, to capture the feel of the narrative (Beal et al., 2020; Evans, 2004; Gee & Kegl, 1983). "Dirt floor," for example, needs to be carefully interpreted so it does not indicate a "dirty floor." Facial expressions, acting out, and body movements are not added features to ASL, but rather essential elements of its grammar and structure. Another unique aspect is keeping a sign in the foreground with one's nondominant hand while storytelling (Gee & Kegl, 1983). If you are talking about a

particular character that you have already established with your index finger, you will keep that index finger held while signing the action with your other hand. In this way, the receiver of information clearly understands that the person was present while the action was taking place. Deaf students' use of classifiers within narrative tasks demonstrates their comprehension of the characters and their actions (Beal-Alvarez & Easterbrooks, 2013). To produce these elements appropriately, students must have knowledge of sentence structure, handshape selection, and the ability to represent two or more objects in space.

It is these classifiers as well as other complexities of ASL that define the differences between it and English. Due to these complexities, attempting to translate ASL into a written language is quite difficult. The translations do not capture the feel of the narrative, nor do they pick up on the conceptual nature of the communication (Beal et al., 2020; Evans, 2004; Gee & Kegl, 1983). In ASL, for example, one sign can have multiple meanings and the differences are transmitted through the intensity in which it is produced or by the facial expressions that accompany it. These subtle differences are easily missed when through-the-air communication is put down on paper (Beal-Alvarez & Scheetz, 2015). In addition, non-manual markers bring the specific grammatical pieces, such as punctuation, which also can be missed during a translation. One can write the gestalt of the story that someone signs, but the sentence structure cannot be transcribed. Storytelling involves facial expressions, acting out, and body movement (Beal et al., 2020). Children demonstrate both observer and participant perspectives in their expressions. The complexity and flexibility of Deaf children's manual production

skills (ASL) may exceed the level of functioning indicated by analyses of their English skills (Marschark et al., 1994).

### *Bridging Literacy: ASL to English and English to ASL*

For effective English reading instruction, appropriate strategies for bridging ASL and English must be employed (Andrews, 2012). Simply knowing and using ASL does not mean a child will automatically acquire literacy skills because mapping ASL to English or English to ASL is not a direct process. The challenge for the educator is to make meaningful associations between a visual language and the written system so the D/HH students can recode the print into ASL (Berke, 2013). To accomplish this, single words/signs to print are not enough; the syntax or grammatical structure of both languages needs to be understood, compared, and explicitly taught (Andrews, 2012). This is where that strong foundation in ASL, the D/HH child's primary language, becomes essential to learning the necessary skills in their second language, which in this case is English.

As a teacher signs, voices, and references print, students begin to understand the connection between language through the air and language in print. It provides them with access to the rich vocabulary and language only found in text, and not in casual conversation. Presenting isolated subskills such as letter knowledge, matching ASL handshapes to signs, or matching pictures to the printed word, outside of whole stories, is not reading (Andrews, 2012). D/HH students, especially, need to spend more time with texts to connect, compare, and grow their knowledge of vocabulary, form, structure, and use of the written word. This fostering of their known language (ASL) with direct instruction in their second language will result in English literacy (Bailes, 2001).

Through ASL, D/HH students make sense of their world and in turn make sense of printed text. It is through this mode of communication that the accessible avenue for active involvement with learning content and language learning is made available (Bailes, 2001). English is largely shaped by word order and the use of particles (prepositions and conjunctions; Andrews, 2012). If you change the word order of the sentence, you change the meaning due to the linear sequential nature of the language. ASL, however, is a language of movement and space as well as facial expressions such as raised eyebrows, head tilts, shoulder shifts, and mouth movements, to show grammatical meaning. The five parameters of ASL (handshape, palm orientation, movement, location, non-manual signals) are crucial in terms of accurately conveying the meaning of one's message and they impact one's comprehension of transmitted information (Bailes, 2001). Changing or misunderstanding any of the parameters can completely alter the intention of the informant. For example, the signs for the words "family" and "important" both use the "F" handshape yet have opposite actions with their movements. Another example can be found in the difference between interpreting the phrases "the dirt floor" and "the dirty floor," as was referenced previously. If these sentences were to be signed in a linear fashion, following a word-for-word translation, then only the latter meaning would be conveyed. However, to accurately interpret the meaning of the former, one would need to express that the floor was made of dirt. In this way, English instruction becomes truly integrative with ASL.

Connecting ASL signs, fingerspelling, and spoken words to printed words fosters students' competency to sequence the events in a story and to answer questions. Focusing on the code-related skills needed to understand the relationships between letters and

sounds, segmentation of words and sentences, as well as print concepts are essential for the transition between languages (Schwarz et al., 2020). Always keeping the English text visible, as stories are interpreted, as well as rereading are essential components of effective teaching. With young children, storybooks are often summarized into ASL, relying heavily on the use of illustrations and role playing to hold their interest and to clarify meaning (Schwarz et al., 2020). When the story is understood, the teacher will move toward storysigning, where they point to the text as they sign. Once the students are familiar with the story and the vocabulary, the teacher will sign using English word order to convey the language of the book.

As stated earlier, translating a text into ASL is no easy task. Deciding on what signs are appropriate, what vocabulary to teach, and whether it is more important to summarize the information or for the students to experience the flow of the language are just some of the aspects to be considered (Bailes, 2001; Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015). Although at times condensing the text is fitting, educators should not avoid reading challenging passages of text. Narratives should not be simplified by excluding unknown vocabulary or rewritten using shorter or simpler sentences. Rather, complex and abstract texts should be translated into ASL and then followed by a verbatim reading of the passage (Andrews, 2012). Even interpreting storybooks can be difficult. If the teacher simplifies the vocabulary and text and too closely aligns their interpretation with the illustrations, it may deprive the students of the opportunity to make predictions and inferences (Schwarz et al., 2020). When the sentence structure differs dramatically from the source, then the flow of that language is lost.

*Narrative Discourse*

Fostering the development of age-appropriate literary skills has long been regarded as the central mission in the education of deaf students (Demers & Bergeron, 2019; Marschark et al., 1994). Whereas hearing children generally engage in conversations in and out of school, deaf children born to hearing parents and educated in the mainstream often have limited opportunities for these behaviors. Language is learned through communication for the purpose of communication (Evans, 2004; Scott & Dostal, 2019). When very young children are taught language through structured lessons, the basic purpose for learning language, that is, to communicate with others, often is obscured in the imitating and patterning activities. For Deaf children to understand that language is a way of influencing their environment and the people in their environment, they must be exposed extensively to language as it is used in communication (Galvan, 1999; McQuarrie & Abbott, 2013). This opens the door to the significance of narrative discourse.

Current thinking considers that language development centers on the social context in which language occurs (Dubé, 2000; Priestley et al., 2018; Wang et al., 2017). When children study the formal aspects of language, they should study the syntactic, semantic, and pragmatic components simultaneously. Children do not learn language by studying it sentence-by-sentence, but rather by understanding and using syntactic and semantic elements acquired within extended conversational exchanges (Evans, 2004). They learn language because they engage in conversations with other children and adults in a multitude of settings for a variety of purposes.

Research focused on students' original stories has used stimuli ranging from nonexistent to highly structured. Some prompts have included story stems, themes,

scripts, physical prompts, pictures, and picture sequence cards. This type of storytelling is universal and is considered a basic form of everyday communication. It is more representative of spontaneous language than retells but often is shorter, contains less story grammar, and has fewer complete episodes (Beal et al., 2020; Dubé, 2000; Tarwacka-Odolczyk et al., 2014). Original stories also highlight more of the child's general knowledge, specific knowledge, and knowledge of the interactional situation with the listener.

Retells assess the child's comprehension of the story as a whole. They rely on the youngster's ability to maintain and actively integrate linguistic information in working memory and to form mental models of the situations described in the stories. Retells provide more structure than self-generated stories (Bowe, 2002; Dubé, 2000; Wang et al., 2017). They are affected by the child's previous knowledge of story scheme, existence/nonexistence of causality, constructive memory, language comprehension, and their own characteristics (e.g., age, reading ability, home language, and gender). Students' knowledge and use of phonology, morphology, syntax, semantics, and pragmatics directly affect their abilities with retells (Mayer & Trezek, 2014). Beyond story grammar, retells stretch children in their use of literate language and use of cohesive devices. Their ability to integrate metacognitive verbs, metalinguistic verbs, elaborated noun phrases, and referential, conjunctive, and lexical cohesion informs the instructor as to their strengths and is a predictor of their potential with regard to reading and writing (Mayer & Trezek, 2014).

### *Storytelling*

Storytelling is a common medium used by children in all languages and provides a natural environment for language sampling. It contributes integral information for a

complete language evaluation and is a strong predictor of language ability, academic performance, and academic achievement (Dubé, 2000). Oral narratives are rich sources of data in that they document children's language, are a naturalistic context, and provide multiple linguistic features for analysis (i.e., vocabulary, grammar, and text level organizational skills; Dubé, 2000; Heilmann et al., 2010). As children are engaged in this activity, they create their own stories involving characters, setting, and plot; retell stories; and convey information (Tarwacka-Odolczyk et al., 2014). Using discourse as text transmits information in social situations, provides a naturalistic approach, and focuses on the semantic unit of meaning (Tarwacka-Odolczyk et al., 2014).

The act of storytelling encompasses a multitude of avenues for students to excel and for teachers to analyze areas of need while encouraging children in their expression. An assessment will find difficulties with appropriate use of vocabulary and grammar, organizational issues, break downs with communication, and competency with length and complexity of language (Heilmann et al., 2010). In addition, storytelling is active and intentional while involving fluency, semantic skills, memory (processing skills), vocabulary, inferences, grammatical structure, prior knowledge, and verbal ability (Bellinger & DiPerna, 2011). It is a significant instructional approach which not only reflects the specific skills and abilities of the students but mirrors the entire child. The individuality of the youngsters' prior experiences, their culture, language, thought processes, and values are brought to light through this process (Dubé, 2000; Lockett & Jones, 2009). Whether narratives are spoken, written, or signed, children can express their stories in their own unique and self-identifying way. However, up to this point, no

studies have been produced that assessed Deaf students' ASL narratives in their original form.

*Story Structure*

In 2009 and 2010, the National Governors Association and the Council of Chief State School Officers created the Common Core State Standards (CCSS). As clearly indicated in these documents, under the subsection of English Language Arts, the act of storytelling, as well as the structure it employs, was described under the headings of Reading as well as Speaking and Listening. This inclusion demonstrates the importance these bodies placed on storytelling and provides evidence for the need to assess these skills to provide accountability for student progress. The specific CCSS that address storytelling for Grades 4, 5, and 6 are as follows:

CCSS.ELA-Literacy.RL.4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).

CCSS.ELA-Literacy.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace

CCSS.ELA-Literacy.RL.5.3 Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact)

CCSS.ELA-Literacy.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace

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CCSS.ELA-Literacy.RL.6.3 Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution

CCSS.ELA-Literacy.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation. (Common Core State Standards Initiative, n.d., p. 12)

It is evident that instruction as well as analysis and evaluation of narrative proficiency is of critical importance (C. Hall et al., 2021).

Story structure is a representation of how stories are organized. The essential elements of story grammar are setting, main characters, and episodes, which include initiating events, attempts to achieve goals, and outcomes or consequences (Khan et al., 2016). Gee and Kegl (1983) discussed the importance of the introduction of the story, action and result, and tension and suspense as critical components.

In the analysis of stories, researchers investigate both the macrolevel and microlevel of story structure. The macrolevel involves the organization of the discourse into a coherent whole. The components include setting, characters, initiating event, internal response, internal plan, attempt, consequence, and reaction (Dubé, 2000; C. Hall et al., 2021; Heilmann et al., 2010; Khan et al., 2016; Lucero, 2018). The microlevel of analysis involves the linguistic form of the narratives with conventions such as verb and noun modifiers, frequency of complex sentences, and conjunctions (C. Hall et al., 2021). Although there are inherent differences between ASL and English, story structure is a viable form of analysis for Deaf children who use ASL (Dubé, 2000).

*Empirical Research*

Storytelling, both original and retells, is rich with literary possibilities. It allows children, both hearing and Deaf, to freely express themselves by sharing personal experiences, factual information, background knowledge, and culture ideologies and values while satisfying their social/emotional needs to communicate (Andrews, 2012; Bailes, 2001). By analyzing these narratives, one can investigate the complexity of the student's language based on a variety of rubrics and scales that have been designed to study both the macro and the micro-structure of this discourse (Dubé, 2000). By recognizing ASL as a Deaf child's primary language and assessing their linguistic skills in that language, one can begin to acknowledge the level of literary skill they possess.

**Original Stories.** Research studies based on original stories with Deaf children are far less prevalent in the literature than those involving retells, as shown in the Summary of Empirical Studies (see Appendix A). Dubé's (2000) investigation involved 39 Deaf children in a bilingual/bicultural program in Canada. These youngsters, ages 4–11 years, were presented with six sequential pictures, one at a time, and were told to look at them and create a story. The narratives were then transcribed into English and analyzed for elements of story grammar and episodic structure.

In the Marschark et al. (1994) study, 22 Deaf children, ages 8–14 years, were compared to 23 hearing children, ages 7–15 years. The students were given a topic from which they needed to construct a story. With the hearing children, stories were transcribed word for word and for the Deaf children, stories were translated sign-by-sign. Once this was completed, stories were analyzed using GAO (goal–action–outcome). The nine categories within this analysis were complete G-A-O sequences, incomplete G-A-O sequences, explicit goals, implicit goals, subgoals, goal directed action, non-goal directed

action, outcomes, and non-G-A-O statements. Marschark et al. examined the conceptual coherence within the discourse by studying the following: setting, event, internal response, goal, action or attempt, and outcome.

Although in both the study by Dubé (2000) and Marschark et al. (1994), original stories were elicited from the students, prompts were given. In the former investigation, the children were given a series of pictures from which they were to formulate a story, and in the latter, a specific topic was offered for the students to consider. Even though the stories were video recorded, the original language of the students was then transcribed into the written form prior to being assessed for story grammar and story structure. In so doing, the Deaf children were not evaluated in their primary language and therefore an equitable analysis of their language levels was not achieved. In these cases, one must question the findings in that by gathering a sample in one language and evaluating it in another provides the researcher with skewed data at best.

**Retells.** The summary of empirical studies highlights the following investigations (see Appendix A). In the studies by Bellinger and DiPerna (2011), Galvan (1999), and Wang et al. (2017), utterances and semantic features of language were analyzed within retell narratives. These investigations examined the number of words, morphologically complex verbs, and the function of ASL and SIMCOM as communication modes. The samples included students from Preschool–Grade 8, ages 3–14 years, and over 60 Deaf children. In the study by Bellinger and DiPerna (2011), hearing children read a passage and then retold the story. In the Wang et al. (2017) study, the Deaf students watching a signed story on video in both SIMCOM and ASL, which they then needed to retell.

Finally, in the study by Galvan (1999), Deaf children looked through a picture book and then retold the story in ASL.

The analysis within each study showed significant differences. Bellinger and DiPerna (2011) used DIBELS–RTF (retell fluency) to investigate the number of words used in the retells. They found significant differences when comparing the recorded results with the live results. This was due to the speed at which the children spoke and the inability for the scorers to keep up with their language use. However, it did serve to emphasize the importance of recording data prior to analysis. In Galvan's (1999) investigation, the retells of the Deaf children were recorded but were then translated into English before they were coded. Therefore, the integrity of their primary language was compromised. However, the results did demonstrate the importance of early exposure to ASL. In Wang et al. (2017), the Woodcock-Johnson Tests of Achievement–subtest Story Recall was used for assessment. In this study, it was shown that presenting resources in SIMCOM confused the message by overwhelming the students with two languages simultaneously. Giving the material in ASL, produced higher scores for story recall.

Beal-Alvarez and Easterbrooks (2013), Beal-Alvarez and Sheetz (2015), and Tarwacka-Odolczyk et al. (2014) utilized the features of ASL as their focus into the children's retells. They investigated the fluency and visual grammar, the use of classifiers, and the story length and semantics of the students' narratives. In the investigation by Beal-Alvarez and Easterbrooks (2013), 10 D/HH students ages 7–10 years were given picture books to tell stories to a familiar adult. In the study by Beal-Alvarez and Sheetz (2015), two Deaf boys from Deaf families retold the story of *Good Night, Gorilla* after viewing a native ASL user sign the story as a model. Tarwacka-

Odolczyk et al. (2014) followed 24 Deaf children, ages 8–9 years in Poland, in their retelling of familiar stories to their teachers.

In the study by Beal-Alvarez and Easterbrooks (2013), the emphasis was on classifier production. Understanding that classifiers, in ASL, transmit the meaning of English concepts stresses the significance of assessing D/HH children in their ability to produce them appropriately. A child who can demonstrate their use within retells is ultimately expressing comprehension of the characters and their action (Beal-Alvarez & Easterbrooks, 2013). In the case of this investigation, although the retells were video recorded and transcribed, the purpose was not to assess the stories using English but rather to notate the use of classifiers and the number of events included. Although classifier use is directly linked to reading comprehension, this investigation was more concerned with this component of ASL rather than overall narrative story structure.

