

EDUCATORS' PRACTICES INVOLVING DEAF MULTILINGUAL LEARNERS:  
A SINGLE CASE STUDY

by

Mary Christine Thomas

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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APPROVED BY:

Gail Collins, Ed.D., Committee Chair

Frank Bailey, Ed.D., Committee Member

## ABSTRACT

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary school in the southeast. The central research question for this study was: What educational assessments and instructional strategies, that takes language and culture into consideration, are used in the education of DMLs? The theory that guided this study was Vygotsky's sociocultural theory (Vygotsky, 1978, 2012) as it incorporates students' culture and social interactions with peers and teachers into the learning process. This was a qualitative single case study comprised of 12 professionals and educators involved in the education of DMLs. While the role of each participant varied, all were involved in the instructional process of the DMLs in the setting of the study. This study took place at an elementary school in the southeast that houses a deaf education program for students from preschool through the fifth grade. Data was collected through interviews, observations, and a focus group comprised of professionals and educators of DMLs. Data was analyzed by organizing it into manageable systems, reading and memoing transcripts, and identifying and analyzing themes (Yin, 2014). Credibility was established through peer review, member checks, and a reflexive journal. Findings indicate that the use of non-verbal assessments, provision of native language access, incorporation of students' culture into the curriculum, and the use of visuals in instruction are all strategies used in the education of DMLs that takes into consideration language and culture.

*Keywords:* deaf multilingual learners, strategies, American Sign Language, English language learners, sociocultural theory

**Copyright Page**

## **Dedication**

Growing up as the daughter of a preacher, I observed my dad working very hard not only at his job but also as he furthered his education. He completed his bachelor's and master's degrees after being married and having four children. I know he gives glory to God for everything he has accomplished, but I admire him so much. Throughout my educational career, he has always been one of my biggest encouragers as he asks how everything is going and wants to know details of my progression. I know he has lifted me up in prayer many times through this process. It is with great honor that I dedicate this dissertation to my dad, Reverend Robert "Bob" Patty.

## Acknowledgments

Completing a doctoral degree has been a goal of mine for many years. However, it has not been without sacrifice from my family. During the three years I have been working on this degree, our son (Hunter) and daughter (Mattie) both graduated from high school and moved off to college. Having three of our four immediate family members in college at the same time has been a stretch, but we have seen God's hand at work through every stage.

My precious husband, Kenneth, has been so patient throughout every day and night when I have had to study or work on a paper. He listened to me through times of frustration and celebrated as I completed each class and moved one step closer to completion. As a retired educator, his insight has been so useful and has helped guide my thinking at times when I needed assistance.

God led me to the perfect doctoral chair in Dr. Gail Collins and committee member Dr. Frank Bailey. They also provided encouragement and guidance along the way. Dr. Collins provided insight through every email, phone call, and text message. Although I realize I am only one of her students, she always made me a priority during our communications. I am so thankful for her.

Lastly, but most importantly, I want to thank God. I realize it is only through His provision of wisdom and knowledge that I have completed this degree. So many times I have cried out to Him for insight along the way and He has remained faithful to me. My life verse is "Be strong and courageous, do not be afraid or discouraged, for the Lord your God will be with you wherever you go" (Joshua 1:9). This verse has resounded in my life over and over throughout this process. I am thankful for God's faithfulness to me each and every day.

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### **List of Abbreviations**

American Sign Language (ASL)

American Speech-Language-Hearing Association (ASHA)

Deaf and hard of hearing (D/HH)

Deaf multilingual learner (DML)

English language learner (ELL)

Educational Testing Service (ETS)

First language (L1)

Free appropriate public education (FAPE)

Hearing assistive technology system (HATS)

Individual Education Program (IEP)

Kaufman Assessment Battery for Children (KABC-5)

Least restrictive environment (LRE)

Local education agency (LEA)

New Mexico School for the Deaf (NMSD)

National Association of the Deaf (NAD)

Second language (L2)

Signing Exact English (SEE-II)

Speech-language pathologist (SLP)

Speech-language pathologist-assistant (SLP-A)

Students with disabilities (SWD)

Teacher of deaf and hard of hearing (TODHH)

Weschler Intelligence Scale for Children (WISC-5)

Wildcat Elementary School (WES)

World-class Instructional Design and Assessment (WIDA)

Zone of proximal development (ZPD)

## **CHAPTER ONE: INTRODUCTION**

### **Overview**

The purpose of this single case study was to identify instructional strategies, that take into account language and culture, used by professionals and educators involved in the instructional process of deaf multilingual learners (DMLs). Chapter one provides a framework for the entire study. The background section includes an explanation of DMLs and the reason research related to this population is needed. My experience related to the research topic is highlighted in the situation to self section. Following the situation to self section, the problem statement and the purpose statement provides guidance for the study. The research questions for this study, which are an extension of the problem statement and the purpose statement, are presented and explained. For this study, one central research question is listed as well as three related sub-questions. To provide the reader with a clearer understanding of the topic, definitions explaining pertinent vocabulary related to this study are listed. Following the definitions, a summary of the chapter is provided.

### **Background**

The population of ELLs enrolled in schools in the United States in the fall of 2000 was 8.1% or 3.8 million. By the fall of 2015, the population of ELLs had increased to 9.5% or 4.8 million (U.S. Department of Education, 2018). The population of DMLs has increased as well (Pizzo & Chilvers, 2016), 35% of the D/HH students in the United States are DMLs (and more research is needed to determine appropriate instructional strategies for this unique population (Baker & Scott, 2016; Bowen, 2016; Cannon, et al., 2016; Cannon & Luckner, 2016; Guardino & Cannon, 2016; Paul, 2016; Pizzo, 2016; Pizzo & Chilvers, 2016).

DMLs benefit from a Local Education Agency (LEA) that takes into consideration their communication language(s), their culture, and their accessibility in the educational setting (Gallegos, 2017; Pizzo & Chilvers, 2016). By researching instructional strategies that have been proven successful with DMLs, academic success may increase when accompanied by teachers and staff members who listen carefully to the needs of the students, interact personally with the students to reduce bias, and who are knowledgeable of the students' needs including understanding their rights (Baker & Scott, 2016; Gallegos, 2017). Considering the historical context of the education of D/HH students may provide more insight into the need for focused instructional strategies for all students with a hearing loss.

### **Historical Context**

Education of students who are D/HH in the United States began in 1817 when Thomas Hopkins Gallaudet and Laurent Clerc established the "Connecticut Asylum at Hartford for the Instruction of Deaf and Dumb Persons", now called the "American School for the Deaf" (Gallaudet University, n.d.). Laurent Clerc was a teacher at the school who not only taught grade-school students, he also trained deaf and hearing students to become future teachers and school administrators. Many of his former students went on to have a great impact on the education of D/HH students (Gallaudet University, n.d.).

According to Gallaudet University's website (n.d.) there are currently over 100 schools for the deaf in the United States that serve D/HH students. D/HH students may receive a free appropriate education (FAPE) at a school for the deaf or in their local school system's program for D/HH students. The National Association of the Deaf's (NAD, n.d.) position statement on schools for the deaf is found on their website. Although budget cuts have threatened the future of schools for the deaf, the NAD states, "Deaf schools are not just an educational option, but are

the only beneficial option for many deaf children” (NAD.org, n.d.). Benefits listed for attending a residential school for the deaf include language immersion and qualified faculty who are able to communicate with their students without the use of an American Sign Language (ASL) interpreter or through the use of technology. Schools for the deaf serve as resources for mainstream schools that serve the D/HH. While this study did not take place in a residential school for the deaf, I did contact two schools for the deaf within 200 miles of this study’s site requesting their participation. However, I did not receive a response from either of the schools.