Beal-Alvarez and Sheetz (2015) utilized the Signed Reading Fluency Rubric (SRFR) to rate the retells of two Deaf children. Although the SRFR was designed to assess the read-aloud skills of D/HH students, it was adapted to assess narrative retell skills. Being that these scores were found to correlate to reading comprehension scores (Easterbrooks & Huston, 2008), this investigation was to measure a teacher/interpreters' skill in effectively using this rubric (Beal-Alvarez & Sheetz, 2015). The retells of both boys were video recorded but were not transcribed. In this case, the videos were watched multiple times and stopped when needed to complete the 13 components. Certain aspects of ASL production were captured by this assessment; however, because it was not designed for narrative retells, areas related to story structure were not assessed.

Tarwacka-Odolczyk et al. (2014) compared D/HH students' retells when their audience was familiar with the story with those of when the audience was unfamiliar. The researchers found the students' stories were more elaborate, imaginative, and contained more information when those watching had never read the story prior to this retelling. In this case, the retells were video recorded and then transcribed from Polish Sign Language (PJM) to Polish before being analyzed. Although the findings were as expected, one of the limitations of this study was that the analysis did not take place with the students' language in its original form.

The remainder of the studies that investigated story retells utilized Narrative Scoring Scheme (NSS) in their analysis of the data. All four of these studies were conducted with hearing children from Preschool–fourth grade. In one exploration, teachers read picture books to the students and then they used those books as prompts to retell the stories (Khan et al., 2016). In the study by Miller et al. (2018), one storybook was used for every three sessions and elements of story grammar were taught explicitly. In Lucero's (2018) study, wordless picture books were read to the students in both English and Spanish. The students retold their stories in both languages. Finally, the last study involved oral retells from picture books (Heilmann et al., 2010).

Utilizing the NSS, retells were analyzed on both the micro and the macro levels. The micro-level included both vocabulary and grammar. This involved main clause, subordinate clauses, TNW (total number of words), NDW (number of different words), MLUW (mean length of utterance in words), and the subordination index (SI; Heilmann et al., 2010; Khan et al., 2016; Lucero, 2018; Miller et al., 2018). An analysis of the macro-level examined the story structure of the retells. The first examination was of the

overall impression of the child's narrative ability based on seven story elements scored on a 5-point scale. Second, story structure items were analyzed on a scale of 0–1. Story grammar was examined for the story's introduction, major conflicts, resolutions, and conclusions. Finally, story retells were studied for their use of metacognitive verbs to describe thoughts and feelings, differentiation between main and supporting characters, pronouns and antecedents, and appropriate ordering and emphasis of critical events and transitions (Heilmann et al., 2010; Khan et al., 2016; Lucero, 2018; Miller et al., 2018). These researchers found the NSS to be an efficient and informative tool for documenting children's development of narrative macrostructure and microstructure.

Thus far, data gathered from the NSS have demonstrated a relationship between vocabulary/grammar (microstructure) and narrative macrostructure (Heilmann et al., 2010). Researchers have documented that this measure indicates competency in overall oral narratives in a naturalistic context. With children having special needs, the NSS has shown that it is more closely related to linguistic skills than the nonverbal IQ tests (Heilmann et al., 2010). Hearing youngsters with language deficits have had limited competency in producing sentences and in extended discourse as measured by this instrument (Heilmann et al., 2010). These findings had a profound effect on the population that was the focus of the current study. If the Deaf students scored within the proficient or emerging categories on the NSS using ASL, this would show that they were not language deficient. If, however, they did score in the minimal category, then perhaps they do have a language deficiency and therefore will require a very different course of action. In addition to teasing out those students with language impairments, this test also

measures two of the fundamental standards within the CCSS. As a major component of the school curriculum, this instrument takes on a higher priority.

**Comparative Analysis of Original Stories With Retells.** Following an analysis of the data from the research studies utilized for this review, it was found that the organizational skills recognized in students' narratives were directly related to their vocabulary skills, their story grammar, and their cohesive storytelling. Children who struggled with reading comprehension tended to tell less organized stories whereas those that told more organized stories had better reading outcomes and demonstrated character development within their discourse (Heilmann et al., 2010; Lucero, 2018; Miller et al., 2018). When comparing retells with original stories, it was found that retells were longer and contained fewer inaccuracies as well as more episode-related story components (Dubé, 2000; Khan et al., 2016; Lucero, 2018). Picture-supported retells were less challenging than those from memory and the method used to elicit the story largely influenced the content and structure of the narrative.

Regarding the macrostructure and microstructure of the stories, following a thorough analysis of the data, Heilmann et al. (2010), Khan et al. (2016), and Lucero (2018) reported that there was a developmental pattern for story structure skills. They noted there was a clear age-related progression to the development of story grammar, vocabulary acquisition, inclusion of story structure components, and sequencing of story elements. Regarding microstructure, TNW and NDW had little effect on narrative productivity and younger students scored lower on measures of story grammar than older students (Dubé, 2000; Miller et al., 2018). Complexity of grammar equated with length of stories.

Within the studies that were investigated for this review, some researchers allowed students to use prompts that the adults could not see. In these cases, the children produced more statements within their narratives, formulated more spontaneous statements, produced more statements after questions, elaborated more on events, added more new content, used more imagination, and used knowledge of possible inner states of characters (Tarwacka-Odolczyk et al., 2014). In cases where the child was the sole source of new information, the narratives were more extensive and complex on the lexical, syntactic, and semantic levels.

**Summary**

Deaf children may lack the literary and syntactic tools to implement their stories in English, but they do possess awareness of discourse rules. This demonstrates significant skills that are often overlooked when analyzing their literacy skills (Marschark et al., 1994). Their ASL stories were shown to be coherent with G-A-O sequences which were equivalent to their hearing peers. Lockett and Jones (2009) espoused the advantages of utilizing "oral" narratives within the classroom. They discussed the enhancement of "oral" skills and vocabulary building that comes from this discourse. In addition, they promoted the importance of developing "listening" skills and the expansion of a child's attention span. Other strengths of storytelling included the development of stronger writing skills, ease to remember facts, introduction of students to diverse cultures, accessibility, and the development of recall knowledge.

The studies in this review point to the fact that narrative discourse is an effective method to evaluate children's micro- and macrostructure. However, little research in this regard has taken place with Deaf students and no research has been found that analyzed Deaf children's story structure in ASL, with original stories or retells, without being

transcribed into English. If comparisons are to be drawn between these two populations, then to be equitable, they must be made using the primary languages of each. This was found to be the most pervasive limitation for most of the studies reviewed and was the gap upon which the current study focused.

Storytelling, a common ground for children, not only allows students to get to know each other and feel part of a community in a way that might not be achieved by other means, it also serves as an authentic measure. Sharing stories in elementary school classrooms positively affects students and their capacity to learn (Lockett & Jones, 2009). It provides the educator constructive insight into the child's language level within their primary communication method, which aligns with the emancipatory/critical disability theory by recognizing and respecting ASL and therefore the identity of the youngster (Barton, 2005). It also follows Cummins's (1979) second language acquisition theory in the view of the importance of building a strong foundation in a child's primary language as well as the value placed on bilingual/bicultural programs. It is these theoretical frameworks as well as the referenced inquiries that laid the groundwork for this study.

# CHAPTER 3 METHODS AND PROCEDURES

## Restatement of Purpose

There is a theoretical trend in teaching literacy skills to Deaf children that is moving away from mechanistic approaches, based on the analysis of syntax and morphology, and toward more naturalistic approaches (Dubé, 2000; Heilmann et al., 2010). These theories relate to the significance of cognitive and social contexts in the comprehension and production of narrative discourse (Tarwacka-Odolczyk et al., 2014). Historically, it had been accepted that Deaf children would have difficulty with English language-related tasks and therefore were labeled language deficient. However, when this population is assessed in their primary language, ASL, the richness and complexity of their literary abilities becomes clear (Beal et al., 2020; Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Dubé, 2000; Lucero, 2018). During this activity, students bring themselves to the situation in terms of their background knowledge and their past experiences. It is these very personal aspects that add depth and understanding to the material being discussed. When students share their perspectives and others react and comment on what was proposed, educators have the opportunity to highlight similarities and differences and demonstrate respect for others' values and opinions (Dubé, 2000; Lockett & Jones, 2009).

It is within this context and with attention to addressing the past inequities that have occurred in assessing and comparing the language abilities of Deaf children with hearing children that the following research questions and subsequent research design were developed and approved (see Appendix B).

Overarching Goal: To examine the differences in story structure within original stories and retells for both Deaf and hearing children when assessed in their primary languages.

Quantitative Questions:

1. Were there significant differences between story structure with the original and retell stories of Deaf fourth, fifth, and sixth graders whose primary language was ASL?

2. Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in original stories?

3. Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in retells?

Qualitative Question:

4.  How were the unique characteristics of ASL and Deaf culture reflected in the original and retell storytelling of the Deaf fourth, fifth, and sixth graders?

Mixed Methods Question

5. How did the quantitative comparative results and the qualitative findings converge to demonstrate the narrative literacy performance level of Deaf students when assessed in ASL?

**Research Design**

This was a convergent QUAN + qual mixed methods study. As indicated, the emphasis of this inquiry was the quantitative phase of this research. The purpose was to examine the differences between the Deaf fourth, fifth, and sixth graders who consider ASL to be their primary language and typical fourth, fifth, and sixth graders when comparing their story structure with original stories and retells. Additionally, a comparative analysis took place to examine the differences between the story structure with original and retell stories of Deaf fourth, fifth, and sixth graders who considered ASL to be their primary language. Concurrently with the collection of the Deaf students' stories, both original and retells, the qualitative phase of this study took place. The purpose of this qualitative phase was to allow the Deaf students to express themselves freely in explaining their reasons and choices behind their storytelling as well as provide any other information regarding their characters, settings, or sign choices they deemed necessary. In addition, if they felt further background knowledge or explanations were needed, they were given the opportunity to communicate that information. Once all data were collected and analyzed, the merging of the two phases informed the results for the study in its entirety (see Figure 1).

In keeping with the emancipatory theory/critical disability theory as well as second language acquisition theory, it was both critical and essential to analyze all data, gathered in ASL, from the original video recordings rather than from text translations. This not only ensured more accuracy and less bias but helped to prevent a perceived form of paternalism, which occurs when original utterances are translated into the majority language (Anderson et al., 2018). To approach this study in a manner that respected the language, thought, and culture of this often-marginalized population, it was important

that the integrity of the data be preserved and approached in an innovative way. Because the Deaf student participants identified ASL as their primary language, all stories that they produced needed to be analyzed in this fashion. In addition, all subsequent interviews/discussions with these students, during the qualitative phase, needed to be video recorded and analyzed from their original ASL form.

**Research Setting and Participants**

The sampling plan for the quantitative phase, with regard to choosing the Deaf students, was purposive sampling. Because the population was very small and the criteria for inclusion in the study needed to be quite specific, this method of sampling was deemed to be most appropriate. Students were chosen from a school for the Deaf in the southeastern region of the United States. Criteria for inclusion in this study included attendance at a school for the deaf in the United States for a minimum of 3 years, ages needed to be between 9.0 and 11.11 years old, ASL was identified as their primary mode of communication, students had been using ASL for a minimum of 3 years, their family's primary language was English, and the students had no diagnosed language disabilities.

Eleven Deaf students, four boys and seven girls, were selected to participate in this study. After acquiring permission from the school administration (see Appendix C) and families (see Appendix D), the researcher met with the students to review the procedure and purpose of the study (see Appendix E). The students were told to prepare an original story that they would relate to the examiner in ASL and that would be video recorded. The story could be a true experience that happened to them, but it could not be based on a book, movie, or television program. In addition, the students related a retell based on the book, *Drawn Together*, by Minh Lê (2018). This picture book, with a sparse use of words, was chosen due to its theme of communication and celebrating differences.

The researcher signed the story, through the use of the illustrations, and then the students signed the story back to the researcher using their own interpretation.

The sampling plan for the quantitative phase, regarding choosing the hearing students, was convenience sampling. In this case, students were mostly chosen from the southeastern region of the United States, with one student chosen from a midwestern state that was geographically convenient for the researcher. Individual students were chosen from a variety of after-school programs and from neighborhood inquiries. Criteria for inclusion included age being between 9.0 and 11.11 years old, primary language was English, had lived in the United States for a minimum of 3 years, families spoke primarily English in the home, and the students had no diagnosed language disabilities.

Seven hearing students, five boys and two girls, were selected to participate in this study. After acquiring permission from the families (see Appendix F), the researcher met with the students to review the procedure and purpose of the study (see Appendix G). The students were told to prepare an original story that they would relate to the examiner in English and that would be video recorded. The story could be a true experience that happened to them, but it could not be based on a book, movie, or television program. In addition, the students related a retell based on the book, *Drawn Together*, by Minh Lê (2018), which was the same book used with the Deaf students. In this case, the researcher told the story in English, through the use of the illustrations, and then the students related the story back to the researcher using their own interpretation.

Once the stories, both original and retells, had been video recorded as part of the quantitative phase, open-ended questions were asked of the Deaf participants to later enhance and enlighten the results found. These questions served to allow the students to

expand on their storytelling and provide opportunities for further explanation and information sharing.

**Data Collection**

*Quantitative Phase*

Once all necessary permission forms had been signed and collected, demographic information was gathered from the families of both groups of students by surveys. This included number of years in school, primary language used in the home, occupation of the parents, socioeconomic status of the family, ethnicity, number of siblings, child's position within the family (e.g., first born, second child, etc.), and the child's extracurricular activities (see Appendix H). Additionally, for the Deaf students only, the following information was collected: age of diagnosis, type of amplification, and communication system used at home (see Appendix I).

Once at the school for the deaf, the principal accompanied the researcher and the videographer to a designated room. Students were brought to an outer waiting area in small groups to wait their turn for the study. Each individual student was brought into the recording room where they were formally introduced to the researcher and the videographer. The researcher then explained the procedure for the study, read and received consent from the student with use of the assent form (see Appendix E), and then set up the participant for the videorecording. Each student was first asked to tell their original story. For some students, questions or prompts were needed to assist them in getting started with their stories. These included "What did you do over the weekend?" "Do you have any pets? Tell me about them" "Tell me about your day" "What do you want for Christmas?" "What will you do for your birthday?" and "Tell me about a vacation that you went on with your family." Upon completion of their story, open-ended

questions were asked to elicit further information, expanded language, or provide opportunities for clarification. When it was clear the student had exhausted their story, the book, *Drawn Together*, was introduced. The researcher read the book to the participant using the illustrations to point out details in the story. The student was then given the book and asked to read it giving their own interpretation. Once this was concluded, the individual session was concluded. With the help of the principal, all 11 Deaf students were videorecorded in 1 day. As one child completed their session, the next child was waiting in the outer room to enter the work area to begin their storytelling. This made for smooth transitions between participants with little to no down time between students. Although some of the children were dormitory students, all of them were videorecorded during the school day. The researcher conducted the study in ASL with the assistance of a technician to operate the digital recording equipment. This technician had expertise in filmmaking and ASL to ensure the visual linguistic data being captured were both within the frame of the shot and in focus; common pitfalls of videographers unfamiliar with filming sign language (Anderson et al., 2018).

With the hearing children, because the participants were selected from various locations, data collection took place over 3 months. For the three students drawn from after-school programs, the videorecording sessions took place at those locations. With three students, their videorecording sessions took place either in their homes or in a mutually agreed upon location. The one student from the Midwest was videorecorded over Zoom. As with the Deaf students, each session was done individually and began by gaining the consent of the child using the Assent form (see Appendix G). Each student began by telling their original story. Once completed, the book, *Drawn Together*, was

introduced and read. Then, each child was given the book and told to retell the story in their own words. The researcher conducted the study in English with the assistance of a technician to operate the digital recording equipment.

**Instrument.** The assessment tool chosen for this study was the NSS. This instrument's procedure involves a scoring guide, as shown and detailed in Appendix I, that allows the rater to measure the features of story structure for students in Prekindergarten through sixth grade. Each story is scored on a 5-point scale ranging from 1 (*minimal/immature*) to 5 (*proficient*). A score of 0 is only given if the student is completely unintelligible or refusing to complete the task. In scoring a story, a rater will utilize a score of 3 to indicate an emerging skill. A score of 2 or 4 may be indicated depending upon the scorer's judgment. For example, in the category of introduction, a score of 5 would indicate the setting was established with sufficient detail and the characters were introduced with some description. A score of 3 would indicate the setting was given in general with no specific details, and the characters, although introduced, were given no descriptive characteristics. Finally, a score of 1 would indicate the child started telling their story without establishing a setting or introducing any characters. A rater may indicate a score of 4 or a score of 2 for any story that falls between these categories.

The categories assessed within the NSS are Introduction, Character Development, Mental and Emotional States, Referencing/Listener Awareness, Conflict/Resolution and Event/Reaction, Cohesion, and Conclusion (Heilmann et al., 2010). The Introduction involves the stating of both the setting and the characters in the story. Whether the students provide this information and the amount of detail that they include affects the

score they are rated. Character Development refers to the main and all supporting characters within the story. How these individuals are treated and any distinguishing features that evolve among them will affect the rating score. Mental and Emotional States include the manner in which the students express any emotions the characters are feeling and what their characters are thinking during the story. Referencing/Listener Awareness involves the way the characters are referred to within the story. Whether it is clear to the "listener" who is talking or who is being spoken to, within a dialogue, will affect the scoring. Conflict/Resolution and Event/Reaction refers to how well the plot is described and detailed to move the story forward. If there are no conflicts or events mentioned within the narrative, then this will negatively affect the rating. Cohesion involves the transition between events and the organization of the story. Finally, Conclusion refers to how well the student wraps up their narrative. If the child simply stops "talking" and the listener must inquire if the story is finished, this will negatively affect the rating of the narrative.

The NSS was developed to comprehensively measure the macrostructure of a student's narrative. It provides an index of a child's ability to produce a structurally sound and coherent story (Heilmann et al., 2010). The NSS was normed on typical students to establish a baseline with which to measure all students in discovering those with language deficits. The interrater reliability study that was conducted on this instrument was found to be .79 based on Krippendorff's Alpha Reliability (Heilmann et al., 2010). This is an acceptable reliability in that the score was greater than 75%.

**Raters.** Once the original stories and the retells had been video recorded for both the Deaf students and the hearing students, it was time to organize the raters, arrange for

training, and score the narratives according to the NSS guidelines. A local library setting was utilized for the viewings of the Deaf participants, as it was a central location and had a private room for just such an event, whereas the viewings for the hearing students took place in the researcher's home. Each rater was provided with the following: the NSS scoring guide (see Appendix J), which provides a detailed explanation for each rating of minimal/immature to proficient for each of the seven categories; a scoring guide for the book *Drawn Together* that detailed the elements for each rating (minimal/immature to proficient) for this specific book (see Appendix K); and a blank form on which each rater scored the two stories for each participant (see Appendix L). The NSS scoring guide was obtained from the SALT Software, LLC and the scoring guide for *Drawn Together* and the blank scoring form were created by the researcher. Time was spent reviewing these materials and giving specific examples while answering all questions that arose. Following this training, for the purposes of establishing interrater reliability, they then scored the stories direct from the video recordings.

For the Deaf students' narratives, two Deaf adults who were fluent in ASL and college educated were selected to rate these stories. They were trained by the researcher in the workings of the scoring rubric and were given ample time to review all the materials prior to scoring the 11 original and 11 retell stories. If there was a significant discrepancy among the raters, a third rater, who was Deaf, college educated, and fluent in ASL, was ready to step in to rate the stories. This was not necessary.

With the narratives of the hearing children, two hearing adults who were fluent in English and were former college professors were selected to rate these stories. They were also trained by the researcher in the workings of the scoring rubric and were given ample

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time to review all the materials prior to scoring the seven original and seven retell stories. If there was a significant discrepancy among the raters, a third rater, who was hearing and college educated, was ready to step in to rate the stories. This was not necessary.

*Qualitative Phase*

Concurrently with the video recording of the Deaf students' stories, both original and retells, they were asked a series of open-ended questions related to their storytelling. As with their stories, it was important and necessary to videotape all conversations/discussions, for unlike traditional qualitative research conducted with hearing participants, interviews with signing Deaf participants must be video recorded to capture data accurately and fully (Anderson et al., 2018). The videographer was fluent in ASL and skilled in filming sign language.

Just as with the Deaf students' stories, it was critical that the Deaf students' responses were not translated into text. Instead, all video recordings were kept in their original forms to preserve their integrity and were coded by the raters utilizing the eight classifiers as identified to the integral spatial structuring of ASL (Project Climb, 2021). In this way, the students' original stories, retells, and responses to open-ended questions all provided data toward the qualitative analysis.

Although the researcher, in this case, was fluent in ASL, she was not a member of the Deaf community but rather a member of the majority hearing community. This still labeled her as an outsider. Though this afforded her the ability to gather the necessary data, there could have been implications at the time of analysis. Therefore, it was critical to involve Deaf community members in the analysis process to avoid cultural bias from either party (Anderson et al., 2018).

**Positionality**

As an educator of the deaf, an advocate for equal access for deaf individuals, an uncertified sign language interpreter, and the wife of a deaf man, it was impossible for this researcher to separate professional and personal experiences from this study. In fact, it was this investigator's background and interest that prompted the questions and led this researcher in the process of conducting the inquiry, collecting the appropriate data, and in the analysis of the findings. Having worked as a teacher of the deaf, a principal at a school for the deaf, and as an educational interpreter within an elementary inclusion program provided this researcher with a unique opportunity to relate to the student participants, understand what questions needed to be asked, appreciate the stories they had to tell, and bring meaning to the interpretation of the data. Understanding that the investigator's presence affected and influenced the research process was acknowledged and embraced (M. Lichtman, 2012). In addition, the values, beliefs, and assumptions from which this researcher operated were revealed and taken into consideration (Bhattacharya, 2017). Through self-disclosure, this researcher welcomed subjectivity and folded those suppositions into the interpretations and findings with authenticity. In this case, background experience became an advantage rather than an obstacle to this study.

**Data Analysis**

*Quantitative Phase*

**Descriptive Statistics.** The demographic data collected were analyzed using SPSS software. Tables were constructed displaying the means, standard deviations, and percentages from these data.

**Research Question 1.** Were there significant differences between story structure with the original and retell stories of Deaf fourth, fifth, and sixth graders whose primary

language was ASL? This was a within–subjects non-experimental design with one group (Deaf students) and two factors (original and retell stories). In this case, the independent variables were the original stories and the retells and the dependent variables were the NSS scores. Utilizing SPSS, a paired sample *t* test was performed to determine if there was a significant difference between the macrostructure found in the original stories and the retells of Deaf students. In addition, a linear multiple regression analysis was tasked to determine which variables, if any, had a significant effect on the NSS scores of the Deaf students.

**Research Question 2.** Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in original stories? This was a between–subjects non-experimental design with two groups (Deaf and hearing students) and one factor (original stories). In this case, the independent variables were the group of Deaf students and the group of hearing students and the dependent variables were the NSS scores. Utilizing SPSS, an independent-sample *t* test was performed to determine if there was a significant difference between the macrostructure found in the original stories of Deaf students and hearing students. In addition, a linear multiple regression analysis was tasked to determine if the NSS scores for the hearing students were predictive of the NSS scores for the Deaf students.

**Research Question 3.** Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in retells? This was a between–subjects non-experimental design with two groups (Deaf and

hearing students) and one factor (retells). In this case, the independent variables were the group of Deaf students and the group of hearing students and the dependent variables were the NSS scores. Utilizing SPSS, an independent-sample $t$ test was performed to determine if there was a significant difference between the macrostructure found in the retells of Deaf students and hearing students. In addition, a linear multiple regression analysis was tasked to determine if the NSS scores for the hearing students were predictive of the NSS scores for the Deaf students.

*Qualitative Phase*

The storytelling, both original and retell, as well as the open-ended questioning with the Deaf students had been video recorded with the use of two cameras with three microphones. Each student had four video clips, two for each story with the accompanying questioning. These clips were then imported into Final Cut Pro, where they were edited to eliminate extraneous footage unrelated to the study, such as long silences before and after each student. Once edited, the clips were assembled and exported as a single mp4 file. For the raters to view the footage, the video clips were moved to a USB drive and inserted into a projector to be viewed on a large screen. In this way, the researcher along with the two raters identified elements of the students' language that was specific to ASL or Deaf culture (Anderson et al., 2018). From this information, codes began to be tagged and categories mirroring the eight ASL classifiers emerged. To avoid introducing biases into the interpretation of the findings that may have come from either the hearing researcher or the Deaf community members, the "team" applied a collaborative approach to analyzing data (Anderson et al., 2018). In this way, power was shared among the researcher and the team in openly negotiating the meaning of the participants' responses. From this process, a qualitative code book was developed.

In the case(s) where disagreement emerged, discussions ensued with ultimate consideration given to the Deaf members of the team given their expertise in the language and the culture.

**Research Question 4.** How were the unique characteristics of ASL and Deaf culture reflected in the original and retell storytelling of the Deaf fourth, fifth, and sixth graders? Utilizing the collaborative approach, as described, the researcher along with two members of the Deaf community watched the video recording while marking any emergent categories. Exact "wording" was not possible to code unless there was group agreement that a specific sign was being used in a way that it projected a specific meaning, given the context. In the initial coding process, this body was looking for expected, surprising, or conceptually interesting information (Tilley, 2003). As the students told their original stories and reflected on their choices of story topics, characters, setting, plot, and conflict resolution, the team was mindful of emerging themes and categories. With comments related to the students' retells, the team was mindful of areas of emphasis, inclusions, as well as exclusions. It was important for this body to be familiar with the story in order to mark what was similar as well as where an individual student provided elaboration or omitted details.

Once the team (researcher and two members of the Deaf community) had completed the initial marking of codes from the video recording, the researcher began codifying the data, looking for patterns as well as explanations for those patterns (Saldaña, 2008). This analysis led to categorization and then to concepts and themes. Once a codebook had been established, the researcher met with the members of the

original team to review and validate the categories, themes, and interpretations that were formulized. Any discrepancies or misinterpretations were adjusted as needed.

### *Integrated Phase*

From the data collection and analysis processes, it was important to interpret the qualitative themes in terms of the findings from the NSS rubrics from both the Deaf and hearing fourth, fifth and sixth graders on their original stories and retells. The researcher needed to identify any inferences that could be gleaned.

**Research Question 5.** How did the quantitative comparative results and the qualitative findings converge to demonstrate the narrative literacy performance level of Deaf students when assessed in ASL? Through the triangulation of data that emerged from the quantitative phase, qualitative phase, and the integration of these two phases, it was expected that a convergence of evidence would be produced (Mathison, 1988). This evidence indicated the significance of assessing Deaf students, whose primary language was ASL, as second language learners. A discussion from this evidence led to emerging educational strategies as well as academic implications for Deaf students. In addition, implications for future research, the learning community, and the Deaf community became clear.

**Figure 1**

*Flow Chart of Convergent Mixed Methods Design*

**Title:** Narrative Language Development in Deaf Children as Assessed Through ASL: A Comparative Analysis Utilizing Retells and Original Stories

### Quantitative Purpose

To assess the narrative performances of Deaf and Hearing 4th, 5th, and 6th graders with original stories and retellings.

### Qualitative Purpose

To examine the unique characteristics of ASL, students' identities, and Deaf culture that emerge from Deaf students' original stories and retellings

#### Procedure

Select 7 Deaf and 7 Hearing 4th, 5th, and 6th graders who meet the outlined criteria
Video-record their original stories and retellings
Collect descriptive data on students
Raters will assess stories utilizing the NSS 5-point Rubric

Quantitative Data Collection

#### Outcome

11 students from a school for the deaf in the southeastern region of the U.S. participated
7 students from a convenience sampling from the U.S. participated.
36 stories were video recorded

#### Procedure

Video-record the Deaf students' reflections on their stories

Qualitative Data Collection

#### Outcome

11 Deaf students discussed their stories and provided additional information

Biodemographic data analyzed
NSS scores analyzed:
Comparing Deaf students' original stories and retellings
Comparing Deaf and Hearing students' original stories
Comparing Deaf and Hearing students' retellings

Quantitative Data Analysis

Used SPSS to calculate mean, SD, and Percentages
Paired sample *t* test performed
Independent-sample *t* tests performed
Multiple Linear Regression Analysis performed

Analyzed in their original form for coding patterns, themes, and categories

Qualitative Data Analysis

Marking indications of identity, Deaf culture, and characteristics of ASL

#### Procedure

Qualitative findings generated by the codebook were matched with the NSS findings found through the SPSS analyses.

Results of the comparison of NSS scores for Deaf and hearing students were presented
Interpretation of the Deaf students' scores along with qualitative inferences were presented

Merge Quantitative and Qualitative Results

#### Outcome

The mixed method findings were presented through a visual representation

This convergent design analysis compared the two sources of data to present a more complete analysis

Integrated Interpretation

Fetters (2020, p. 70)

**Reliability and Validity**

*Quantitative Validity*

The NSS brings together the benefits of concrete scoring criteria in the form of a rubric and the judgment of text level constructs. Through past studies (Heilmann et al., 2010), a strong relationship has been shown to exist between microstructural features of language samples and student performances on this assessment. Correlational and hierarchical regression analysis documented the links among productivity, vocabulary, grammar, and narrative macrostructure (Heilmann et al., 2010). In addition, age and microstructural measures were correlated with narrative organizational skills (Heilmann et al., 2010). By analyzing the results of the NSS, one can infer that the students with more experience with stories had greater narrative competence, vocabulary and grammar skills were most closely correlated to the macrostructure score, and the children's productive vocabulary was a predictor of narrative organizational skills (Heilmann et al., 2010). Given that the NSS has a strong relationship with linguistic measures, it is evident that it is an effective method for documenting children's language skills.

*Quantitative Reliability*

Once established that the NSS was an appropriate instrument for the current study, the use of two raters, skilled in the knowledge and the culture of the language for which they were scoring, provided the necessary interrater reliability that was critical. Through training and practice, these individuals possessed the expertise needed to assess the stories with much skill and limited bias.

*Qualitative Validity*

With regard to the qualitative aspect of this study, coding a participant's original utterances would be more likely to produce accurate results than coding a second- or

third-hand version of the message that had been translated by interpreters or transcriptionists, even when these individuals were quite skilled (Anderson et al., 2018). By utilizing the method of team coding and analysis, involving the researcher and Deaf community members, the certainty of the meaning behind the participants' statements was closest to the integrity of the communication. It certainly increased the veracity of their comments.

### *Qualitative Reliability*

Through the use of intercoder agreement, the reliability of the procedures and perspectives of collecting and coding the students' responses was insured. Members of the deaf community who were fluent in ASL served as the team that coded and identified categories and themes from the video recorded data. Although the hearing researcher was a member of this team, when disagreements arose, the Deaf members' interpretation took precedence. Once the assessment and the report had been written, these members of the Deaf community were given the opportunity to revise and make suggestions prior to the finalizing of the codebook.

## CHAPTER 4 RESULTS

The overarching goal of this study was to address the gap that exists in the literature regarding the language assessment of D/HH students. For decades, this population has been unfairly evaluated in their second language and, when compared with their hearing peers, unsurprisingly fell short (Dubé, 2000; Scott & Dostal, 2019; Wang et al., 2017). These results led to the labeling of these children as language deficient and to instructional strategies that have proved to be ineffective through the years (Marschark et al., 1994). However, this investigation demonstrated they were in fact on par with their language abilities with their hearing peers when it came to expressing themselves in ASL (Beal et al., 2020; Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Lucero, 2018; Marschark et al., 1994; Scott & Dostal, 2019). This study was intended to shine a light on this inequity and provide a path toward a more unbiased method.

This mixed method convergent study was designed to assess both the D/HH students and their hearing peers with the same instrument. By using the primary languages of both populations, ASL and English respectively, it was possible to compare the results. It was critical to keep the stories and comments of the D/HH students in their original form and not have them translated into English for assessment. In this way, the integrity of the evaluation remained intact. Additionally, it was essential that members of the Deaf community be involved in the rating and analysis process. This was crucial to the study and their contributions and insights were invaluable.

With the sample of D/HH students, 11 children participated in the study. Upon rating their stories and analyzing the surveys from the parents, four students were eliminated. Two students were eliminated because they were unable to construct original

stories. Even with prompting, both children provided little language and therefore a 0 rating was given for all categories for their original story. One student was eliminated because he did not meet the criteria in that he came from a family in which the primary home language was Spanish. Finally, one student was eliminated because she used mostly spoken English for her retell, rather than ASL. Although her story was well formed, the criterion was to analyze a student's ASL in this regard. Also, only one of the two Deaf raters was able to assess this story as little ASL was used. It is interesting to note that her original story was told in ASL and garnered her a NSS composite score of 29.5. With four students being eliminated, the sample of D/HH students was seven students, five girls and two boys. Only three of the students chosen for the study had families that completed the survey.

With the hearing students, seven students were assessed and all of them met criteria and therefore were included within this study. Of these seven children, five of were boys and two were girls. Six of the seven students had families that completed the survey.

**Descriptive Data**

Table 1 provides an overview of the sample populations included within this study for both the D/HH students as well as the hearing students. The ages reflect the students' age at the time of data collection.