Schools in the United States have experienced an increase in the number of school-age bilingual students. From 1980 to 2013, there was an increase in this population of 150% (Pizzo, 2016). As the population of hearing bilingual students continues to increase, a similar trend is occurring with DMLs. DMLs are a growing category in the education field. The Gallaudet Research Institute (GRI, 2013) reported 35% of D/HH children in school in the United States are DMLs. The majority of this unique population, 19%, come from Spanish-speaking homes (Pizzo & Chilvers, 2016). Parents of DMLs may seek educational guidance from educators of DMLs as they seek the best plan for their children in the areas of academic and social development (Baker & Scott, 2016).

### **Social Context**

DMLs are students with a hearing loss who speak more than one language (Cannon, Guardino, & Gallimore, 2016). These students are described as those whose hearing loss “adversely affects educational performance and who are culturally and/or linguistically diverse active learners of the English language and may benefit from various types of language support programs” (Becker & Bowen, 2018, p. 257). When DMLs come to English-speaking schools, they are faced with the challenge of learning English in addition to a signed language such as

ASL as well as becoming acclimated to a new culture (Cannon et al., 2016). DMLs coming to schools in the United States from Mexico may have had no contact with signing deaf adults or with the Deaf community. For example, in Mexico oralism is more prevalent among deaf individuals than the use of *Leguade Señas Mexicana* (Mexican Sign Language, or LSM). Families of D/HH children in Mexico often have difficulty finding opportunities for their deaf child to be exposed to their natural, signing, language (Pfister, 2017).

As previously stated, DMLs coming to the United States from another country may not only experience language barriers, but also the necessity of adapting to a new culture. Cultural experiences for the students will include both American culture and Deaf culture. By incorporating DMLs' culture into instructional activities, all students involved in the learning process are exposed to diverse cultural experiences (Cannon et al., 2016).

Communication methods vary among D/HH individuals. Many deaf education programs use Signing Exact English (SEE-II) to teach reading because this signing system incorporates prefixes and suffixes as well as initialized signs to provide a sign for the majority of words students will encounter in their English language arts training (Luetke-Stahlman, 1996). However, ASL is considered a more appropriate signing system for DMLs because it is a visual language which incorporates cognitive benefits (NAD, n.d.). Through ASL, concepts are presented visually in contrast to SEE-II that incorporates every word in word-for-word English word order (Baker & Scott, 2016).

When DMLs come to schools in the United States, their LEA, along with the students' Individual Education Program (IEP) team, will determine the most appropriate placement for each student. Based on Section 504 of the Rehabilitation Act of 1973, a free appropriate public education (FAPE) is a requirement for each student. The IEP team will also discuss

communication methods, required related services (speech/language therapy, audiological services, interpreting services, etc.), special transportation, and other needed services (U.S. Department of Education, n.d.).

DMLs should benefit from an appropriate educational placement and an appropriate educational plan. However, they may also benefit from educators who are familiar with their cultural background. Training for educators of D/HH students incorporate topics related to hearing services such as language, literacy, audiology, speech/language, as well as instructional strategies (Cannon & Luckner, 2016). Educators must also utilize an understanding of pedagogical skills in conjunction with curriculum and activities that are well-planned for D/HH students (Roksandić, Pavković, & Kovačević, 2018).

Cultural barriers may be reduced, and academic progress heightened, for DMLs who have educators with an understanding of cultural differences (More, Spies, Morgan, & Baker, 2016). In consideration of the importance of culture in the education of DMLs, Vygotsky's (1978) sociocultural theory was an appropriate guide throughout this study.

### **Theoretical Context**

Vygotsky's sociocultural theory was the appropriate theory for this single case study research because this theory emphasizes the importance of culture and cultural interactions as well as the process of knowledge construction through language and dialogue (Vygotsky, 1978). Students' cognitive, social, and behavioral intricacies should be taken into account by educators of DMLs as educational plans are created (Guardino & Cannon, 2015). Language learning experiences are important for DMLs, especially opportunities that occur in context and allow DMLs to make connections through the process. Background knowledge assists students in developing socially and academically (Guardino & Cannon, 2015).

Learning within a cultural setting is the premise of the sociocultural theory. This thought process is relevant to DMLs as they are thrust into not only an English-speaking environment, but also as they adapt to Deaf culture (Hernandez, 2017). However, while it is important to provide cultural experiences that lead to English and ASL language acquisition, it is also important to provide DMLs experiences that promote their native culture and language. As DMLs begin to adapt to their new culture, the importance of their native culture and communicating with their families remains an important part of their sociocultural experiences (Guardino & Cannon, 2015). My experience in the educational process of DMLs has guided this research topic and revealed the need for more research in this area.

### **Situation to Self**

Upon the completion of an Associate of Arts degree in ASL interpreting and a bachelor's degree in deaf education, I began a 13-year tenure of teaching students who are D/HH. Throughout this experience, the population of DMLs in my classroom continued to grow. As I began to review research related to educational strategies which were appropriate with DMLs, I discovered every article ended with a statement of the need for more research in this area (Baker & Scott, 2016; Cannon et al., 2016; Guardino & Cannon, 2016; Paul, 2016; Pizzo, 2016; Pizzo & Chilvers, 2016).

In the school system where I taught DMLs, 100% of the students at the middle school level were DMLs, and over 50% of the elementary school students were DMLs. The educators of these students have been working with DMLs for the last ten years, and the students have demonstrated academic gains. I conducted this study in the school system where I worked. The DML education team involved with these students has been working together for three years, while some members of the team have been together ten-plus years.

The philosophical assumptions associated with this study are ontological, epistemological, rhetorical, and axiological. The ontological assumption were established as reality is reported through different views (Creswell & Poth, 2018). For this study, data was collected through interviews, observations, and a focus group. Views of the various participants (educators of DMLs) were collected, and themes related to their perspectives are reported. Each educator represents a different role in the educational process of DMLs. While each educator may have a different view based on their responsibilities, they are all working toward the same end goal of academic success for DMLs.

By attending to the interviews, observations, and a focus group, I had a first-hand view (epistemological assumption) of strategies being presented by educators of DMLs and the reactions of the DMLs. This time in the field, along with evidence of quotes from the participants which lead to themes, allowed me to have an inside view of the educational process. By observing each educator in their various role(s), I identified instructional strategies beneficial to each area.

To satisfy rhetorical assumptions, I have included extensive information related to D/HH and DMLs which provides a clearer understanding of this unique population. I have also emphasized the need for DMLs to have opportunities to adapt to their new language and culture(s) in content-rich environments while also having experiences related to their native culture. Information from current research related to DMLs is provided throughout this dissertation. Personal experiences are included when appropriate.

In relation to axiological assumptions, I have taught D/HH students for ten years and DMLs for four years. Although I taught in the school system where I conducted my research, I never taught at the elementary school where the study was completed. My axiological

assumption is that knowledge of DMLs' culture is necessary in order for educators of DMLs to promote academic success.

This study was completed with the premise of a constructivism paradigm. Throughout the data collection and analysis phases, I relied on the views of the professional and educators of DMLs. I sought to “develop a theory or pattern of meaning” (Creswell & Poth, 2018, p. 24) as themes emerged through data analysis. Broad questions were asked, during both the interview and focus group portions of the research, giving the participants the opportunity to give extensive answers beneficial to the study. Reflective field notes (Creswell & Poth, 2018) were taken and an observational protocol was used during the observations (see an example of this in Appendix H). I am aware that my experiences teaching DMLs may have shaped my interpretation of the data and results of the study. However, I am not currently teaching DMLs. I feel I was able to bracket out my biases as I sought to collect data and identify themes from the perspectives of current professionals and educators of DMLs instead of allowing my experiences to guide the outcome of the study (Creswell & Poth, 2018).