**Table 1**

*Demographic Characteristics*

| Student ID | Gender | Age | Deaf/Hearing | Race |
|---|---|---|---|---|
| 001 | Boy | 10.7 | Deaf | White |
| 002 | Boy | 10.11 | Deaf | South Asian |
| 003 | Girl | 11.2 | Deaf | White |
| 004 | Girl | 11.9 | Deaf | White |
| 005 | Girl | 10.9 | Deaf | Black |
| 006 | Girl | 11.8 | Deaf | White |
| 007 | Girl | 11.11 | Deaf | Black |
| 010 | Boy | 11.10 | Hearing | White |
| 011 | Girl | 11.8 | Hearing | White |
| 012 | Girl | 9.10 | Hearing | White |
| 013 | Boy | 9.10 | Hearing | White |
| 014 | Boy | 10.4 | Hearing | White |
| 015 | Boy | 10.7 | Hearing | Biracial |
| 016 | Boy | 10.1 | Hearing | White |

*Note*. For the D/HH students, the age range was from 10.7 to 11.11 years with a mean age of 11.1 years. For the hearing students, the age range was from 9.10 to 11.8 years with a mean age of 10.3 years. Overall, the age range of the sample population was from 9.10 to 11.11 years with a mean of 10.7 years and a range of 2.8 years.

Ten parent surveys were returned from the 14 students who participated in the study. Of the 10 surveys, two were incomplete. The information gleaned from these surveys can be found in Table 2.

**Table 2**

*Biodemographic Characteristics With Frequencies*

| Characteristic | D/HH | | Hearing | | Full sample | |
|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % |
| Gender | | | | | | |
|   Male | 2 | 28.6% | 5 | 71.4% | 7 | 50.0% |
|   Female | 5 | 71.4% | 2 | 28.6% | 7 | 50.0% |
| Race | | | | | | |
|   White | 4 | 57.1% | 6 | 85.7% | 10 | 71.4% |
|   Black | 1 | 14.3% | | | 1 | 7.1% |
|   Asian | 2 | 28.6% | | | 2 | 14.3% |
|   Biracial | | | 1 | 14.3% | 1 | 7.1% |
| Family education level | | | | | | |
|   High school diploma | 1 | 14.3% | | | 1 | 7.1% |
|   Bachelor's degree | 1 | 14.3% | 2 | 28.6% | 3 | 21.4% |
|   Graduate degree | 1 | 14.3% | 3 | 42.9% | 4 | 28.6% |
|   Missing data | 4 | 57.1% | 2 | 28.6% | 6 | 42.9% |
| # of siblings | | | | | | |
|   Zero | | | 2 | 28.6% | 2 | 14.3% |
|   One | | | 4 | 57.1% | 4 | 28.6% |
|   Two | | | | | | |
|   Three | 1 | 14.3% | | | 1 | 7.1% |
|   Four | | | | | | |
|   Five | 2 | 28.6% | | | 2 | 14.3% |
|   Missing data | 4 | 57.1% | 1 | 14.3% | 5 | 35.7% |
| Birth position | | | | | | |
|   First | 1 | 14.3% | 4 | 57.1% | 5 | 35.7% |
|   Second | | | 2 | 28.6% | 2 | 14.3% |
|   Third | 1 | 14.3% | | | 1 | 7.1% |
|   Fourth | 1 | 14.3% | | | 1 | 7.1% |
|   Missing data | 4 | 57.1% | 1 | 14.3% | 5 | 35.7% |
| Amplification | | | | | | |
|   Hearing aids | 3 | 42.9% | | | | |
|   Cochlear implant(s) | | | | | | |
|   Missing data | 4 | 57.1% | | | | |
| Communication mode at home | | | | | | |
|   ASL | 1 | 14.3% | | | | |
|   PSE | 1 | 14.3% | | | | |

| Characteristic | D/HH | | Hearing | | Full sample | |
|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % |
| Speech | 1 | 14.3% | | | | |
| Missing data | 4 | 57.1% | | | | |
| Early intervention services | | | | | | |
| Yes | 3 | 42.9% | | | | |
| No | | | | | | |
| Missing data | 4 | 57.1% | | | | |

*Note*. Questions related to amplification, communication mode at home, and early intervention services were not included on the surveys for families of the hearing students. Therefore, there were no data to report in these areas for these students. Under the category of communication mode at home, PSE = Pidgin Signed English and SEE = Signing Exact English.

**Quantitative Phase**

*Research Question 1*

Were there significant differences between story structure with the original and retell stories of Deaf fourth, fifth, and sixth graders whose primary language was ASL? Before addressing this question, it was important to compile the scoring sheets from the two raters and perform a statistical analysis to determine interrater reliability. Using the Pearson correlation, a significant relationship between rater 1 and rater 2 was evident, $r = .948$, $p < .001$ (2-tailed).

Table 3 summarizes the average scores for both stories, from the two raters, for each participant within each category of the NSS.

**Table 3**

*Summary of the NSS Scores for Each Deaf/HH Student*

| | NSS categories | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Student | Introduction | | Character development | | Mental states | | Referencing | | Conflict resolution | | Cohesion | | Conclusion | | Composite score | |
| | OS | RT | OS | RT | OS | RT | OS | RT | OS | RT | OS | RT | OS | RT | OS | RT |
| 001 | 3.5 | 2.5 | 1.0 | 2.0 | 1.5 | 3.0 | 3.0 | 3.5 | 1.0 | 1.5 | 2.5 | 2.5 | 2.5 | 2.0 | 15.0 | 17.0 |
| 002 | 1.5 | 4.5 | 3.5 | 5.0 | 3.0 | 4.5 | 3.0 | 5.0 | 2.0 | 5.0 | 1.5 | 4.5 | 2.0 | 5.0 | 16.5 | 33.5 |
| 003 | 3.5 | 5.0 | 3.0 | 4.5 | 1.0 | 4.5 | 2.5 | 5.0 | 1.0 | 4.5 | 3.0 | 5.0 | 4.5 | 5.0 | 18.5 | 33.0 |
| 004 | 3.5 | 3.5 | 2.5 | 3.0 | 2.5 | 2.0 | 1.0 | 2.0 | 3.1 | 1.0 | 2.1 | 1.0 | 3.5 | 1.5 | 18.0 | 14.0 |
| 005 | 4.5 | 4.5 | 4.0 | 4.5 | 5.0 | 5.0 | 4.5 | 4.5 | 4.5 | 4.5 | 5.0 | 4.5 | 5.0 | 4.5 | 32.5 | 32.0 |
| 006 | 4.5 | 5.0 | 4.5 | 5.0 | 3.0 | 4.5 | 3.5 | 5.0 | 1.0 | 5.0 | 3.5 | 5.0 | 3.0 | 5.0 | 23.0 | 34.5 |
| 007 | 5.0 | 3.5 | 5.0 | 2.5 | 5.0 | 2.5 | 5.0 | 2.5 | 5.0 | 2.0 | 5.0 | 2.0 | 4.5 | 2.5 | 34.5 | 17.5 |

*Note*. OS = original story. RT = retell.

To answer the first research question which was a within-group analysis, a paired sample *t* test was performed using SPSS. A two-tailed pairs samples *t* test was conducted for the Deaf students' NSS scores on their original stories ($M = 22.71$, $SD = 7.76$) and the Deaf students' NSS scores on their retell stories ($M = 25.86$, $SD$ 9.30) conditions; $t(6) = .697$, $p = .512$. These results suggested the Deaf students scored similarly for both their original and retell stories. With the critical value being 2.447 which was larger than the *t* value, the 95% confidence level crossing the 0 (lower = –7.9, upper = 14.2), and with the *p* value at .512, which is larger than .05, the null hypothesis held true. There were no significant differences found between the original stories and the retells of Deaf fourth, fifth, and sixth graders whose primary language was ASL.

Although no significant differences were found for this sample, when examining each student individually some interesting results were of note. In three cases, the scores between the original stories and the retells were extremely close. For one student, who

scored extremely high, the scores were almost identical. In two cases, the retell scores were significantly higher than the original stories whereas in one case, the original story score was significantly higher than the retell. Finally, in one case where the retell score was extremely high, the original score was still quite strong.

In exploring each student, student 001 scored slightly higher in his retell than in his original story, although he scored higher in some categories for his original story than his retell. His areas of weakness included character development, mental states (for original story), and conflict resolution. Student 002 scored significantly higher for his retell than his original story. His areas of weakness, in his original story, were in cohesion, conclusion, and conflict resolution. Student 003 also scored significantly higher in her retell than in her original story. Her areas of weakness, in her original story, were in mental states, referencing, and conflict resolution. Student 004 scored similarly, although slightly higher in her original story than her retell. Her areas of weakness were in referencing for both and conflict resolution and conclusion for her retell. Student 005 scored almost identically for both her original story and her retell. She had almost perfect scores with ratings of 4, 4.5, and 5 out of a possible 5 points for each category. Student 006 scored higher in her retell although she had a respectable score for her original story. Her area of weakness for her original story was in conflict resolution. Finally, student 007 scored significantly higher in her original story (almost a perfect score) than her retell. Her areas of weakness for her retell were conflict resolution and cohesion.

In addition to the paired sample *t* test, a multiple regression analysis was performed utilizing both the NSS scoring sheet as well as the completed family surveys. For the NSS score, an average score, calculated by finding the mean score from both the

original story and the retell, was used for each student. This score was the dependent variable. The independent variables used were years the child was in school, family income, race of child, highest level of schooling by parents, number of siblings, birth order of the student, age of diagnosis, communication system used at home, and whether the child received early intervention services. As previously reported, only three of the seven students included in the study returned the survey. With this in mind, not only were some statistics not able to be calculated, but the results need to be studied with care. However, the one independent variable that was shown to be predictable of a NSS score was the age of diagnosis.

### Research Question 2

Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in original stories? Before addressing this question, it was important to compile the scoring sheets from the two raters and perform a statistical analysis to determine the interrater reliability. Using the Pearson correlation, a significant relationship between rater 1 and rater 2 was evident, $r = .647$, $p < .05$ (2-tailed).

Table 4 summarizes the average NSS scores, from the raters, for the original stories from both the D/HH students as well as the hearing students.

**Table 4**

*NSS Composite Scores for Original Stories of D/HH and Hearing Students*

| D/HH ID # | NSS Composite Score (D/HH) | Hearing ID # | NSS Composite Score (Hearing) |
|---|---|---|---|
| 001 | 15.0 | 010 | 25.0 |

| 002 | 16.5 | 011 | 33.0 |
|---|---|---|---|
| 003 | 18.5 | 012 | 32.5 |
| 004 | 18.0 | 013 | 29.0 |
| 005 | 32.5 | 014 | 15.5 |
| 006 | 23.0 | 015 | 31.5 |
| 007 | 34.5 | 016 | 26.5 |

To answer this research question which was a between-group analysis, an independent sample $t$ test was performed using SPSS. A two-tailed independent sample $t$ test was conducted to compare the NSS scores of the D/HH students for their original stories ($M = 22.57$, $SD = 7.88$) and the NSS scores of the hearing students for their original stories ($M = 27.57$, $SD = 6.12$) conditions; $t(12) = -1.326$, $p = .210$. These results suggested that the D/HH students scored similarly on the NSS with their hearing peers for their original stories. With the critical value being 2.179 which was larger than the $t$ value, the 95% confidence level crossing the 0 (lower $= -13.22$, upper $= 3.22$), and with the $p$ value at .210, which is larger than .05, the null hypothesis held true. There were no significant differences found between the original stories of the D/HH fourth, fifth, and sixth graders, whose primary language was ASL, and their hearing peers.

Although no significant differences were found, there were still some interesting statistics of note. The lowest score given to one of the D/HH participants was a 15 which was similar to the lowest score given to a hearing participant which was 15.5. In this same vein, the highest score given to a D/HH participant was a 34.5 and the highest score given to a hearing participant was a 33. The median score for the D/HH sample was 18.5

and 29.0 for the hearing sample. Whereas the range was 19.5 and 17.5 for the D/HH and the hearing students, respectively.

In addition to the two-tailed independent sample $t$ test, a multiple regression analysis was performed utilizing both the NSS scoring sheets as well as the completed family surveys for both populations. The NSS score for the original stories was used for each student. This score was the dependent variable. The independent variables used were years the child was in school, family income, race of child, highest level of schooling by parents, number of siblings, and birth order of the student. Because the variables of age of diagnosis, communication system used at home, and whether the child received early intervention services were only asked of the Deaf students, these were not included. As previously reported, only three of the seven Deaf students included in the study completed the survey, whereas six out of the seven hearing students returned the survey. There was some missing information from the surveys with both groups. The statistical power of the study was too low to produce either a $p$ or an $F$ value. However, at the 95% confidence intervals, the predictors were indicated as hearing status (Deaf or hearing), birth position, age, and income. The unstandardized B values and lower and upper bounds of CI were 2.0 for age, .23 for income, –13.03 for birth position, and –.833 for hearing status. Therefore, student scores increased with age and decreased for higher birth position. In terms of income, there appeared to be little effect of this category on the score. Similarly, whether a student was Deaf or hearing had little effect on the NSS score, which was congruent with the previous findings of no significant difference found with original stories with these two groups. However, due to the low sample numbers, these values were too low to be considered significant.

*Research Question 3*

       Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in retells? Table 5 summarizes the average NSS scores, from the raters, for the retell stories from both the D/HH students as well as the hearing students.

**Table 5**

*NSS Composite Scores for Retell Stories of D/HH and Hearing Students*

| D/HH ID # | NSS Composite Score (D/HH) | Hearing ID # | NSS Composite Score (Hearing) |
|-----------|---------------------------|--------------|-------------------------------|
| 001 | 17.0 | 010 | 19.5 |
| 002 | 33.5 | 011 | 29.5 |
| 003 | 33.0 | 012 | 31.5 |
| 004 | 14.0 | 013 | 29.5 |
| 005 | 32.0 | 014 | 32.5 |
| 006 | 34.5 | 015 | 31.0 |
| 007 | 17.5 | 016 | 31.5 |

To answer this research question which was a between-group analysis, an independent sample $t$ test was performed using SPSS. A two-tailed independent sample $t$ test was conducted to compare the NSS scores of the D/HH students for their retell stories ($M = 25.93$, $SD = 9.23$) and the NSS scores of the hearing students for their retell stories ($M = 29.28$, $SD = 4.45$) conditions; $t(12) = -.867$, $p = .403$. These results suggested the D/HH students scored similarly on the NSS with their hearing peers for their retell stories. With the critical value being 2.179 which was larger than the $t$ value, the 95% confidence level crossing the 0 (lower $= -1.52$, upper $= .61$), and with the $p$ value at .403, which is larger than .05, the null hypothesis held true. There were no significant differences found between the retell stories of the D/HH fourth, fifth, and sixth graders, whose primary language was ASL, and their hearing peers.

Although no significant differences were found, there were still some interesting statistics of note. For the D/HH sample, the NSS composite scores clustered in two

groups. One group (three students) had an average score of 16.5 and the other (four

students) had an average of 33.1. Whereas for the hearing sample, one score of 19.5 was

an outlier and all of the other composite scores (six students) were clustered together with

an average score of 30.9. The three highest scores rated for retells were by the Deaf

students with composite scores of 33, 33.5, and 34.5.

In addition to the two-tailed independent sample *t* test, a multiple linear regression

analysis was performed utilizing both the NSS scoring sheets as well as the completed

family surveys for both populations. The NSS score for the retell stories was used for

each student. This score was the dependent variable. The independent variables used

were years the child was in school, family income, race of child, highest level of

schooling by parents, number of siblings, birth order of the student, and whether the

student was Deaf or hearing. Because the variables of age of diagnosis, communication

system used at home, and whether the child received early intervention services were

only asked of the Deaf students, these were not included. As previously reported, only

three out of the seven Deaf students included in the study completed the survey, whereas

six out of the seven hearing students returned the survey. There was some missing

information from the surveys with both groups. The statistical power of the study was too

low to produce either a *p* or an *F* value. However, at the 95% confidence intervals, the

predictors were indicated as hearing status (Deaf or hearing), birth position, age, and

income. The unstandardized B values and lower and upper bounds of CI were

−.23 for age, −.47 for income, 1.59 for birth position, and −.578 for hearing status.

Therefore, it appeared that age and family income had little effect on the NSS score while

higher birth position accounted for higher scores. Being hearing or Deaf had little effect

on the score which was congruent with the findings that there were no significant differences between the two samples with recall stories. However, due to the low sample numbers, these values were too low to be considered significant.

**Qualitative Phase**

*Research Question 4*

How were the unique characteristics of ASL and Deaf culture reflected in the original and retell storytelling of the Deaf fourth, fifth, and sixth graders? This phase of the study and thereby this research question proved to be the most challenging, as was expected. Because it was critical that the students' original language not be translated and understanding that ASL does not have a written component, it was a formidable task. Both the raters and this researcher, needed to mark or comment on the areas of the children's language that addressed this question in a way that preserved the integrity of their message.