### **Problem Statement**

Students who are DMLs are placed in their LEA with a representative who may or may not have an understanding of their culture, background, or learning style, and may impede their learning process (Guardino & Cannon, 2016). The number of DMLs comprise 35% of the DHH students in the United States (Pizzo & Chilvers, 2016). As this population continues to grow, LEAs must be prepared to provide for their educational needs. Little research exists concerning instructional strategies that take into consideration DMLs' language and culture (Baker & Scott, 2016; Bowen, 2016; Cannon, et al., 2016; Cannon & Luckner, 2016; Guardino & Cannon, 2016; Paul, 2016; Pizzo, 2016; Pizzo & Chilvers, 2016). The problem in this single case study was to

explore instructional strategies that can be used in the instructional process of DMLs and that take into consideration their language and culture. While using the sociocultural theory as a guide, I sought to identify strategies that will be beneficial to educators of DMLs.

### **Purpose Statement**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary school in the southeast. At this stage in the research, instructional strategies used by educators of DMLs were defined as practices that promote learning (Pizzo, 2016). Language in this study was defined as “a combination of spoken languages, written languages, and/or signed languages” (Cannon & Luckner, 2016, p. 89). The culture of DMLs may be “individualistic with some or no collectivistic elements, while others may be primarily collectivistic with some or no elements of individualism” (Cannon & Luckner, 2016, p. 97). The theory guiding this study was Vygotsky’s sociocultural theory as it incorporates students’ culture and social interactions with peers and teachers into the learning process (Vygotsky, 2012).

### **Significance of the Study**

This case study provides empirical, theoretical, and practical significance in the education of DMLs. In relation to the empirical significance, despite the rise in the population of DMLs in schools in the United States, research related to educational strategies with these students is lacking (Baker & Scott, 2016; Guardino & Cannon, 2015; Pizzo & Chilvers, 2016). The empirical significance was addressed through interviews with professionals and educators of DMLs, observations of professionals and educators of DMLs demonstrating strategies they implement, and a focus group comprised of a group of professionals and educators of DMLs. By

using multiple sources of evidence, the findings were strengthened “through the convergence or triangulation of the data” (Creswell & Poth, 2018, p. 239).

Vygotsky’s sociocultural theory was appropriate for this study as “learning is a necessary and universal aspect of the process of developing culturally organized, specifically human, psychological functions” (Vygotsky, 1979, p. 90). Through the sociocultural context, learning occurs through academic experiences that incorporate the native background of DMLs into lessons with the guidance of teachers (Hernandez, 2017). The New Mexico School for the Deaf (NMSD) incorporates DMLs’ native culture in their arts program through plays and dances that highlight various countries’ cultural experiences (Gallegos, 2017). DMLs in Denver participate in a deaf internationals group that focuses on the varied backgrounds of students from many different countries (Wright Moers, 2017). These are examples of schools who demonstrate the necessity of incorporating DMLs’ native culture into the instructional process.

Problem solving experiences in a student-oriented cultural atmosphere are part of the constructivist sociocultural approach and offer opportunities for DMLs to “argue, discuss and be critical and create their own knowledge” (Panhwar, Ansari, S., & Ansari, K., 2016, p. 186). To prepare DMLs for future employment, educators must provide language instruction that extends beyond the word level and challenges students in linguistic and cultural expectations (Wright Moers, 2017). Educators of DMLs require training to provide appropriate instructional strategies (Panhwar, Ansari, S., & Ansari, K., 2016). This research sought to explore instructional strategies, which take into consideration the language and culture, used by professionals and educators involved in the instructional process of DMLs.

Research that identifies instructional strategies related to DMLs is lacking (Baker & Scott 2016). The practical significance of this study led to the identification of instructional strategies

that are appropriate in the education of DMLs. Although educators are trained in pedagogy, methods of teaching, and other educational strategies, they also require training that prepares them to teach students of different cultural backgrounds to avoid bias (Guardino & Cannon, 2016). By providing additional training to educators of DMLs related to the cultural and language background of their students, they may be able to complete assessments without bias (Guardino & Cannon, 2016; Pizzo & Chilvers, 2016).

### **Research Questions**

The number of DMLs in schools in the United States is increasing (Pizzo & Chilvers, 2016). However, research is lacking related to instructional strategies which are appropriate for this unique population of learners (Baker & Scott, 2016). To determine instructional strategies for DMLs, participants for this study will include various professionals involved in the instructional process with DMLs. The central research question will be:

What educational assessments and instructional strategies, that take language and culture into consideration, are used in the education of DMLs?

Literature related to the education of DMLs emphasizes the need for DMLs to have the opportunity to experience learning in environments that incorporate individual culture and language in addition to their classmates' culture and language (Cannon & Luckner, 2016). The central question of a qualitative study foreshadows the sub-questions as they relate to the overall qualitative study (Creswell & Poth, 2018). The following questions are the sub-questions for this study.

1. What educational assessments are used to determine the language needs of a DML entering a D/HH program?

The assessment process for DMLs may involve assessing a D/HH student who does not

have a knowledge of ASL or the English language (Cannon, Guardino, & Gallimore, 2016). The majority of DMLs are from Spanish-speaking homes. When assessing these students, both the diverse language abilities and experiences, and the assessment itself must be taken into consideration throughout the administration process (Pizzo & Chilvers, 2016).

2. What instructional strategies are used in the process of teaching language skills to DMLs?

DMLs coming to America from Mexico may have attended a school without a trained teacher of the deaf and hard of hearing (TODHH) or may not have had access to formal education or to a formalized signing system (Baker & Scott, 2016). Educators must keep in mind the benefit of incorporating skills DMLs have acquired in their first acquired language. Language skills acquired in a DMLs' first-language may transfer to the use and acquisition of their second-language (Pizzo, 2016; Vygotsky, 1978). One of the primary roles of educators of students who are D/HH is to "ensure access to language and learning" (Simpson, 2018, p. 14). ASL is a visual language that provides cognitive benefits and may be the most appropriate language for students who are DMLs (Baker & Scott, 2016).

3. What instructional strategies are used that incorporate DMLs' culture into the learning process?

Educators of DMLs are encouraged to incorporate DMLs' cultural background and experiences into their learning opportunities (Guardino & Cannon, 2016). The NMSD emphasizes the importance of incorporating the diverse cultures represented in their student body throughout their academic instruction. Teachers and staff at the NMSD are provided training which assists them in exploring their own biases and increases their cultural knowledge. This

intentional training has led to a school-wide awareness of cultural responsiveness and effective interactions (Gallegos, 2017).

### **Definitions**

1. *deaf* – Audiological condition of not hearing; someone who lost their hearing because of illness, trauma or age; do not have access to the knowledge, beliefs, and practices that make up the culture of Deaf people (National Association of the Deaf, n.d.)
2. *Deaf* – Particular group of people who share a language (ASL) and a culture (National Association of the Deaf, n.d)
3. *Deaf multilingual learner* – A student from a country other than the United States who speaks more than one language (Cannon, Guardino, & Gallimore, 2016)
4. *Hard-of-hearing* – A person with a mild-to-moderate hearing loss; or a person who doesn't have/want any cultural affiliation with the Deaf community or both (National Association of the Deaf, n.d)

### **Summary**

The population of students in schools in the United States categorized as DMLs continues to increase (Pizzo & Chilvers, 2016). To meet the educational needs of these unique learners, LEAs must be prepared to meet their educational needs. More research is needed to explore instructional strategies that are appropriate for DMLs and that take into consideration students' language and culture (Baker & Scott, 2016; Guardino & Cannon, 2016; Paul, 2016). The language and cultural background of DMLs' could have an impact on their educational assessment process and should be evaluated for each student (Pizzo & Chilvers, 2016). The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process

of DMLs at an elementary school in the southeast. The theory guiding this study was Vygotsky's sociocultural theory as it incorporates students' culture and social interactions with peers and teachers into the learning process (Slavkov, 2015).

## **CHAPTER TWO: LITERATURE REVIEW**

### **Overview**

A thorough review of literature was conducted to identify studies that explore the process of educating students who are D/HH and who also come from non-English speaking backgrounds, identified as DMLs. This chapter will provide an overview on the existing literature pertaining to the study. The first section will discuss the theory selected as a framework and how it relates to the central phenomenon of identifying educational practices involving DMLs. The second section will synthesize the recent literature pertaining to educators' practices involving DMLs.

### **Theoretical Framework**

Theories in qualitative research are used as a guide for the study and help to make sense of empirical observations that may seem unrelated (Galvan & Galvan, 2017). The theoretical framework provides a vision and structure that might otherwise be lacking for a research study (Grant & Osanloo, 2014). Vygotsky's sociocultural theory was appropriate for this study as it emphasizes the importance of one's culture and interactions within that culture (Vygotsky, 1978). Social interactions, an important part of the sociocultural theory, are beneficial as they promote thinking skills when directed by knowledgeable individuals (Vygotsky, 1978).

An important aspect of the sociocultural theory is the placement of students learning a second language (L2) in an educational environment where they receive experiences that encompass social, cultural and interpersonal skills (Vygotsky, 2012). The interactions that occur in this type of learning environment are experienced in what is known as the students' zone of proximal development (ZPD). The ZPD is an important concept related to sociocultural theory

as it serves as an indicator of what a child can achieve independently compared to what the child can achieve in collaboration with others (Vygotsky, 2012).

“Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with peers” (Vygotsky, 1978, p. 90). Shared learning experiences are especially important in the educational process of students who are DMLs as they build language through collaborative dialogue (Lin & Lo, 2017). By learning in a community social setting, DMLs have the opportunity to interact with students who may be more knowledgeable, and who can set an example through the learning process (Alqraini, 2018).

While building L2 skills, the sociocultural theory recognizes the need for a continued focus on students’ native culture (Vygotsky, 2012). Guardino and Cannon (2015) suggested several strategies related to the sociocultural theory and students who are D/HH. Providing interactions naturally related to students’ native culture may increase cognitive development and learning as they are influenced by adults and peers through the use of cultural beliefs and practices. Social and academic experiences should occur in context in an effort to increase students’ background knowledge and provide development in social, behavioral, and academic areas. The ZPD should include various learning opportunities that enhance knowledge and skills, and research related to DMLs should include a holistic approach rather than the individual student (Guardino & Cannon, 2015).

DeCapua (2016) recognized the importance of educators taking into account students’ cultural background and differences that may result in students appearing to be unmotivated in the learning process. However, DeCapua emphasized the importance of exploring students’ cultures, and advised educators to view L2 students as individuals who bring their own histories,

life experiences, and goals into the learning environment. The sociocultural theory was appropriate for research with DMLs to address the learner individually and as a whole (Guardino & Cannon, 2016).

In determining the most appropriate educational strategies for DMLs, educators should take into account the students' cognitive, social, and behavioral intricacies (Guardino & Cannon, 2015). By definition, DMLs are students born in another country where English is not the first language and who immigrate to America (Cannon & Luckner, 2016). DMLs who move to the United States attend English-speaking schools where they are exposed to the English language and a visual language, such as ASL, during instruction (Baker & Scott, 2016).

Regarding the sociocultural theory, as DMLs learn English and continue to use their native language, their communication skills may be improved through collaborative dialogue while learning content material (Guardino & Cannon, 2016). Activities that involve participation may lead to an increase in knowledge (Alqraini, 2018). The same is true as they use language in the process of developing ideas and concepts. (Lin & Yi Lo, 2017). DMLs may benefit from opportunities that provide language learning experiences in context. By building on background knowledge, students are able to develop socially and academically (Guardino & Cannon, 2015).

DMLs are not only multilingual, but also represent different cultural backgrounds. In relation to the sociocultural theory with DMLs, it is important to take into consideration the students' native culture, the culture of their family, as well as Deaf culture (Gallegos, 2017). Within the educational process, DMLs should be given the opportunity to interact not only with activities that enhance their English skills, but also to interact with their native culture (Valente & Boldt, 2016). By emphasizing only English, and not also reinforcing the students' native

language, students may not be able to communicate or identify with their families (Guardino & Cannon, 2015).

The premise of the sociocultural theory emphasizes learning that occurs within social interactions ingrained in cultural and historical contexts (Piazza, Rao, & Protacio, 2015). DMLs enter not only an English-speaking environment when they come to the United States, but for those who learn and rely on ASL for communication, they are also entering a new culture in the Deaf community (Baker & Scott, 2016). I sought to identify instructional strategies with DMLs using the sociocultural theory as a framework. Through this framework learning occurs not individually but with the guidance of teachers (Vygotsky, 1978).

Teachers play an important role in the learning process using the sociocultural theory as they create an atmosphere that emphasizes both culture and cognition through learning experiences (Lin & Lo, 2017). By combining the sociocultural theory with a constructivist approach, teachers are not only providing engaging learning activities, but they are also guiding their students as they become more autonomous in their learning (Nordlof, 2014). Pedagogy that is founded using a constructivist/sociocultural approach combines problem solving with a student-oriented cultural atmosphere (Armstrong, 2015). Although additional teacher training may be necessary to accomplish this type of atmosphere, research has shown constructivist teaching is effective (Panhwar, et al., 2016). Through this study, I sought to determine the extent to which the instructional strategies used with DMLs using the sociocultural theory as a framework also emphasize a constructivist pedagogical model.

A longitudinal case study was conducted and followed a female DML from kindergarten through the 12<sup>th</sup> grade. The student was very close to her family and did not want to attend the state's school for the deaf which was three hours away from her home. Instead, she was

educated in a public, mainstreamed school setting with the support of teachers of D/HH (TODHH), ASL interpreters, and ELL teachers. One of the research questions in the study asked about the strategies used in educating this student. The teachers interviewed recognized the need for the education of the student to include access to cultural and linguistic models that may enhance the student's academic performance. They felt the student, and other DMLs, would benefit from interactions with deaf adults (Baker & Scott, 2016). This integration of social and cultural interactions align with the premise of the sociocultural theory in an educational setting.

### **Related Literature**

This section gives background information related to DMLs, as well as an explanation of various processes involved in the education of DMLs. Literature related to the education of DMLs was synthesized to present the need for this research study. The purpose of this section is to present what has been examined in relation to the education of DMLs, what needs to be examined in relation to the education of DMLs, and how this proposed research study can further the understanding of educating DMLs.

### **Background and Needs of DMLs**

As the population of school-age bilinguals continues to grow with an increase of 150% from 1980 to 2013, so does the population of D/HH students who are DMLs. That demographic group is up to 35% of the total population of D/HH students in the same time period (Pizzo & Chilvers, 2016). According to the Gallaudet Research Institute (GRI) "Annual Survey of Deaf and Hard of Hearing Children and Youth" (2013), 19% of the DMLs served by schools in the United States are from Spanish-speaking homes. Determining the needs of these students may be more than determining their cognitive functioning level. Wright Moers (2017) found that some DMLs may have physical needs such as food and may hoard food because they did not

have enough where they came from. Other students may not know their name or their family's names. As the IEP team worked to establish the best plan for each DML, they took into consideration the following factors: "Where did they come from? What have they experienced? What did they leave behind? How did they get here? What happened during their move?" (Wright Moers, 2017, p. 46).

No matter the background language of DMLs when they come to English-speaking classrooms, most DMLs will acquire skills in both a signing system, such as ASL, along with the English language (Baker & Scott, 2016). DMLs are students who speak more than one language, sometimes several languages (Baker & Scott, 2016), or may be classified as "having no language" (de Garcia, 2013, p. 18) if they know a sign language other than ASL (de Garcia, 2013). As these students arrive and enroll in American schools, they are not only faced with learning one or more new languages, DMLs are also faced with the challenge of acclimating to a new culture that may consist of both the culture of the United States and Deaf culture depending on the opportunities available for each student (Guardino & Cannon, 2016). As previously discussed, the sociocultural theory is important as DMLs may benefit from the inclusion of social and cultural experiences incorporated in academic learning opportunities (Gallegos, 2017). The cultural and linguistic background and experiences DMLs bring to their English-speaking classrooms may be beneficial to all stakeholders if taken advantage of in learning opportunities (Cannon, et al., 2016).