The two raters met with the researcher at a local library that had a private meeting room. As they rated the stories, both original and retells, they also freely wrote comments regarding the students' use of language, body movements, gestures, and any elements that were specific to ASL. In addition, as they watched the interviews with the children, they took notes on any aspects that furthered the understanding of the stories or reflected any characteristics of Deaf culture. These comments had to be written in English, although the raters expressed their notes with descriptive examples taken from the students' original language.

Because we were not dealing with traditional codes, as typically garnered from this type of research, at first the comments appeared disjointed and thereby uncategorizable by theme or topic. They included notes such as "used contrastive

structure," "used thinking sign," "used 'finish' as a transition sign," and "body movement imitated the illustrations." However, upon further exploration, it became clear that the raters' comments reflected the eight classifier categories as described in ASL research as well as ASL curricula (Pizzo, 2018; Project Climb, 2021). These categories are defined with examples in Table 6.

**Table 6**

*ASL Classifiers*

| Classifiers | Explanations | Examples |
|---|---|---|
| Semantic classifiers | Functions as a pronoun or a combination of a noun and a verb | Cl – 1 (person) Grandfather and boy |
| Descriptive classifiers | Describes shapes, sizes, and textures | "soft hair of the tiger" |
| Instrument classifier | Describes how an object is handled | "ringing a doorbell" |
| Element classifier | Describes the movement of fire, water, and air | "imitates the air as it whirls around the wizard and the warrior" |
| Locative classifier | Indicates the position of something, its position relative to something else, or the movement of that object | "the location of my house relative to my friend's house" |
| Body classifier | Indicates the upper part of the body | "the bear bit the man on the arm" |
| Body Part classifier | Reference to a part of the body beyond the typical signing area | "his feet were tired" |
| Plural classifier | Indicating many of a particular noun | "there were six of us" |

*Note*. These classifiers were taken from Project Climb.

To further clarify these critical classifiers, see Figure 2 for illustrations in ASL.

**Figure 2**

*ASL Classifiers With Example Images*
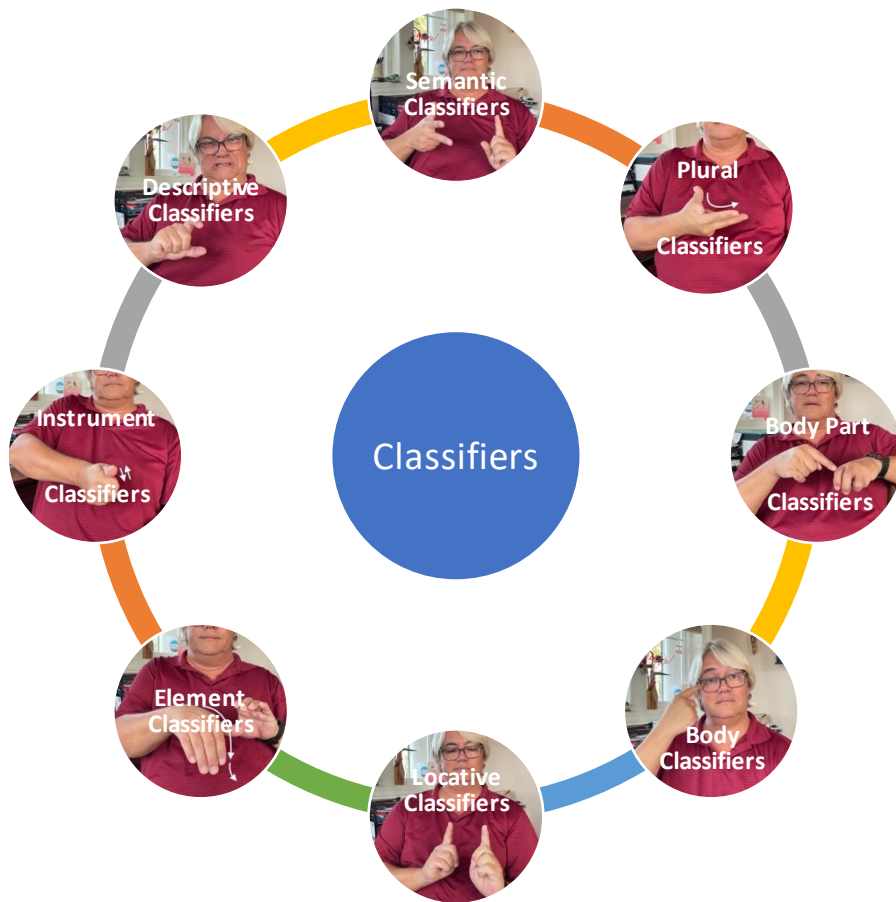


*Note*. Because ASL is a language of movement, the images in this figure symbolize a snapshot in time.

Classifiers are essential to ASL yet complicated. There may be more than six morphemes incorporated into each classifier containing expressions that may or may not exist in English (Beal-Alvarez & Easterbrooks, 2013; Brozdowski et al., 2019). Acknowledging this validates the difficulty translating ASL to English as well as the need for an individual fluent in ASL to be the evaluator of an individual's ASL abilities (Beal et al., 2020; Evans, 2004; Gee & Kegl, 1983). Of course, the frequency with which each classifier was used by the students in this study was directly dependent upon their

original stories, the way in which they chose to interpret the retell, and their ASL

expertise. Each classifier, examples from the children's language, and the frequency

relative to the other classifiers is summarized in Table 7.

**Table 7**

*Classifiers With Frequencies*

| Classifiers | ASL use | Frequency |
|---|---|---|
| Semantic classifiers | Grandfather | Consistently |
| | Boy | |
| | Sitting at the table | |
| | Sitting on the couch | |
| | Crossing the bridge | |
| | Driving away | |
| | "facial expressions" | |
| | "positioning of characters" | |
| | "moving as the object" | |
| Descriptive classifiers | Soft hair | Rarely |
| | Big dogs | |
| | "size of adventure" | |
| Instrument classifiers | "pushing a doorbell" | Sometimes |
| | "eating with a fork" | |
| | "using a baseball bat" | |
| | "opening a book" | |
| Element classifiers | "dragon moving in the water" | Rarely |
| | "movement of air" | |
| Locative classifier | "house and friend's house" | Often |
| | "grandfather and boy separated" | |
| | "grandfather waving goodbye as the boy leaves" | |
| | "spatial positioning" | |
| | "showing position of wizard and warrior" | |
| | "moves in chair to indicate movement or who is talking" | |
| Body classifiers | Hugging | Often |
| | Bear bit the man | |
| Body part classifiers | (No evidence) | Never |
| Plural classifiers | Six of us | Rarely |
| | Many colors | |
| | Spots on the leopard | |

*Note.* In the ASL Use column, the words not in quotes indicate a rough translation from ASL to

English whereas the words in quotes indicate ASL usage that cannot be translated into English

but contains contextual meaning.

In addition to the elements of ASL that were identified and placed within one of the eight classifier categories, there were other aspects of the language and Deaf culture that were recognized. The following is a list of these distinctive characteristics along with their contextual meanings.

- Facial Expressions: In ASL, facial expressions contain grammatical markers that provide meaning beyond simply conveying emotion. In addition to the typical emotions (sadness, boredom, happiness), character identification as well as whether one is asking a question or making a statement is expressed through this means. Facial expressions can also affect the meaning of the sign, whether it is positive or negative and the intensity of the action.

- Size of Signing Space: With storytelling, the students often signed larger than they would typically in a conversation. This would indicate signing to a larger audience, providing clarity, or conveying emphasis.

- Head Tilt or Finger movement: These two areas indicate one is thinking. Whereas a hearing child might verbalize "umm," a Deaf child might tilt their head or move their fingers in a manner that suggests they are thinking of what next to express.

- Contrastive Structure: This grammatical element compares or contrasts two ideas, things, or people. The person signing would shift one way to provide information about the first person and then shift the other way to provide the alternative explanation.

- Body Imitating Action: Often, the student will use their whole body to indicate movement, along with the sign, to emphasize the enormity or intensity of that movement.

- Using "Finished" for transitions: The sign for "finish" has multiple meanings in ASL. In the case of this study, this sign was used as a transition word or a conjunction to link one action with the next action. Some students used it sporadically between the pages of the book *Drawn Together* whereas one student used it consistently between each page.

These eight classifier categories as well as the listed elements found exclusively in ASL were revisited by the two raters as they reviewed the coded material and rewatched the students' stories. As with all languages, ASL is an integral part of Deaf culture in a way that cannot be separated and can only be understood in the context of the complete triad (language, thought, and culture; Evans, 2004; Reagan, 2011).

**Mixed Methods Phase**

*Research Question 5*

How did the quantitative comparative results and the qualitative findings converge to demonstrate the narrative literacy performance level of Deaf students when assessed in ASL? With the categorization of the Deaf students' language samples within the eight classifier groupings along with the aforementioned aspects that depict Deaf culture, this question focused on the link between the frequency of these elements with the composite scores on the NSS. Although this may seem like a quantifiable question, it was qualitative in that there were no target numbers for the frequency of these elements given that samples came from non-scripted material. However, the raters were able to qualitatively estimate the recurrences of these aspects to determine whether there was a

correlation between higher composite scores and frequency of these identified elements.

Table 8 depicts these factors.

**Table 8**

*Comparing Deaf Students' Composite Scores With Frequency of ASL Elements*

| Student ID | Average Composite Score: OS | Frequency | Average Composite Score: RT | Frequency |
|------------|------------------------------|-----------|------------------------------|-----------|
| 001 | 15 | Rarely | 17 | Sometimes |
| 002 | 18 | Sometimes | 33.5 | Consistently |
| 003 | 18.5 | Sometimes | 33 | Consistently |
| 004 | 18 | Rarely | 14 | Rarely |
| 005 | 32.5 | Consistently | 32 | Consistently |
| 006 | 23 | Often | 34.5 | Consistently |
| 007 | 34.5 | Consistently | 17.5 | Sometimes |

*Note*. This table was constructed at a later session with the raters after reviewing all elements as well as the frequency with which they appeared in the stories. OS = original stories and RT = retells.

Without knowing the actual NSS scores, the two raters rewatched each video recorded story and rated it on the given frequency scale of never, rarely, sometimes, often, or consistently. The directions given were to view each story, both original and retell, and rate it on the frequency in which the student utilized the eight classifiers as well as the other identified elements of ASL communication. In analyzing Table 8, it was evident that the more elements of ASL that were included in a child's story, the higher the NSS score. Therefore, the stronger the students were in ASL, the firmer grasp they had with story structure.

# CHAPTER 5 DISCUSSION AND CONCLUSIONS

Storytelling has a long history that spans all cultures and languages. It is an interactive art form that requires the storyteller to convey images and information while provoking the "listeners" to invoke their imagination and experiences. Telling stories requires the use of language that is more complex than that needed for typical conversation (Lockett & Jones, 2009). As such, it has been found to be an accurate predictor of language ability, academic performance, and academic achievement (Dubé, 2000; Heilmann et al., 2010; Tarwacka-Odolczyk et al., 2014).

Utilizing storytelling in the classroom and for assessment purposes has been shown to have numerous benefits. Some of the positive outcomes include language development, retention of knowledge, and increased attention span (Lockett & Jones, 2009). In addition, students have shown improvements in cognitive skills, enhanced "oral" skills, and expansion of vocabulary (Lockett & Jones, 2009; Lucero, 2018; Miller et al., 2018). With the significant benefits of storytelling, including the development of "oral" and written language as well as the acquisition of facts and the bridging of cultural gaps, it is no wonder that the Common Core State Standards Initiative included two standards per grade level focused on this area (Common Core State Standards Initiative, n.d.; Khan et al., 2016; Lockett & Jones, 2009).

Storytelling is a natural environment for language sampling (Dubé, 2000; Heilmann et al., 2010; Tarwacka-Odolczyk et al., 2014). As students engage in retellings or creating stories, they are depicting characters, setting, and plot; conveying information; using vocabulary; demonstrating their use of grammar; showing their organizational skills, language fluency, semantic and processing skills, and use of inferences; as well as building their social skills (Bellinger & DiPerna, 2011; Dubé, 2000; M. L. Hall et al.,

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2019; Lockett & Jones, 2009; Scott & Dostal, 2019). Storytelling mirrors the whole child in a way that few language experiences can equal, and, through this opportunity, they can integrate prior experiences, their culture, thought processes, and values (Dubé, 2000; Lockett & Jones, 2009).

**Findings and Implications**

*Research Question 1*

Were there significant differences between story structure with the original and retell stories of Deaf fourth, fifth, and sixth graders whose primary language was ASL? Statistically, there were no differences among the D/HH participants between the NSS composite scores for original stories and retells. However, when analyzing each individual student and their scores, an interesting picture did emerge. Out of the seven children, three scored higher for original stories whereas four scored higher for retells. Out of the three, only one scored significantly higher in this area. One of these participants scored almost an identical score to the retell and the other student scored only slightly higher than the retell. Out of the four students that scored higher for their retells, two scored significantly higher, one scored slightly higher, and one scored more than 10 points higher. Out of the seven participants, three students scored almost a perfect score for their retells (33.5/35, 33/35, and 34.5/35) and two students scored almost a perfect score for their original stories (32.5/35 and 34.5/35). One student came close to a perfect score for both of her stories (32.5/35 and 32/35).

Although the multiple linear regression analysis was unable to produce results that were significant due to low numbers, age of diagnosis did emerge as the independent variable that predicted the strength of the NSS score. This result mirrors the research that showed the earlier children are diagnosed and then exposed to language, both oral and

ASL, the stronger their language skills (Beal et al., 2020; Mounty et al., 2014; Priestley et al., 2018; Wang et al., 2017; Wilkinson & Wilkinson, 2020).

For Research Question 1, the null hypothesis held true. In looking to explain these results, one need only to look at the two theories upon which this study was based. Emancipatory/critical disability theory speaks to the unfair power inequities that exist in the research methodologies of many inquiries as well as education itself (Connor et al., 2008; Mertens et al., 1994). On the other hand, second language acquisition theory (Cummins, 1984) speaks to the recognition and acknowledgement of ASL as a language and thereby maintaining its integrity by analyzing student work in its original form, follows the tenants of this theory. By having students create their original stories without prompts, evaluating their language in its original form, presenting a story in their primary language (ASL), and having their stories assessed by Deaf educated adults fluent in ASL, the results of this study were in uncharted territory. All these students came from a school for the deaf where they are surrounded all day with individuals, both professional and peers, who use their language. They have the opportunity to participate in all conversations, ask questions, and involve themselves in discussions, debates, and leadership experiences. These activities directly impact their ability to develop and expand their language, which would account for their strengths in relating original stories as well as retells (Lane, 2002). Any weaknesses that were noted were probably due to a lack of background knowledge and experiences with books and stories. Being that the students were the only Deaf individuals in their families, most of their practical exposure to books and having someone read with them occurs at school. Although this is more than

typical mainstream students receive, it does not replace the hours of meaningful interactions that can take place in the home (Gibbons, 2015; Luckner & Muir, 2001).

***Research Question 2***

Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in original stories? Statistically there were no differences between the D/HH students and their hearing peers in the area of original stories. However, in looking at the data some interesting patterns did emerge. For the D/HH students, the NSS composite scores were mostly clustered in two groups. The first group had an average score of 17 while the other group had an average score of 33.5. One score of 23 stood out as a strong scored that did not quite fit in either group. For the hearing students, one NSS score was an outlier at 15.5 while the other six scores were clustered together with an average score of 29.5. Although the highest rated score was earned by a Deaf student, as a whole the scores of the D/HH students presented with a larger range than that of the hearing students.

With regard to the multiple linear regression analysis, although the results were insignificant due to the low numbers, two independent variables did emerge as predictors of NSS scores. These variables were age and birth position. As per the results, the older the student as well as the lower the birth position, the higher the NSS score. Although the students in the study were matched in age, there was still a range from the youngest student of 9.10 to the oldest student being 11.11. For the overall study, the age range was 2.8 years which had an impact on the composite scores. As for birth position, those students who were only children or were born first or second scored higher NSS scores than those who were later in the birth order of their respective families. The implication

was that the higher birth position meant more children in the family and therefore the possibility of less time given for reading and other language experiences (Downey, 2001; Jæger, 2009; Workman, 2017).

For this research question, the null hypothesis held true. In this study, the students were given no picture prompts to assist them with their original stories. All students, both D/HH and hearing, were given the same "oral" prompts in terms of suggestions for topics from which they could create a story. The results were reflective of the students' abilities in language and were commensurate with their prior experiences and educational opportunities (M. L. Hall et al., 2019; Lane, 2002). It indicated that when students were given equal access to language input their output was analogous, thereby supportive of the emancipatory/critical disability theory (Connor et al., 2008; Mertens et al., 1994).