Research with D/HH children is unique compared to research with hearing children, especially when research involves children who are not only deaf but are also multilingual learners. Sutherland and Young (2014) offered the following suggestions in regard to research with D/HH children: (a) D/HH children's preferred language should be used during research; (b) to

maximize contributions from D/HH children, a researcher who is deaf and who has flexible communication skills is desirable;(c) data collection tools used should offer children control in offering information and match the children's level(s) of maturity and emphasize fun (Sutherland & Young, 2014).

### **Eligibility Process**

The eligibility process for students who are DMLs involves various factors. States may vary slightly, but one example of the eligibility process for D/HH students includes: (a) an audiological evaluation; (b) speech and language performance evaluation; (c) school history and levels of learning or educational performance; (d) observation of classroom performance; (e) pertinent documentation related to the impact of the deafness or hearing impairment on the student's academic performance (Tennessee Department of Education, n.d.). In regard to a D/HH student who is also a DML, the process for determining eligibility as an ELL may also need to be completed depending on the local education agency's procedures.

The educational process for students who are D/HH may vary depending on the level of their hearing loss, the type of amplification used, and their mode of communication (Dostal, Gabriel, & Weir, 2017). According to the American Speech-Language-Hearing Association (ASHA), hearing is measured in decibels, and hearing loss may range from mild to profound (n.d.). ASHA recommends a hearing assistive technology system (HATS), such as an FM system, for students when they get their cochlear implant or hearing aids. An FM system allows the student to hear the teacher's voice over the other noise in the classroom, in addition to being able to hear their own voice (American Speech-Language-Hearing Association, n.d.).

Amplification used by DMLs may vary for each student. In addition to FM systems, amplification may include hearing aids and cochlear implants (Supporting Success for Children

with Hearing Loss, n.d.). Amplification may be used along with spoken language and sign language (Blom & Marschark, 2015).

In addition to amplification, educators should be aware of other accommodations and modifications which may benefit students with a hearing loss. Preferential seating, closing the classroom door to minimize noises in the hallway, and reducing classroom noise are several actions which may assist DMLs/D/HH students (Better Hearing Institute, n.d.). These, and other, accommodations and modifications should be discussed in each students' IEP meeting(s) with the IEP team which should include an audiologist, speech/language pathologist, teacher for the deaf, and others as appropriate (IDEA, n.d.).

ASL has already been discussed in this literature as a mode of communication. However, speechreading is another mode of communication which may be used by D/HH students. Although speechreading may not be the primary mode of communication for every D/HH student, one study found that students who were the most successful utilizing speechreading in the educational setting had the ability to predict what was coming in the conversation, deep analytical skills, and the ability to make connections with cause and effect relationships (Georgieva, Koleva, & Valchev, 2018). One other method which may be utilized in the educational process of DMLs is "total communication". Total communication is a communication method which incorporates spoken language and a signed language simultaneously (Alqraini, 2018).

DMLs are students who come from a home where English is not the language of communication (Cannon, et al., 2016). However, as determined on an individual basis, DMLs who are suspected of having a SLD in addition to their hearing loss may have to go through the Response to Intervention (RtI) process before becoming eligible to receive services from a

special education service provider-the same process implemented for their hearing peers (Choi, Oh, Yoon, & Hong, 2012). A “strength-based RtI model for developing and identifying gifted potential ELLs” (Ford, Coleman, & Davis, 2014, 133-134) has been proposed, but the current model seeks to identify students who may benefit from varying levels intervention. The RtI process consists of three tiers of intervention that are provided based on each students’ needs. Tier I occurs in the regular education classroom with the regular education teacher providing instruction in a large-group setting. Tier II also occurs in the regular education classroom with a regular education teacher, but in a small-group setting which provides more intensive intervention for the students who require this level of assistance. Tier III occurs in a small-group setting that may be outside of the regular education classroom with an interventionist providing instruction in either reading/literacy or math, and progress monitoring is done regularly to collect data related to student growth or lack of growth (Luckner & Pierce, 2013). Throughout all levels of intervention, the service provider collects data for each student. The RtI team uses the collected data to make recommendations related to transitioning students from one tier to another, or to proceed with a referral to the special education team (U.S. Department of Education, n.d.).

Although the RtI process is used with all students in determining a need for intervention, caution and consideration should be taken with students who are ELL (Choi, et al., 2012). Professional development may be necessary for teachers and other school faculty involved in the RtI and special education process (Armendariz & Jung, 2016). Students who are acquiring English skills, including DMLs, may display characteristics which appear in students with disabilities (SWD); (Scott, Hauerwas, & Brown, 2014). Intervention may begin as early as kindergarten and, for students who are later determined to have an SLD, may be the beginning of

the process leading to eligibility for special education services (O'Connor, Bocian, Beach, Sanchez, & Flynn, 2013).

Educators working with ELLs may lack the necessary knowledge related to language acquisition needed to both assess and educate these learners. Thus, the population of certain groups of ELLs found eligible for special education services is disproportionately represented (Motamedi, Cox, Williams, & Deussen, 2016). DMLs who come to the United States and attend an American school may also be mistakenly categorized as having a learning disability due to the IEP team's inability to accurately assess the student. However, Morgan, et al. (2018) recently found that ELLs overall may be under identified rather than over identified. DMLs, IEP teams, and LEAs may benefit from collaboration with sign language interpreters who are familiar with the signed language(s) being used, or with d/Deaf adults who are familiar with the signed language of interest to gain an appropriate assessment of the functioning level of the DML (de Garcia, 2013).

When DMLs come to America and are assessed by their IEP team, the results of their assessment may not reflect an accurate portrayal of the students' ability. Wright Moers (2017) explained an experience she had with a DML who was thought to have a 63 IQ and no functional language. The student came from a dangerous part of the world and to stay safe he chose to remain in the background to avoid being noticed. However, during the first few months at his new school the student had the opportunity to adjust to his new environment and to accept the fact that he was safe. As the student felt more and more comfortable, his cognitive abilities were demonstrated as he described various experiences and completed complicated mathematical equations (Wright Moers, 2017). Students may also feel more comfortable as they are able to express themselves through a preferred communication method.

## **Communication Methods**

Students who are D/HH may communicate in a variety of ways, both verbally and nonverbally (Isaković & Kovačević, 2015). ASL, Signing Exact English, and speech reading are among some of the communication methods used (National Association of the Deaf, n.d.). As previously stated in the eligibility section, some programs may incorporate total communication to use spoken language and signs simultaneously (Alqraini, 2018). Students who are hard of hearing may choose to rely on speech reading rather than a signed language. For DMLs who rely on speech reading, even when provided an interpreter in their native language, difficulties may arise due to different pronunciations or accents (Wright Moers, 2017).

ASL is a visual language which incorporates cognitive benefits and may be considered the most appropriate for many DMLs (Baker & Scott, 2016). In addition, ASL is a visual language which appropriately conveys concepts (National Association of the Deaf, n.d.). As DMLs are exposed to ASL, they are also encouraged to continue learning about their native culture and to continue using their native language (Baker & Scott, 2016). This connection with students' native language and culture reinforces the sociocultural theory framework in this study (Guardino & Cannon, 2015). As DMLs are placed in their educational setting, the educational team should not assume that the student automatically understands ASL just because they are familiar with their country's signed language. However, DMLs who are familiar with another signed language may have the ability to acquire ASL faster than those who are not familiar with another signed language (Wright Moers, 2017).