### Research Question 3

Was there a significant difference between Deaf fourth, fifth, and sixth graders, whose primary language was ASL, and typical hearing fourth, fifth, and sixth graders, whose primary language was English, with story structure in retells? Statistically there were no differences between the D/HH students and their hearing peers in the area of retell stories. The patterns that emerged when analyzing the individual scores indicated that the differences in ranges were more indicative of the language differences among the participants. The NSS composite scores of the hearing students ranged from a low of 19.5 to a high of 32.5, with a range of 13.0. Whereas the NSS composite scores of the D/HH students ranged from a low of 14.0 to a high of 34.5, with a range of 20.5. This difference in range was reflective of the differences in the D/HH population that do not exist with the hearing students; with factors such as: age of diagnosis, type of amplification, communication used at home, number of years exposed to ASL, and whether a child

received early intervention services. Although all of the D/HH students produced strong scores which were comparable to their hearing peers, the range of scores is indicative of the variances that exist within the Deaf population (Lane, 2002).

With regard to the multiple linear regression analysis, the numbers were again too low to produce any significant results. However, the one independent variable that showed any indication of being a predictor of scores was birth position. As with original stories, retells seemed to be influenced by the same variable. This came as no surprise in that with more children in the family and the later birth order, less time would be available for experience with books and the language structure that is gleaned from these experiences (Downey, 2001; Jæger, 2009; Workman, 2017).

For this research question, the null hypothesis again held true. For this study, a mostly wordless picture book was chosen for the retell portion rather than a series of pictures or a storybook. The book was chosen because of its theme of communication as well as for its illustrations. By telling the story through pictures, the students had the freedom to retell the story in a way that was unique to themselves. Although the story structure was defined, the use of language was open-ended. In this way, it lent itself to being told equally in ASL as English and allowed both group of students to retell the story utilizing their respective languages to the fullest. This served to equalize the power inequities that often exist in testing situations (Connor et al., 2008; Procknow et al., 2017; Shakespeare, 2014).

### Research Question 4

How were the unique characteristics of ASL and Deaf culture reflected in the original and retell storytelling of the Deaf fourth, fifth, and sixth graders? Keeping all of the D/HH students' stories in their original ASL was the first step in ensuring the

accuracy and the integrity of the results. Second, it was critical that the assessments were performed by well-educated Deaf adults who were fluent in ASL to mark areas of language and culture that might be overlooked by less proficient assessors. Third, it was significant that these members of the Deaf community agreed with the theming and coding of the elements found in the ASL stories with the eight classifier categories. Finally, it was with the assistance of these Deaf adults that examples for the classifier categories were determined and frequencies for each were determined.

Because the original stories were open-ended in that no visual prompts were given and the students created stories spontaneously, frequency, with respect to the use of classifier categories, could not be predetermined. For the book used in the retell, although the use of most of these classifiers had the possibility of being included, depending upon how the students chose to tell the story and what they decided to emphasize, it was not possible to determine a number or frequency for classifier use. The one classifier category that was not used was Body Part. This was because no student included a reference to any body part below the torso.

Considering the complex use of the classifier categories as well as the other identified elements of ASL that were present in the students' language, it was clear that these participants had a strong command of their language and the intricacies that it contained. The raters noted their use of space and foreground that they used to describe the action within the story as well as their use of body movements and facial expressions needed to express intensity, emotions, and emphasis (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Evans, 2004). In addition, the raters noted elements of Deaf culture such as size of signs and eye gaze that were used by the students

appropriately to promote importance, danger, strength, or attention (Galvan, 1999; McQuarrie & Abbott, 2013). Denoting these elements as part of the assessment process were unique to this study.

### *Research Question 5*

How did the quantitative comparative results and the qualitative findings converge to demonstrate the narrative literacy performance level of Deaf students when assessed in ASL? The summary of the findings for this complex question was that the more frequently the D/HH students incorporated the eight ASL classifier categories as well as the other identified aspects of ASL into their stories, the higher their NSS scores. Therefore, the stronger their ASL skills meant the stronger their skills in story structure. Taking these findings and associating them with the null hypotheses that demonstrated, with significance, that the D/HH students performed similarly to their hearing peers, strongly suggests that the importance of providing all children with a solid language foundation is paramount.

It was critical to the integrity of this study to involve members of the Deaf community in the rating of the elements of ASL found in the students' stories. Without knowing the NSS scores, the raters discovered that the consistent use of these elements was found in the six stories that scored between 32 and 34.5. A rating of often was given to one story that had scored a 23. Four stories that scored between 17 and 18.5 were given a rating of sometimes whereas three stories that had scored between 14 and 18 were given the rating of rarely. These matched ratings between the frequent use of ASL elements and the NSS score provided a powerful statement toward the advocacy of establishing a strong first language to allow for second language learning. This message aligned with second language acquisition theory (Cummins, 1984) and the methodology

in which this assessment was conducted aligned with the emancipatory/critical disability theory (Barnes, 2003; Connor et al., 2008; Mertens et al., 1994).

The overarching goal of this study was to compare the story structure for original and retell stories of the D/HH and hearing population. Conducting this study in a unique yet equitable manner allowed this researcher to collect and analyze data that considered the primary languages of its participants. This investigation recognized the verifiability of ASL, acknowledgment that ASL is the primary language of Deaf individuals, the importance of including members of the Deaf community in the analysis of their language, the significance of collecting and analyzing ASL samples in their original form, and exploring the aspects of ASL that most aligned with story structure. Knowing that the demonstration of story structure within a students' creative and retell stories was an indication of reading comprehension, made a strong case for using this a measure for this study (Gee & Kegl, 1983; C. Hall et al., 2021; Heilmann et al., 2010; Khan et al., 2016; Lucero, 2018). It had also been previously shown that the inclusion of the eight classifier categories in ASL stories was a signifier of strong story structure (Beal et al., 2020; Beal-Alvarez & Easterbrooks, 2013; Evans, 2004; McQuarrie & Abbott, 2013). This mixed method convergence design study combined these factors and was able to show that the D/HH students not only scored similarly for both their original and retell stories as did their hearing peers but that the stronger their ASL, the stronger their story structure. These findings pave the way for building on a student's ASL foundation to build that bridge toward English and improved reading skills.

**Relationship to Prior Research**

Discovering studies that researched an equitable comparison between the primary languages of Deaf and hearing participants were difficult to find. The majority of

inquiries in this area studied only one population, studied only one language, or constructed a research design that took a medical model perspective of deafness rather than an educational/social perspective. However, these studies did serve as a precursor to the current investigation.

Dubé (2000) and Marschark et al. (1994) both studied the story structure of original stories. Understanding the strong link between story structure and reading comprehension, Dubé (2000) was looking to create a new assessment tool that could be used with the Deaf in measuring this area. Marschark et al. (1994) compared the story structure of both D/HH and hearing students and found that the results were comparable except for the written component, which was stronger for the hearing group. In both studies, the original stories were prompted and the ASL stories were translated into English before assessment. In the current study, story structure was also researched and compared with both D/HH and hearing participants. However, the researcher did not provide a structured prompt for the students and, most importantly, did not translate the students' original ASL into English. All assessments were conducted from the video recordings of the children's primary language.

Bellinger and DiPerna (2011) studied retells with the hearing population. The importance of their research was in demonstrating the significance of recording the data verses assessing the children's stories live. Certainly, video recording the stories in this study not only allowed members of the Deaf community to participate in the assessment process but provided the opportunity for stories to be revisited and to be reevaluated in terms of the qualitative aspects of the research.

Although the research by Galvan (1999) involved the translation of Deaf retell stories into English, his investigation did demonstrate the importance of early exposure to ASL. In much the same way, the study by Wang et al. (2017) showed that when D/HH students were presented with a story, in both ASL and SIMCOM, the students' recall was stronger with ASL. This served to validate ASL as a language and SIMCOM as a method. In the current study, the book, *Drawn Together*, was communicated in ASL.

The studies by both Beal-Alvarez and Easterbrooks (2013) and Beal-Alvarez and Sheetz (2015) both studied the D/HH population with regard to retells. However, in the first case, although the stories were video recorded and transcribed into English, the researchers were investigating ASL classifier production. In the second study, the investigators video recorded the stories but did not translate them. They were looking to assess the ASL ability of the children. It is these ASL classifier categories and the known link between them and reading comprehension, that led to its use in the qualitative aspects of the convergent mixed methods design.

The studies by Heilmann et al. (2010), Khan et al. (2016), Lucero (2018), and Miller et al. (2018) all researched the retells in hearing children using the NSS. In all cases, they found this tool to be informative in documenting the development of narrative macrostructure in children. They uncovered a developmental pattern for story structure and found, that with intervention, results improved. It was this validation, as well as the versatility of the instrument, that led the researcher to choose it for this study.

A most recent study by Walker et al. (2023) compared the original stories and retells of both D/HH and hearing children utilizing the NSS. In this case, the D/HH students were oral and therefore all stories were captured in English. The stories were all

transcribed and then assessed from these transcriptions. Given this design, it was no surprise to find that the hearing students outperformed the D/HH students for both stories. This study also reported that the D/HH participants scored higher for their original stories than the retells. The explanation given was that retells were more sensitive to language difficulties (Walker et al., 2003). This type of study was further validation for the need for more and expanded studies such as the one in this dissertation. The study by Walker et al. was not investigating language but was in fact studying the participants' ability to hear. In the case of retell, if the Deaf students did not hear the full message of the story, then of course their score for retell would be lower than someone with normal hearing. This should not be viewed as a language delay but rather a hearing issue.

**Limitations of the Study**

As with all studies, there are always limitations inherent in the design or the methodology. In this case, the first limitation was that of the small sample size. Due to the relatively small percentage of Deaf students in the general population of the United States, it was assumed that the numbers would be low. Given this starting percentage and adding in the criteria of attending a school for the deaf for a particular number of years, being within a certain age range, identifying ASL as the primary language, coming from a family whose primary language is English, and possessing no language disabilities, this number grew even smaller. Given that the sample of D/HH students included in the study was seven, it was critical to match that number with the hearing sample. With the sample size being 14 students in all, it was difficult to generalize the results and to achieve significant results with the regression analyses.

Along with this small sample, the D/HH students varied in their characteristics which could have affected the findings. As with all D/HH children, their abilities in ASL,

their degree of hearing loss, number of years at a school for the deaf, number of years using ASL, amount of parental support, the communication system used at home, type, years, and effectiveness of amplification, and whether they received early intervention services all potentially influenced the results.

With the small sample size, the number of returned surveys was also small. Out of the seven D/HH students that were included in the study, only three surveys were returned. This was a percentage of 43%. With such a modest return, it was difficult to make generalizations and assumptions as well as to find significance with some of the statistical analyses.

All the D/HH students came from one school for the deaf. Although the philosophy of the school required that all students learn and use ASL consistently, this does not mean that the results could be generalizable to the population of D/HH students nationwide. This particular school was located in the southeast region of the United States but there are definite regional differences across the United States that could affect the findings of this study.

With the D/HH students, there was insufficient time to prepare the students for the study. Although the school, the families, and the students consented to participate in the research, the children did not fully understand what was expected until they walked into the examination room. Once inside, they had little time to think about creating a story. It would be interesting to know how the results might have been affected if there was some preparation done by the examiner or the classroom teacher prior to the assessment. For the hearing students, although the researcher had no additional time with them to prepare,

their families had discussed the study with them. For some, they came into the situation ready to tell their stories.

Regarding the development of codes and themes, the initial coding was collected on the original video recordings. However, to create a qualitative codebook, the codes needed to be written in English. As anticipated, this presented some difficulty because some ASL phrases were not able to be translated into English. Even when the eight classifier categories were identified, describing and illustrating these elements accurately presented some obstacles. ASL is a language of movement and space and depicting these aspects in stagnant pictorial form can be problematic at best.

Finally, being that a hearing researcher headed this inquiry may have affected or biased the collection of data and the analysis of the results. Even with members of the Deaf community being involved in all aspects of the analysis, having a hearing person in that mix influenced the process. It was this investigator that presented the book for retells in ASL, asked questions of the D/HH students utilizing ASL, and initially identified the eight classifier categories as possible themes for coding the qualitative phase of the study. However, every possible safeguard was put into place to minimize the bias and respect the integrity of the language, thought, and culture of the Deaf community.

**Recommendations for Future Practice**

As a result of the research conducted for this study and the data collected/ analyzed as well as building on the theories upon which this investigation was based, there are several practical recommendations, that when implemented, should improve the educational outcomes for D/HH students. The two most significant themes that emerged were the importance of ASL education and the use of storytelling and books for

instructional purposes. Both of these areas are supported by the emancipatory/critical disability theory as well as second language acquisition theory.

Providing instruction in ASL, in much the same way as classes are provided in English, will serve to strengthen the foundation in the child's primary language (Evans, 2004; M. L. Hall et al., 2019; NAD, 2016). With the majority of D/HH children coming from hearing families, it is critical that they engage in educational activities that teach appropriate grammar and are provided with opportunities for practice (Beal-Alvarez & Easterbrooks, 2013; Beal-Alvarez & Scheetz, 2015; Evans, 2004). This study demonstrated that the stronger the ASL skills, the stronger the students' skills were in story structure. In turn, better skills in story structure were equated with better skills in reading comprehension (M. L. Hall et al., 2019; Priestley et al., 2018; Scott & Dostal, 2019). In addition, following second language acquisition theory, a strong foundation in one's primary language is essential for the learning of a second language (Ariza et al., 2016; Cummins, 1979; Hermans et al., 2008; Krashen, 2003; Krashen & Brown, 2007; Mounty et al., 2014; Nguyen et al., 2001). By building a child's ASL skills, one is strengthening the bridge that leads to English.

The importance of storytelling cannot be over emphasized. Through this medium, information is shared, ideas are expressed, thoughts are shared, cultures are explored, and students find mutual experiences that can be explored (Dubé, 2000; Lockett & Jones, 2009). For the "listener," comprehension is improved, discovering things they have in common or that are different are identified, and the social aspects of interaction are practiced. It also serves as an equalizer in that all students have stories to share (Bellinger & DiPerna, 2011; Tarwacka-Odolczyk et al., 2014). In this way, whether D/HH students

are in a school for the deaf or a mainstream situation, they can and need to fully participate in this activity. Of course, in the second scenario, interpreting will need to be provided in an effective manner.

As ASL does not have a written component, it is critical that students, as well as Deaf adults in the school, have the opportunity to make and share video recordings of stories. These may be creative stories as well as sharing books through ASL (Beal et al., 2020; Easterbrooks & Huston, 2008). In this way, students are provided with authentic experiences in telling stories and can share them with their peers and their families. Through the video recordings of books, D/HH students are exposed to literature and the language of books. This activity serves to build that bridge from ASL to the written word (Andrews, 2012).

The art of reading books within the classroom is critical for all students. Unfortunately for D/HH students, books are not shared often enough and for those within mainstream classroom, these children frequently miss out on the very experiences they need the most (Andrews, 2012; Berke, 2013; Dirks & Wauters, 2018; Schwarz et al., 2020). There are so many skills that can be learned from books. Most simply, students learn how books are organized, from the cover to the final page. Individual words and phrases can be pointed out for their contextual meaning or for their unusual spelling. Children learn to predict actions as well as to describe characters and infer emotions. Information can be shared and prior experiences as well as background knowledge can be linked to current readings (Bailes, 2001; Berke, 2013). Through all these instructional strategies, teachers need to plan how to present a book and practice how to read it. For hearing students, one must think about what to emphasize and what questions to ask.

With D/HH students, the teacher must address these thoughts as well as practice how to interpret the story, decide when to use ASL, and when to link to the written English (Bailes, 2001; Beal et al., 2020; Easterbrooks & Huston, 2008). At times, it might be appropriate to sign the story for its meaning and other times it might be prudent to emphasize the flow of the English language and the meaning behind the words. Finding the balance between stressing the meaning and pointing out the printed words and phrases is not simple. However, to build that bridge between the two languages, it is necessary (Andrews, 2012; Berke, 2013; Dirks & Wauters, 2018; Schwarz et al., 2020).

Finally, and perhaps most importantly, D/HH students must be assessed in their primary language. If that language is ASL, then the child must be evaluated in ASL without first translating or transcribing it into English. Once a child's first language is transcribed into their second language, you are no longer assessing their language ability but rather evaluating their abilities in their second language (Demers & Bergeron, 2019; M. L. Hall et al., 2019; Marschark et al., 1994; Tarwacka-Odolczyk et al., 2014; Wilkinson & Wilkinson, 2020). This is not equitable, and children are being mislabeled as language delayed because of this practice. In doing so, not only is ASL not being respected as a language, but the children are automatically being put at a disadvantage in terms of the type of educational services and strategies that they need to receive (Beal et al., 2020; Evans, 2004; Marschark et al., 1994). This form of paternalism, oppression, and marginalization needs to stop.

**Recommendations for Future Research**

This study was the first step in closing the gap that currently exists in the literature. Until now, no studies had been conducted that compared both hearing and D/HH children, whose primary language was ASL, for both original and retell stories. In

addition, no other studies kept the integrity of the child's original ASL language intact and analyzed it for story structure from those original recordings. The perspective of viewing D/HH children as second language learners is not new but studying it from a theoretical perspective along with critical disability theory provides an innovative approach.