Early acquisition of language plays a significant role in cognitive flexibility and may increase cognitive functioning in the area of the brain associated with spoken and signed languages (Pizzo, 2016). A child's early access to language, a visual sign language or an

auditory language, may lead to improved reading skills (Andrews & Wang, 2015). Early acquisition of language for both D/HH and for DMLs may be limited due to the lack of auditory input that their hearing peers are exposed to from birth through hearing conversations between their parents and others around them, watching television, and any other auditory experiences (Alqraini, 2018).

For DMLs who master more than one language, such as their native language and their native sign language, higher executive functioning may be evident (Kuhl, 2010). Mastering more than one language may also lead to strong cultural identities, stronger self-confidence, and students may experience acceptance of themselves as members of their native culture and the Deaf community with support from that community (Pizzo, 2016). Cross-language transfer may occur when a student's prior knowledge of one language (L1) influences their acquisition of another language (L2), and their ability to read in the second language (Vygotsky, 2012).

Not only does early acquisition of language play a significant role in cognitive flexibility and increased cognitive functioning (Pizzo, 2016), but research suggests the importance of language acquisition for D/HH children as they benefit from early exposure to ASL (Bourne-Firl, 2016; Guardino & Cannon, 2015; Scott & Hoffmeister, 2017). Children who are exposed to ASL later in life may not only struggle to develop native-like ASL skills, but also may struggle with the English language more than their peers who experienced earlier ASL exposure (Scott & Hoffmeister, 2017). The NAD supports and recommends exposure to ASL as soon as possible once a child's hearing loss is identified (n.d.). The NAD's position states, "Acquisition of language from birth is a human right for every person, and that deaf infants and children should be given the opportunity to acquire and develop proficiency in American Sign Language (ASL) as early as possible" (NAD, n.d.).

Determining appropriate communication methods for students who are DML should be a joint effort with parents and educators and may change as the child grows older and determines their amount of involvement in the d/Deaf community (Pizzo, 2016). Depending on the child's level of hearing loss, a combination of oral communication and signed communication may occur (Alqraini, 2018). However, educators must also take into consideration the family's desire to continue developing their native language (Guardino & Cannon, 2016). Bowen (2016) found that although families surveyed desired their DMLs to be trilingual with English, Spanish and sign language, educators often recommended sign language and spoken English without a focus on native language. No matter what communication method is chosen, parent involvement is important (Gallegos, 2017).

### **Parent Involvement**

Parental involvement with DMLs is very important in relation to the sociocultural theory framework (Gallegos, 2017). This theory emphasizes the importance of keeping one's culture and language a priority even when engaging in a new culture (Guardino & Cannon, 2015). Parents of DMLs may not realize the crucial role and impact of their involvement, or lack of involvement, in their child's language development and future academic success (Hendar & O'Neill, 2016). Gallegos (2017) explains the importance of family at the NMSD. This is evident in the fact that they have accommodations for family housing as students transition to the residential program when they are ready. The NMSD also has ASL classes for families. Involvement of families for D/HH children is extremely important, especially for those with hearing parents (Wang, Andrews, Liu, H., & Liu, C., 2016). Services for D/HH students begin in the home with professionals coming to the houses for training from the time a child's hearing loss is identified continuing through preschool age (Gallegos, 2017).

Providing an opportunity for parents of DMLs to visit the school and classroom of their child may assist in the transition process, especially for early elementary DMLs entering an American school for the first time (Gallegos, 2017). One study revealed 6 out of 10 parents/participants had a total of 10 opportunities to visit their child's classroom and meet their teacher and principal before the school year began. Not only did these parents meet school personnel, they also had the opportunity to meet parents of other students in the D/HH program (Curle, et al., 2017).

Parent involvement is important no matter the socioeconomic class of each family and may lead to greater student success (Durišič & Bunijevac, 2017). One study, Project ASPIRE, pilot tested a program which assisted families in the process of parent intervention. The study consisted of 11 parents of children who not only had a hearing loss but who were also considered to be from underserved populations. The underserved populations included in this study included families of low socioeconomic status or families who speak English as a second language. Throughout the study, parents were taught the importance of their responsibility to provide a language-rich environment for their child/children (Sacks, et al., 2014).

Using quantitative linguistic feedback with parents involved in Project ASPIRE, and by providing intervention from an educator of the deaf, parents were shown the importance of providing language to their child in their home. After the Project ASPIRE intervention, the amount of words spoken by the adult in the study, the adult word count, increased by approximately 20%. The conversation turn count increased significantly, up 53% from the baseline data. The child vocalization count increased 43% from the baseline. Project ASPIRE is an example of what can happen when parents are intentional about providing a language-rich

environment for their child no matter their socioeconomic or cultural background (Sacks, et al., 2014).

### **Early Intervention Services**

Parent involvement, ideally, begins through early intervention services (Yoshinaga-Itano, 2013). “Collaboration with families and communities is vital to effective and efficient services that meet the intricate needs of children who are Deaf with Disabilities” (Guardino & Cannon, 2016, p. 107). In addition to early intervention, children who are identified as being D/HH benefit from opportunities to interact with D/HH role models who provide language and cultural interactions. Roberson and Shaw (2015) recommended that families of D/HH children seek out d/Deaf senior citizens to serve in the role of language models as children and their families are exposed to ASL. Families who live in rural areas may benefit from interactions via technology such as video phones, online ASL courses and practice, and video conferencing (Guardino & Cannon, 2016).

Early intervention services should begin at the point of identification and continue through the child’s third birthday when children are eligible to begin services through their LEA (Yoshinaga-Itano, 2013). These services are important in the effort to avoid further language delays and/or developmental delays that may have occurred from birth until the time of identification (National Association of the Deaf, n.d.). Children under the age of three who are receiving early intervention services will have an Individualized Family Service Plan (IFSP), which is much like an IEP for students enrolled in an elementary through high school setting (U.S. Department of Education, n.d.). An IFSP should include an explanation of interventions services that will be provided, and focus on the child’s “physical, cognitive, communication, social-emotional, and self-help skills” (Bowen, 2016, p. 34).

In an effort to identify children with hearing loss, and to begin services as soon as possible to begin the process of language acquisition, IDEA Section 303.13 (IDEA, n.d.) mandates early intervention services at no cost to eligible families. Services for families of a child with a hearing impairment include:

1. Identification of children with auditory impairments, using at-risk criteria and appropriate audiologic screening techniques.
2. Determination of the range, nature, and degree of hearing loss and communication functions, by use of audiological evaluation procedures.
3. Referral for medical and other services necessary for the habilitation or rehabilitation of an infant or toddler with a disability who has an auditory impairment.
4. Provision of auditory training, aural rehabilitation, speech reading and listening devices, orientation and training, and other services.
5. Provision of services for prevention of hearing loss.
6. Determination of the child's individual amplification, including selecting, fitting, and dispensing appropriate listening and vibrotactile devices, and evaluating the effectiveness of those devices. (Early Intervention Services, n.d.)

### **Impact of Families' Cultural Preferences**

Although early intervention services are available to families of children who qualify, parents of children who are DMLs may or may not want to participate in these services due to their cultural preferences (Gallegos, 2017). It is imperative that educators, whether serving in early intervention programs or in pre-kindergarten through 12<sup>th</sup> grade programs, demonstrate an understanding of the importance of language and culture for these unique learners. Without this understanding, the intervention and educational processes may be impacted (Bowen, 2016).

Communication preferences (communication through ASL or oral communication) are another important aspect in the program planning process of DMLs. Their religious and cultural background should be respected as well (Wright Moers, 2017).

One other factor related to academic achievement is motivation. Motivation is an important factor in the educational process and may be a factor in the process of literacy development and different levels of achievement among Latino families without regard to their family's educational background or socioeconomic status (Herzig, 2014). The amount of motivation demonstrated by a DML, along with higher amounts of reading, may impact their success in literacy skills (Andrews & Wang, 2015).