The research study that began here needs to be expanded with a larger sample. More schools for the deaf need to be involved from various regions across the United States. In addition, it will be important to include children from mainstream programs in which ASL is used. Having more students involved and with a cross sampling with a larger demographic will serve to make the collected data and analyses more generalizable.

Along with the large sample size, it will be important to increase the percentage of surveys that are returned from the families. The information garnered from these questions can offer insight into the significant factors that affect the results of the students' scores. One may surmise as to the effect of the various factors included in the survey, but it is only through the careful statistical analyses that one can be sure which factors had the greatest impact.

For future studies, it will be important to include some preparation time with the students prior to the collection of stories. Many of the students in the current study came into the situation without any prior knowledge of what would be expected. With some practice in the classroom with storytelling, provided by the teacher or the researcher, it will be interesting to note how this change may affect the outcomes.

In looking toward the future and considering the results of this study, it will be critical that we change the way in which we assess language in students who are D/HH. We first must provide a foundation in ASL with support and instruction to effectively begin to bridge that language to English (Andrews, 2012; Berke, 2013; Dirks & Wauters, 2018; Schwarz et al., 2020). Teachers at schools for the deaf must be trained in this area and, in the mainstream, typical classroom teachers must receive education in teaching the deaf rather than leaning on the interpreters and the resource room teachers for all instruction and communication (Gibbons, 2015; Luckner & Muir, 2001). In addition, any language needs assessments must be able to tease out the differences between students with delays in English due to being second language learners and those that have a true language disability that effect their learning of both ASL and English (Beal et al., 2020; Evans, 2004; Marschark et al., 1994). Educational policies need to advocate the assessment and education of D/HH children using their primary language (ASL) and stop using a medical model for instructional purposes (Barton, 2005; Procknow et al., 2017; Shakespeare, 2014).

**Conclusion**

It was expected that this study would provide integrated data from both the quantitative and the qualitative phases to not only demonstrate that Deaf students perform similarly to their hearing peers, when telling original stories in their primary language, but to help provide insight into these results. Research has shown that through storytelling, one can assess children's literacy skills as well as their background knowledge on various subjects (Bailes, 2001; Berke, 2013). In addition, this event allows them the opportunity to share their cultural experiences, values, personal anecdotes, as well as communicate their social/emotional needs (Dirks & Wauters, 2018; Schwarz et

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al., 2020). The significance of this inquiry highlighted the importance of assessing students in their primary language rather than comparing results of one group's primary language with another group's secondary language. With this powerful change in perspective, Deaf students were evaluated more accurately and in the future the label of language deficient will be significantly reduced in its use.

Unfortunately, this label of language deficient has not only been a disservice to Deaf children but has allowed for the growth of paternalism and ableism in the guise of sympathy and pity (Procknow et al., 2017; Shakespeare, 2014). Once the strength and value of ASL is recognized and students are evaluated accurately as second language learners, we will finally be able to capitalize on a students' strengths and develop learning strategies that are effective and unique to Deaf youngsters. Equity is the key (Barton, 2005; Evans, 2004). Whether Deaf children are in schools for the deaf or mainstreamed, they must be viewed as capable and educational opportunities for them must be accessible and equivalent.

Educational systems must begin teaching ASL as a language to Deaf youngsters. Knowing that the stronger their ASL the stronger the connections will be built to English, makes this imperative (Goldin-Meadow & Mayberry, 2001; Hermans et al., 2008; Keck & Wolgemuth, 2020; Mounty et al., 2014). Their language abilities must be measured in ASL thereby obtaining an accurate analysis of their strengths and weaknesses (Dubé, 2000; Heilmann et al., 2010). During the data collection phase of the study, one boy, who came from a Deaf family, was later eliminated due to his inability to tell an original story. However, if one was serving as an evaluator of his language, he might in fact have a language related disability. He has been exposed to ASL from birth, attends a school for

the deaf where ASL is used continually, received early intervention services from a very young age, and still shows signs of language difficulties. The difference here is that the instructional approaches to reach this student will be very different than those used with students who show delays in English but strengths in ASL.

It is hoped that future studies will duplicate this methodology and that the results will be enough to begin addressing the need to assess students in their primary language when beginning to explore for language deficiencies and language related disabilities. There is a difference between Deaf students that require assistance with learning English, due to the challenges that arise from acquiring a language primarily through the visual channel, and Deaf students that require assistance with learning both ASL and English, due to a language disorder. To effectively tease out these differences, professionals must first recognize these distinctions and then develop assessments to construct appropriate plans of action. This study was a first step in this endeavor.

# APPENDIX A SUMMARY OF EMPIRICAL STUDIES

| Source Author(s), date, and journal | Purpose | Methodology design | Sample | Data collection tool(s) | Findings |
|---|---|---|---|---|---|
| Beal-Alvarez & Easterbrooks (2013), *American Annals of the Deaf*, *158*(3), 311–333 | Examining the effectiveness of a 6-week intervention, with repeated viewings of ASL stories, on classifier production during narrative retells | Quantitative study that used a multiple baseline single subject design. Data were collected immediately following the intervention and 4 weeks post intervention | $N = 10$; from an urban day school for deaf students, grades 2-4, ages 7-10, 8 male and 2 female | ASL Receptive Skills Test | Providing teacher mediation and retell opportunities in ASL, 10 minutes a day, were effective in increasing classifier production for most children |
| Beal-Alvarez & Sheetz (2015), *American Annals of the Deaf*, *160*(3), 316–333 | Investigate the receptive and expressive ASL skills of teacher and interpreter candidates as well as their ability to assess the ASL skills of deaf students | Quantitative study that measured the accuracy of subjects' self-evaluations and those of deaf students against the assessments made by university professors | $N = 10$; teacher and interpreter candidates N=2; students, age 9, both males | Signed Reading Fluency Rubric | Generally, both the teacher and the interpreter candidates could accurately assess themselves as well as the 2 children in terms of receptive and expressive ASL ability |
| Bellinger & DiPerna (2011), *Psychology in the Schools*, *48*(4), 416–426 | This study examined the reliability and validity of scores on a fluency-based measure of reading comprehension | Non-experimental quantitative design | $N = 44$; 21 boys and 23 girls; ages 9-10 from grade 4 in central PA | DIBELS – 6th Ed. RTF and DORF; Woodcock-Johnson III Tests of Achievement Reading Comprehension | Results indicated a lack of consistency between real time and recorded RTF scores. RTF scores (real time and recorded) demonstrated low concurrent validity with scores on the RC. ORF scores were found to be a more valid indicator of reading comprehension than RTF scores |
| Dubé, (2000), Doctoral dissertation | This study served to develop an instrument for the assessment of narrative language skills of deaf children in | Quantitative | $N = 39$; 24 boys and 15 girls; mean age: 8.3 | Picture Story Language Instrument (PSLI); TONI -2; Teacher rating form; Parent-family questionnaire | Results indicated that the PSLI is a valuable tool for collecting and analyzing narrative stories from deaf children. Stories |

| Source Author(s), date, and journal | Purpose | Methodology design | Sample | Data collection tool(s) | Findings |
|---|---|---|---|---|---|
| | either ASL or English | | | | elicited increased with grammar units, length, and complexity with respect to age |
| Galvan (1999), *American Annals of the Deaf*, *144*(4), 320–324 | Investigating the use of morphological inflections in ASL by native and early signers | Qualitative study | *N* = 30; ages 3-9; 4 groups of native signers & 2 groups of early signers; 5 students in each group | Students were video recorded as they signed the story from the picture book, Frog, Where Are You? | Native and early signers are processing at least one morphological system in very different ways. The early signers were not sensitive to subtle changes in movement that are used to change meaning for aspect or number. Early signers show increasingly complex utterances without morphological growth of aspectual inflections |
| Heilmann et al. (2010), *American Journal of Speech and Language Pathology*, *19*(2), 154–166 | To better understand the linguistic properties of the NSS and to extend understanding of the relationship between the microstructural and macrostructural measures | Quantitative study | *N* = 129; typically developing students; 60%K, 36% 1st, 2% PreK; 69 girls & 60 boys | NSS, NTW, NDW, MLCU (mean length of C-unit) General grammatical skills | Story schema & vocabulary acquisition develop along similar paths; vocabulary & grammar most strongly related to narrative macrostructure scores |
| Khan et al. (2016), *Journal of Speech, Language & Hearing Research*, *59*(6), 1395–1408 | To improve our understanding of story-structure development in the early childhood years prior to, and around, school entry | Quantitative study | *N* = 386; typically developing students; mean age 4.8, ages 3-6, 57.1% girls & 42.9% boys | List of 60 individual items, identified from prior research, that include narrative macro and micro level features | There is a developmental pattern for story structure abilities |
| Lucero (2018), *Language, Speech, and Hearing Services in Schools*, *49*(3), 607–621 | Investigate the development of oral narrative retell proficiency among Spanish-English emergent bilingual children, in | Quantitative study | *N* = 12; emergent bilingual children; grades K-2, Spanish was spoken in the home, | SpNSS; EngNSS; SpTNW; EngTNW; SpNDW; EngNDW; SpMLUw; EngMLUw; SpSI; EngSI; | Children showed improvement in vocabulary in both languages. Story structure was only improved in English |

| Source Author(s), date, and journal | Purpose | Methodology design | Sample | Data collection tool(s) | Findings |
|---|---|---|---|---|---|
| | Spanish and English as they learned literacy in the 2 languages concurrently | | attended a Spanish-English DLI program | EOWPVT-4: SBE; ROWPVT-4: SBE | |
| Marschark et al. (1994), *Journal of Experimental Child Psychology*, *57*(1), 89–107 | To investigate the understanding and use of discourse rules by deaf and hearing children as reflected in narratives produced in sign/oral and in writing | Quantitative study | Experiment #1: 22 Deaf ages 8-14 & 23 hearing ages 7-15; Experiment #2: 18 Deaf ages 8-15 & 16 hearing ages 8-15 | Trabasso & Nickels G-A-O structural analysis and Rightwriter version 3.0: Readability Descriptiveness, Strength | Stories signed and spoken were comparable in their discourse structure. Deaf students have the discourse knowledge for fluent written production but lack the literary & syntactic tolls to implement them. |
| Miller et al. (2018), *Communication Disorders Quarterly*, *40*(1), 15–27 | Investigated the effects of a narrative intervention, that employed repeated story retells and a Story Grammar Marker, on the oral narrative skills of Spanish-speaking English learners with language impairments | Quantitative study; single case multiple – probe across participants design | 4 Spanish – speaking students, 2 boys & 2 girls, mean age of 9.7 | NSS, TNW, NDW, & MLUW | As a result of the intervention, stories became more cohesive and scores for narrative organization increased |
| Tarwacka-Odolczyk et al. (2014), *Psychology of Language and Communication*, *18*(2), 149–177 | Investigate the effect on a deaf child's narrative, using sign language, on whether the adult sees the pictures on which the story is based | Quantitative study | 24 deaf students; Group 1: 12 students, ages 8-9 taught in a bilingual method with Polish Sign Language Group 2: 12 students, ages 8-11, taught in a simultaneous method with speech and Polish Sign Language | Story length, semantic analysis, information categories, & types of explanations | Narration is a function of knowledge about a situation possessed by the subject. Without seeing the pictures, texts were longer, more elaborate, more spontaneous, and more new content was added. |
| Wang et al. (2017), *Journal of Developmental and Physical Disabilities*, *29*(5), 699–720 | Compared sign only to SIMCOM on recall of stories by deaf children | Quantitative study; within-subject design | 36 Deaf students, 19 girls & 17 boys, mean age 12.9 | WJ III ACH subtest: Story Recall | Students scored higher with recalls with sign-only. Simultaneous speech & sign compromised comprehension. |

| Source Author(s), date, and journal | Purpose | Methodology design | Sample | Data collection tool(s) | Findings |
|---|---|---|---|---|---|
| | | | | | The use of 2 channels (sign plus speech) to deliver the same linguistic information could tax working memory; leading to decreased story recall ability. |

# APPENDIX B IRB APPROVAL LETTER

**ST. JOHN'S UNIVERSITY**

Federal Wide Assurance: FWA00009066

Sep 12, 2023 10:20:19 AM EDT

PI: Cathy Milliren
CO-PI: Ekaterina Midgette
Dept: The School of Education

Re: Initial - IRB-FY2023-313 Narrative Language Development in Deaf Children as Assessed Through American Sign Language: A Comparative Analysis Utilizing Retells and Original Stories

Dear Cathy Milliren:

The St John's University Institutional Review Board Institutional Review Board has approved your initial submission for Narrative Language Development in Deaf Children as Assessed Through American Sign Language: A Comparative Analysis Utilizing Retells and Original Stories. The approval is effective from June 23, 2023 through June 21, 2024.

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Findings (if applicable):

Research Notes:

Sincerely,

Raymond DiGiuseppe, PhD, ABPP
Chair, Institutional Review Board
Professor of Psychology

**APPENDIX C SCHOOL CONSENT FORM**

ST. JOHN'S
UNIVERSITY

The School of Education
Department of Education Specialties
PhD in Literacy Program


School Consent Form

Dear _____:


      Your school has been selected to be used as a site to conduct a research study to learn more about narrative language development in Deaf children as assessed in ASL. This study will be conducted by Cathy Milliren, from the PhD in Literacy Program in the School of Education, at St. John's University as part of her doctoral dissertation. Her faculty advisor is Dr. Ekaterina Midgette, Department of Education Specialties.

      If you agree to allow your school and students to participate in this study, the researcher may ask to gain access to student files and records and/or test scores. The student participants will be asked to watch a story in ASL and then retell it to the researcher. The students will also tell an original story. In addition, the students will also be asked a series of open-ended questions to allow them to expand on their stories and talk about the choices that they made. It is anticipated that each session with the students will last between 20 and 30 minutes. All sessions will be videotaped. The videotapes will be kept in a locked file and destroyed after the study is complete. There are no known risks associated with your site participating in this research beyond those of everyday life.

      Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

      Although you will receive no direct benefits, this research may help the investigator understand the narrative competency that Deaf students possess, compared to their hearing peers, when both are assessed in their primary language.

      Confidentiality of your student's records will be strictly maintained by removing all names and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the videotaped documentation and will be stored in a locked file. All responses will be kept confidential with the following exception: the

researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time. For student documents or academic records, you may refuse access to the researcher.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Cathy Milliren at 845-987-9328, Cathy.Milliren20@st.johns.edu or Dr. Ekaterina Midgette at Midgette@stjohns.edu. For your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955.

You have received a copy of this consent document to keep.

<u>Agreement to Participate</u>

_____          _____
Principal's Signature                                          Date

The School of Education
Department of Education Specialties
PhD in Literacy Program

Parental Consent Form

Dear Parents,

Your child has been invited to take part in a research study to learn more about narrative language development in Deaf children as assessed in ASL. This study will be conducted by Cathy Milliren, from the PhD in Literacy Program in the School of Education, at St. John's University as part of her doctoral dissertation. Her faculty advisor is Dr. Ekaterina Midgette, Department of Education Specialties.

If you agree to allow your child to participate in this study, the researcher may ask to gain access to your child's files and records and/or test scores. Your child will be asked to watch a story in ASL and then retell it to the researcher. Your child will also tell an original story. In addition, your child will also be asked a series of open-ended questions to allow her/him to expand on the stories and talk about the choices that she/he made. It is anticipated that the session with your child will last between 20 and 30 minutes. The session will be videotaped. The videotape will be kept in a locked file and destroyed after the study is complete. There are no known risks associated with your child participating in this research beyond those of everyday life.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the narrative competency that Deaf students possess, compared to their hearing peers, when both are assessed in their primary language.

Confidentiality of your child's records will be strictly maintained by removing all names and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the videotaped documentation and will be stored in a locked file. All responses will be kept confidential with the following exception: the

researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time. For student documents or academic records, you may refuse access to the researcher.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Cathy Milliren at 845-987-9328, Cathy.Milliren20@st.johns.edu or Dr. Ekaterina Midgette at Midgette@stjohns.edu. For the rights of a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955.

You have received a copy of this consent document to keep.

<u>Agreement for your child to Participate</u>

Yes, I agree to have my _____ participate in the study described above.

_____     _____
Parent's Signature                                            Date

# APPENDIX E ASSENT FOR CHILDREN UNDER AGE 12 (D/HH)



(To be read aloud to the child)

My name is Cathy Milliren. I work with parents and children, but I am also a student. Right now, I am trying to learn more about storytelling.

If you agree, you will be asked to tell me an original story as well as retelling me a story from a picture book without words.

You may be helping us understand what parts of a story are important for you to include.

You should know that if you decide to help me or if you decide to say "no," your choice will not affect your grades.

Please know, that when I ask you questions, there are no right or wrong answers.

Please talk this over with your parents before you decide if you want to be in my study or not. I will also ask your parents to give their permission for you to be in this study, but even if your parents say "yes," you can still say "no" and decide not to be in the study.

If you don't want to be in my study, you don't have to be in it. Remember, being in the study is up to you and no one will be upset if you don't want to be in the study or if you decide to stop after we begin, that's okay, too.

You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me or ask your parents or teacher to call me at 845-987-9328.

Would you like to tell me a story?

[Child answers yes or no; only a definite yes may be taken as consent to participate.]

# APPENDIX F PARENTAL CONSENT FORM (FOR FAMILIES OF HEARING STUDENTS)



The School of Education
Department of Education Specialties
PhD in Literacy Program

**Parental Consent Form**

Dear Parents,

Your child has been invited to take part in a research study to learn more about narrative language development in Deaf children as assessed in ASL. This study will be conducted by Cathy Milliren, from the PhD in Literacy Program in the School of Education, at St. John's University as part of her doctoral dissertation. Her faculty advisor is Dr. Ekaterina Midgette, Department of Education Specialties.

Your child will be asked to listen to a story and then retell it to the researcher. Your child will also tell an original story. It is anticipated that the session with your child will last between 20 and 30 minutes. The session will be videotaped. The videotape will be kept in a locked file and destroyed after the study is complete. There are no known risks associated with your child participating in this research beyond those of everyday life.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the narrative competency that Deaf students possess, compared to their hearing peers, when both are assessed in their primary language.

Confidentiality of your child's records will be strictly maintained by removing all names and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the videotaped documentation and will be stored in a locked file. All responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time. For student documents or academic records, you may refuse access to the researcher.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Cathy Milliren at 845-987-9328, Cathy.Milliren20@st.johns.edu or Dr. Ekaterina Midgette at Midgette@stjohns.edu. For the rights of a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955.

You have received a copy of this consent document to keep.

**<u>Agreement for your child to Participate</u>**

Yes, I agree to have my _____ participate in the study described above.

_____          _____
Parent's Signature                                            Date

**APPENDIX G ASSENT FOR CHILDREN UNDER AGE 12 (HEARING)**



**ST. JOHN'S UNIVERSITY**

**(To be read aloud to the child)**

My name is Cathy Milliren. I work with parents and children, but I am also a student. Right now, I am trying to learn more about storytelling.

If you agree, you will be asked to tell me an original story as well as retelling me a story from a picture book without words.

You may be helping us understand what parts of a story are important for you to include.

Please talk this over with your parents before you decide if you want to be in my study or not. I will also ask your parents to give their permission for you to be in this study, but even if your parents say "yes," you can still say "no" and decide not to be in the study.

If you don't want to be in my study, you don't have to be in it. Remember, being in the study is up to you and no one will be upset if you don't want to be in the study or if you decide to stop after we begin, that's okay, too.

You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me or ask your parent to call me at 845-987-9328.

Would you like to tell me a story?

[Child answers yes or no; only a definite yes may be taken as consent to participate.]

# APPENDIX H STUDY SURVEY (PARENTS OF HEARING CHILDREN)

Thank you for allowing your child to participate in this study. Please complete this short survey to assist with the analysis of this research. Feel free to skip any questions that you do not wish to answer.

1. How many years has your child been in school?

   ☐

2. What is the primary language "spoken" in your home? (Please choose only one.)

   o American Sign Language (ASL)
   o English
   o Spanish
   o French
   o Chinese
   o German
   o Italian
   o Vietnamese
   o Other/Multiple languages (please specify)

   ☐

3. List the job title of the parents/guardians in your home.

   ☐

   ☐

   ☐

   ☐

   o Currently not employed
   o Prefer not to answer

4. Which best describes your family's yearly income?

   o $0 to $9,000
   o $10,000 to $24,999
   o $25,000 to $49,999
   o $50,000 to $74,999
   o $75,000 to $99,999
   o $100,000 to $124,999
   o $125,000 to $149,000
   o $150,000 to $199,000
   o $2000 and up
   o Prefer not to answer

5. What is your ethnicity? (Please select all that apply.)

   o American Indian or Alaskan Native
   o Asian or Pacific Islander
   o Black or African American
   o Hispanic, Latino/a, or of Spanish origin
   o White/Caucasian
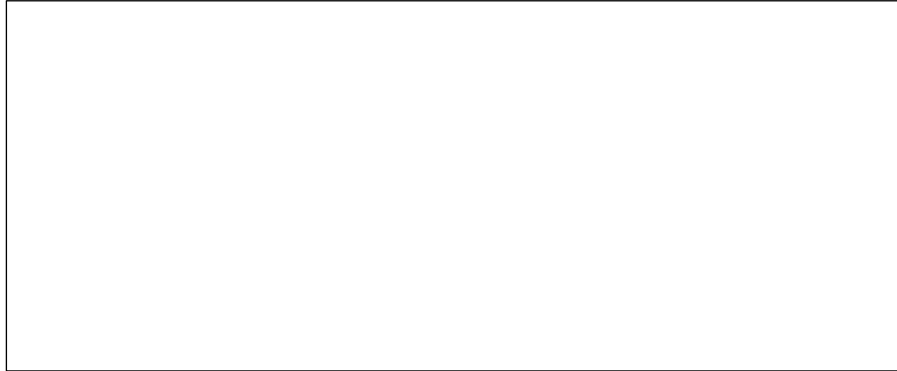   o Prefer not to answer
   o Other (please specify)

6. What is the highest level of schooling that the parent(s)/guardian(s) in the home has completed or the highest degree that was received?

   o Less than high school degree
   o High School degree or equivalent (e.g. GED)
   o Some college but no degree
   o Associate degree
   o Bachelor's degree
   o Graduate degree

7. How many siblings does your child have?

8. What position does your child have within the family? (1$^{st}$ born, 2$^{nd}$ child, 3$^{rd}$ child, …)?

9. List the extra-curricular (after school) activities in which your child participates.

# APPENDIX I STUDY SURVEY (PARENTS OF D/HH STUDENTS)

Thank you for allowing your child to participate in this study. Please complete this short survey to assist with the analysis of this research. Feel free to skip any questions that you do not wish to answer.

1. How many years has your child been in school?

   

2. What is the primary language "spoken" in your home? (Please choose only one.)

   o American Sign Language (ASL)
   o English
   o Spanish
   o French
   o Chinese
   o German
   o Italian
   o Vietnamese
   o Other/Multiple languages (please specify)

   

3. List the job title of the parents/guardians in your home.

   

   

   

   

   o Currently not employed
   o Prefer not to answer

4. Which best describes your family's yearly income?

- o $0 to $9,000
- o $10,000 to $24,999
- o $25,000 to $49,999
- o $50,000 to $74,999
- o $75,000 to $99,999
- o $100,000 to $124,999
- o $125,000 to $149,000
- o $150,000 to $199,000
- o $2000 and up
- o Prefer not to answer

5. What is your ethnicity? (Please select all that apply.)

- o American Indian or Alaskan Native
- o Asian or Pacific Islander
- o Black or African American
- o Hispanic, Latino/a, or of Spanish origin
- o White/Caucasian
- o Prefer not to answer
- o Other (please specify)

6. What is the highest level of schooling that the parent(s)/guardian(s) in the home has completed or the highest degree that was received?

- o Less than high school degree
- o High School degree or equivalent (e.g. GED)
- o Some college but no degree
- o Associate degree
- o Bachelor's degree
- o Graduate degree

7. How many siblings does your child have?

8. What position does your child have within the family? (1st born, 2nd child, 3rd child, …)?

9. List the extra-curricular (after school) activities in which your child participates.

[blank box]

10. At what age was your child diagnosed as Deaf/Hard-of-Hearing?

[blank box]

11. What type(s) of amplification does your child use?

[blank box]

12. Which communication system(s) do you use at home? (Please check all that apply)
- o Speech
- o American Sign Language (ASL)
- o Home signs
- o Gestures
- o Pidgin Sign Language (ASL signs in English word order)
- o Fingerspelling
- o Signing Exact English (SEE)
- o Other (please specify)

[blank box]

13. Did your child receive any Early Intervention Services?

- o   Yes
- o   No

14. If your child received Early Intervention Services, what services did he/she receive?

# APPENDIX J NARRATIVE SCORING SCHEME: SCORING RUBRIC

## NSS SCORING RUBRIC

| Characteristic | Proficient (5) | Emerging (3) | Minimal/Immature (1) |
|---|---|---|---|
| **Introduction** The presence, absence, and qualitative depiction of character and setting components. | **1) Setting:** - States general place and provides some detail about the setting (e.g., reference to the time of the setting, daytime, bedtime, season). - Setting elements are stated at appropriate place in story. **2) Characters:** - Main characters are introduced with some description or detail provided. | **1) Setting:** - States general setting but provides no detail. - Description or elements of setting are given intermittently through story. - May provide description of specific element of setting, e.g., the frog is in the jar. **2) Characters:** - Characters of story are mentioned with no detail or description. | - Launches into story with no attempt to provide the setting or introduce the characters. |
| **Character Development** The acknowledgment of characters and their significance throughout the story. | - Main character(s) and all supporting character(s) are mentioned. - Discriminates between main and supporting characters, e.g., more description of, or emphasis upon, main character(s). - Narrates in first person using character voice, e.g., "You get out of my tree", said the owl. | - Both main and active supporting characters are mentioned. - Main characters are not clearly distinguished from supporting characters. | - Inconsistent mention of involved or active characters. - Character(s) necessary for advancing the plot are not present. |
| **Mental and Emotional States** Score based on the vocabulary used to convey charter emotions and through processes. | - Mental states of main and supporting characters are expressed when necessary for plot development and advancement. - A variety of mental state words are used. | - Some use of evident mental state words to develop character(s). | - No use of mental state words to develop character(s). |
| **Referencing/ Listener Awareness** Scores based on the consistent and accurate use of antecedents and clarifiers throughout the story. Use of correct pronouns and proper names should be considered when scoring. | - Provides necessary antecedents to pronouns. - References are clear throughout story. | - Inconsistent use of referents/antecedents. | - Excessive use of pronouns. - No verbal clarifiers used. - Speaker is unaware that listener is confused. |

| | | | |
|---|---|---|---|
| **Conflict/Resolution and Event/Reaction** Scores based on the presence or absence of conflict/resolutions and event/reactions required to express the story as well as how thoroughly each was described. | - Clearly states all conflict/resolutions and event/reactions critical to advancing the plot of the story. | - Under developed description of conflict/resolutions and event/reactions critical to advancing the plot of the story. **OR** - Not all conflict/resolutions or event/reactions critical to advancing the plot are present | - Resolution(s) or reaction(s) stated with no mention of cause or conflict. **OR** - Conflict (s) or event(s) mentioned without resolution. **OR** - Many conflict/resolutions or event/reactions critical to advancing the plot are not present. |
| **Cohesion** Scores based on the sequence of, details given to, and transitions between each event. | - Events follow a logical order. - Critical events are included while less emphasis is placed on minor events. - Smooth transitions are provided between events. | - Events follow a logical order. - Excessive detail or emphasis provided on minor events leading the listener astray. **OR** - Transitions to next event unclear. **OR** - Minimal detail given for critical events. **OR** - Equal emphasis on all events. | - No use of smooth transitions. |
| **Conclusion** Scores are based on the conclusion of the final event as well as the wrap up of the entire story. | - Story is clearly wrapped up using general concluding statements such as "and they were together again happy as could be". | - Specific event is concluded, but no general statement made as to the conclusion of the whole story. | - Stops narrating and listener may need to ask if that is the end. |

**Scoring:** Each characteristic receives a scaled score 0-5. Proficient characteristics=5, Emerging=3, Minimal/Immature=1. Scores in between are undefined, use judgment. Scores of 0 and NA are defined below. A composite is scored by adding the total of the characteristic scores. Highest score possible=35.

* **A score of 0** is given for TARGET SPEAKER errors (i.e., telling the wrong story, conversing with examiner, not completing/refusing task, abandoned utterances, unintelligibility, poor performance, components of rubric are given in imitation-only manner).

* **A score of NA** (non-applicable) is given for MECHANICAL/EXAMINER/OPERATOR errors (i.e., interference from background noise, issues with recording, examiner quitting before target speaker does, examiner not following protocol, examiner asking overly specific or leading questions rather than using open-ended questions or prompts.

## APPENDIX K NARRATIVE SCORING SCHEME RUBRIC FOR *DRAWN TOGETHER* BY MINH LÊ

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/ Immature (1) |
|---|---|---|---|---|---|
| Introduction | 1.Mom, son, and Grandfather 2.Go to Grandfather's house 3.Makes reference to time (i.e. one day) | Includes 2 of the 3 details from proficient | Includes 2 of the 3 details from proficient but refers to the son as boy | Includes 1 of the 3 details from proficient | Starts the story without mentioning the characters |
| Character Development | Main characters and all supporting characters are mentioned with specific characteristics for each. 1.Mother 2.Grandson 3. Grandfather 4. Wizard (or other name given for boy's drawing) 5. Warrior (or other name given for Grandfather's drawing) 6. Dragon | Main characters and all supporting characters are mentioned with specific characteristics for most. | Four or more of the characters are mentioned with at least one specific characteristic for each | Four or more of the characters are mentioned with little to no descriptions given | Two characters are mentioned with no descriptions given |
| Mental and Emotional States | Use 5 different affective or cognitive states 1.Affective: sad, happy, surprised, afraid, brave 2.Cognitive: bored, thinking, have an idea, imagine | Use 3 or 4 different affective or cognitive states | Use 2 different affective or cognitive states | Only uses 1 affective or cognitive state | No use of affective or cognitive state terms |
| Referencing/Listener Awareness | All pronouns used have previously been identified. Listener knows which character is being referenced. | Pronouns are used and most have been identified. Most references are clear. | Inconsistent use of pronouns with half of the references being unclear. | Highly inconsistent use of pronouns and most of the references are unclear. | No pronouns are used, or pronouns used without naming characters. Unclear as to which character is being referred. |

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/ Immature (1) |
|---|---|---|---|---|---|
| Conflict/Resolution and Event/Reaction | Eleven to thirteen elements are included and are well developed. 1.The boy is bored and starts to draw. 2.The Grandfather starts to draw too. 3.The boy draws a wizard, and the grandfather draws a warrior. 4.Together, they drew a new world. 5.The boy and the grandfather find themselves on opposite sides of a chasm. 6. The boy has the grandfather's brush, and the grandfather has the boy's wand. 7. A dragon comes out of the chasm. 8. Together, the grandfather and the boy fight the dragon. 9. The dragon becomes a bridge and the boy, and the grandfather run to each other. 10. The boy and the grandfather look at the beautiful world that they created and hug. | Eleven to thirteen elements are included, and most are well developed. | Eight to eleven elements are included but they are not fully developed. | Four to seven elements are included but they are not developed. | One to three elements are mentioned but there is no plot development. |

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/ Immature (1) |
|---|---|---|---|---|---|
| | 11. The mom comes to pick up her son and hugs the grandfather. 12.The boy leaves with the mom holding the grandfather's brush. 13. The grandfather waves goodbye holding the boy's marker. | | | | |
| Cohesion | Includes 4 or more transition phrases (not necessarily from this list) Transition examples: 1.One day 2.Next 3.Later 4. When the boy was bored… 5. Then 6. After that 7. What happened… | Includes 3 transition phrases | Includes 2 transition phrases | Includes 1 transition phrase | No transition phrases are used |
| Conclusion | The 4 concluding elements are included and are well developed. 1.The boy and grandfather cross the bridge to be together. 2.The grandfather and the boy hug. 3.The mom is happy to see the boy and the grandfather so happy. 4.The boy has the grandfather's brush, and the grandfather | Three concluding elements are included and are well developed, or all 4 elements are mentioned but are not fully developed. | Two concluding elements are included and are well developed, or 3 elements are mentioned but are not fully developed. | One concluding element is included and is partially developed or 2 concluding elements are mentioned but not developed. | Story ends with no concluding elements or one concluding element is mentioned without any development. |

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/ Immature (1) |
|---|---|---|---|---|---|
| | has the boy's marker. | | | | |

*This rubric is meant as a guide for scoring.

**APPENDIX L NARRATIVE SCORING SCHEME: BLANK SCORING RUBRIC**

Student I.D. _____

Original Story

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/Immature (1) |
|---|---|---|---|---|---|
| Introduction | | | | | |
| Character Development | | | | | |
| Mental and Emotional States | | | | | |
| Referencing/Listener Awareness | | | | | |
| Conflict/Resolution and Event/Reaction | | | | | |
| Cohesion | | | | | |
| Conclusion | | | | | |

Retell Story

| Characteristic | Proficient (5) | (4) | Emerging (3) | (2) | Minimal/Immature (1) |
|---|---|---|---|---|---|
| Introduction | | | | | |
| Character Development | | | | | |
| Mental and Emotional States | | | | | |
| Referencing/Listener Awareness | | | | | |
| Conflict/Resolution and Event/Reaction | | | | | |
| Cohesion | | | | | |
| Conclusion | | | | | |

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