### **Preparation and Training for Educators of DMLs**

Teacher preparation programs designed to train prospective TODHH students should include skills to meet the unique needs of DMLs (Sarchet & Trussell, 2017). The education of DMLs may occur in a residential program at a school for the Deaf or in an inclusive program at a mainstream school. Future educators would benefit from exposure to each type of program during their collegiate training (Engler & MacGregor, 2018). Programs for D/HH students vary but most include a focus on “language, literacy, consultation, audiology, speech pathology, aural rehabilitation, and sign language, in addition to instructional strategies” (Cannon & Luckner, 2016, p. 90). Taking into consideration the unique learning needs of D/HH students is important as educators prepare to teach. Educators of D/HH and DMLs must not only have a knowledge of deafness and related issues but also of general education teacher preparation standards (Arter, DeMatteo, & Brown, 2015).

Classroom arrangement for students with a hearing loss is different than that of a classroom with students who are hearing. A crescent-shaped table, or a classroom with students

in a semi-circle setting arrangement, allows all participants to see the signs being used for communication. Posters on the walls and classroom library materials should incorporate ASL vocabulary and Deaf culture as they encourage English language development (Horejes, 2012). Classroom noise is a factor as well because students with a hearing loss may encounter a distorted auditory signal even with amplification (Grempe & Easterbrooks, 2018).

Schools serving D/HH students vary in their educational theories and also in their educational strategies. One method which incorporates both ASL and English is referred to as bilingual/bicultural education (Gibson, Small, & Mason, 1997). This method aligns with the sociocultural theory as it incorporates Deaf culture with the acquisition of English (Cannon & Luckner, 2016). A method of presenting and academics may be through problem-based enhanced-language learning. This strategy incorporates problem-based learning activities for academics that also promote language development (Rillero, Koerner, Jimenez-Silva, Merritt, & Farr, 2017). No matter the instructional strategy used, providing a Free Appropriate Public Education (FAPE) to DMLs in their Least Restrictive Environment (LRE), in addition to considering their unique academic needs, is a process which educators of DMLs must be familiar with, and should be reviewed in teacher preparation programs (Baker & Scott, 2016).

One issue relevant to the teacher preparation programs for teachers of DMLs is the lack of diversity of candidates. Although the population of DMLs continue to increase (Pizzo & Chilvers, 2016), the field of TODHH would benefit from more diversity. DMLs, like other students, may benefit from teachers who serve as role models for their culture and language (Cannon & Luckner, 2016). If D/HH educators are not available in an area, d/Deaf role models may be invited into the educational setting as appropriate. Senior citizens who are d/Deaf may serve as a volunteer in an educational setting, giving them the opportunity to share both their

language and their cultural experiences (Roberson & Shaw, 2015). A Deaf language model was written into a student's IEP in Colorado in place of ESL classes. The Deaf language model, who works in conjunction with a sign language interpreter, is provided for international students who are DMLs (Wright Moers, 2017).

No matter the ethnicity, or whether the educator is D/HH or hearing, of potential future educators of DMLs, teacher training programs should provide training related to the needs of these unique learners. Educators of DMLs may encounter students who have had to flee from adverse living situations or other stressful experiences that could have an impact on the learning process. The population of DMLs continues to grow but the teacher training is not keeping up with the changes (de Garcia, 2013). Relevant training for future teachers of DMLs is necessary (More, et al., 2016) as well as training for school leaders who will support teachers of DMLs/ELLs (Baecher, Knoll, & Patti, 2016).

### **Focus on Culture and Language**

Teachers of DMLs not only need to acquire knowledge related to teaching D/HH students, but they also would benefit from training related to teaching students who are English Language Learners (ELLs), especially related to cultural differences (Cannon & Luckner, 2016). Continuing with the theory of the sociocultural framework, educators of DMLs would benefit from an understanding of the importance of culture and how that able culture influences the perceptions of students and their family members as related to the educational process. Cultural barriers may exist, but teachers with an understanding of cultural differences may be able to eliminate the barriers and proceed to academic progress (More, et al., 2016). Teachers of DMLs have potential language barriers if the student does not know English or ASL. However,

teachers are encouraged to focus on what the student is able to do, not focus on the language barrier that may lead to inaccurate perceptions about the students' abilities (Allen, 2017).

When presenting opportunities that provide language learning experiences, educators of DMLs must be cognizant of the fact that holidays celebrated in the United States may not mirror holidays celebrated in the native countries of their students. Wright Moers (2017), a teacher of DMLs, wrote about an experience she had when working with her students during a Halloween activity. A DML from Cambodia asked questions about pictures presented that represented different images related to Halloween. Wright Moers (2017) found it difficult to explain witches are not real, but are “scary creatures who fly around in the air on brooms” (p. 45), and that zombies are also not real, but are “dead bodies that rise up to haunt those who are still living” (p. 45). Building knowledge and vocabulary through collaborative experiences is important (Guardino & Cannon, 2016), but also may stretch the imagination of the educator.

Many schools for the Deaf in the United States offer a residential housing program for students who live too far away from the campus to commute each day. By moving on to the campus of a school for the Deaf, students are immersed in ASL throughout the day in their classrooms, and outside of the classroom in the residential dorm setting (National Association of the Deaf, n.d.). Not only are teachers at the school fluent in ASL but also the dorm workers. This immersion allows students to quickly acquire ASL, and experience Deaf culture firsthand (Gallegos, 2017).

Although students living at a school for the Deaf are inundated in Deaf culture (National Association of the Deaf, n.d.), making the decision for a child to move away from home at an early age is difficult for many families. The New Mexico School for the Deaf (NMSD) provides one solution to the difficulty of this transition issue. During the transition period, families are

given the opportunity to live in NMSD's family housing. This time allows the student and their family to adjust to the school and also provides ASL training for the entire family (Gallegos, 2017).

The NMSD emphasizes not only Deaf culture but also the culture of their students, many of which are Navajo Indians. Culture is an important focus in school plays, musical productions, and other extracurricular activities. By promoting the importance of culture, the school faculty is able to develop trust with the families while decreasing prejudice. Trust is also developed and maintained as families are provided with interpreters for school meetings and events. One example of this is having PowerPoint presentations used for parent meetings displayed in both English and Spanish, with one screen displaying each (Gallegos, 2017). The assessment process is an example of a time when the school will need to provide an interpreter for the DML and for the parents/guardian when it is time to discuss assessment results.

### **Assessment Process**

The purpose of the initial IEP meeting for any student is to determine the LRE which is able to meet the unique needs of each individual student, while focusing not only on academics, but also on the communication needs of each student (United States Department of Education, n.d.). Several factors must be considered both during the initial IEP process and in recurring annual IEP development. For DMLs coming to school in the United States, communication needs and the child's and family's preferred mode of communication must be discussed along with their linguistic needs. The severity of hearing loss and potential for using residual hearing is an important factor for DMLs because services may be altered depending on the amount of usable hearing the student has (United States Department of Education, n.d.). Speech-language pathologists (SLP) working in the educational setting may assess each DML through the use of

language samples with the goal of developing the best plan to aid in communication development (Blaiser & Shannahan, 2018). The academic level of each DML will be a factor in determining the amount of special education hours each student requires to meet their needs. Lastly, the social, emotional, and cultural needs are considered as opportunities for peer interactions and communication are part of the overall learning process (United States Department of Education, n.d.).

The IEP team must also discuss possible accommodations and/or modifications each student may require to meet their educational needs regarding completing the assessment process (U.S. Department of Education, n.d.). For DMLs, there are several factors which must be considered. Student assessments, whether teacher-made or standardized, are discussed during a student's IEP meeting, especially in determining whether or not the assessment process should include accommodations or modifications (IDEA, n.d.).

The appropriateness of the language used in the assessment process is a factor that should be taken into consideration. Some students may be considered as having no language because they do not know ASL (Wright Moers, 2017). However, the team must use caution as this may lead to an inappropriate educational placement if the student is not given a valid opportunity to demonstrate their level of knowledge due to the lack of the team understanding their communication language (de Garcia, 2013). For DMLs who have residual hearing that allows them to communicate verbally and auditorily, a translator of their native language may be the most appropriate accommodation for their assessment process (de Garcia, 2013). Test bias related to culture and language should also be discussed. "DMLs may be accustomed to aspects of home cultures that are inconsistent with those of the culture on which the assessment was standardized, and thus be vulnerable to bias" (Pizzo & Chilvers, 2016, p. 59).

Another factor that should be considered related to the assessment process of DMLs is providing read-aloud services for students who communicate using ASL (Pizzo & Chilvers, 2016). When an ASL interpreter signs a test to a student, they may be inadvertently prompting the student towards the correct answer. The interpreter's role should be determined before administering an assessment (Laurent Clerc National Deaf Education Center, n.d.). During the process of using ASL to interpret assessment items, signs used may resemble pictures of a test item or answer choice. If a student has a multiple-choice test item, the sign used may be a clue that provides guidance to the answer. The interpreter or educator signing assessment items must be careful not to inadvertently change the level of difficulty or modify the content during the process. More research in this area is needed (de Garcia, 2013; Pizzo & Chilvers, 2016). Training related to providing appropriate accommodations may be necessary for educators and other school personnel who are involved in the educational process with DMLs (Baker & Scott, 2016).

### **Cultural Bias**

Along with an understanding in the importance of language and culture, educators must be aware of any existing cultural biases which may impact their ability to serve these children and their families (Gallegos, 2017). An example of a cultural bias which educators may exhibit is emphasizing only one language be spoken in the home (Bowen, 2016). Although communication may be difficult during the early phases of interaction, research shows the benefits of learning more than one language. DMLs often have skills in two or more languages and many of these parents feel their child(ren) benefit from learning multiple languages (Guardino & Cannon, 2016; Bowen, 2016).

Educators of DMLs may experience varying behaviors, and communication methods, that may result in misinterpretations and misunderstandings among cultures in their classrooms (Cannon & Luckner, 2016). Educators may reduce cultural bias within their classroom setting by being intentional in becoming familiar with their students' background culture and learning about the geographic area they are from. Cultural differences may include: students' view on making and keeping appointments, foods that are restricted in various countries, and various actions, such as showing the soles of shoes (Middle East), that may be offensive in students' native countries (Wright Moers, 2017). One educational strategy found in research allowed students to share about themselves and their backgrounds. This practice gave the students a sense of pride and belonging in a controlled setting that led to feelings of appreciation by their teacher (English, 2018).

Parental involvement is another area that educators must be intentional in reducing cultural bias. In order for parents to be involved in their child's educational process, information should be available in the language the parents can understand. Not only should this include language translators/interpreters for IEP meetings but also written material which is conceptually accurate for the language it is representing (Bowen, 2016; Gallegos, 2017). The NMSD's accommodation of providing PowerPoint presentations in both English and Spanish is an example of how this accommodation can be accomplished (Gallegos, 2017).

Parental involvement is important for all children (Durišič & Bunijevac, 2017). However, it is of utmost importance for hearing parents of DMLs (Cannon, et al., 2016). Hearing parents of DMLs may have no knowledge of Deaf culture, ASL, or how to support their child in this new environment and culture. By supporting their child through language acquisition, exposure to native language and culture, in addition to Deaf culture and ASL, and by

providing support in social development through extracurricular activities, parents may foster language development for all family members (Wang, Andrews, Liu, H., & Liu, C., 2016).

### **Educator Perception**

As previously discussed, educators of DMLs must be cautious about exhibiting bias toward a particular language or culture (Guardino & Cannon, 2016). Issues of bias may also be evident in the assessment process through language used and concepts tested. These same biases may be evident in standardized testing which are designed to be administered the same way each time it is given (ETS, n.d.). An example of standardized test bias may include administering a test to an English learner who is not capable of understanding the complex directions which are given in English. If the student cannot understand the directions and what is expected, they may not be able to perform to the level of their actual ability (Pizzo & Chilvers, 2016).

An alternative assessment method to standardized testing that may benefit educators and students is informal assessments. As educators become more familiar with DMLs' culture and language, they may be able to complete informal assessments through the use of student work, observations, checklists, etc. (Al- Ruqeishi & Al-Humaidi, 2016). These will only be beneficial, however, if the educator makes the effort to gain understanding of the cultural and language background of their DMLs. Without this knowledge, bias may result in the assessment outcome (Pizzo & Chilvers, 2016; Guardino & Cannon, 2016).

Educators of DMLs must keep in mind the perspective of their students as they are expected to learn English as well as ASL when they are entering their English-educational environment with their native language and possibly a signed language. With this consideration, students will be exposed to four languages (Baker & Scott, 2016). It is important that educators recognize the communion of content, language, and knowledge rather than hierarchy of one

being more important than the other (Rodrigues & Beer, 2016). Throughout the educational process, DMLs may be using language skills gained in learning one language as they acquire another language. “A subsequent body of research shows that the linguistic competencies gained in the first language (L1) have an influence on how one learns to read in one or more additional languages” (Wang, et al., 2016, p. 68).

### **Teaching Literacy Skills**

Literacy skills for ELL students may vary depending on their literacy skills in their native language, identified specific learning disability/disabilities, literacy training in both their native and non-native languages, background knowledge, and the ability of their teacher (Boon & Barbetta, 2017). For ELL students who are also SWD, accommodations may be established that aid the student in the learning process. Examples of appropriate accommodations are visual cues, graphic organizers, additional time for assignments and assessments, read-aloud for assessments, clarifying assessment directions, and dividing assessments and assignments into small chunks rather than administering the entire assessment or assignment in one sitting (Cheatham & Barnett, 2017).

Students who are DMLs may have similar literacy concerns as their ELL peers, but also have factors related to phonemic awareness (Andrews & Wang, 2015). Research has shown a significant risk for poor reading outcomes for all children with a hearing loss (Camarata, Werfel, Davis, Hornsby, & Bess, 2018). Vocabulary knowledge is an important variable in reading comprehension and reading success (Alqraini, 2018).

As educators build vocabulary to enhance reading comprehension, teaching strategies and methods vary. One teaching strategy found in research included a teacher of D/HH students simultaneously reading and signing a story (that was displayed through a PowerPoint

presentation) to a class, listing unknown vocabulary, defining the unknown vocabulary with an example and describing the pronunciation of the word with visual phonics, and then re-reading the story and asking comprehension questions (Alqraini, 2018). While this method of teaching vocabulary involves repetition, that the teacher felt was necessary and beneficial for the students, the researcher questioned the method, and determined the repetition of the vocabulary simply placed the words in the students' short-term memory rather than extending the students' vocabulary knowledge (Alqraini, 2018).

Another study involving D/HH classrooms focused sought to identify teaching strategies related to vocabulary acquisition. The teacher used PowerPoint to display the literature being used in order for the students to see the story and watch the teacher sign simultaneously. Recurrent activities were reading storybooks, listing and defining unfamiliar vocabulary, rereading the story, and asking comprehension questions to assess the students' understanding (Duncan & Lederberg, 2018). Use of an interactive whiteboard may be used much like a PowerPoint as students are able to view literature while being signed. However, interactive whiteboards allow educators to incorporate activities involving technology and literature that may pique the interest of SWD (Ting, 2014).

DMLs' literacy development may be impacted by motivation, or lack of motivation, both from within themselves or from their families (Andrews & Wang, 2015). As previously mentioned, motivation is an important factor in the acquisition of literacy skills no matter the family's status or educational background (Herzig, 2014). Reading proficiency may be increased by greater motivation. The amount of reading DMLs complete also influences reading proficiency (Andrews & Wang, 2015). However, DMLs may struggle with vocabulary that is lacking, and that impacts the ability to comprehend what is being read (Alqraini, 2018).

Along with motivation, DMLs' attitude toward language may impact their use of that language in the school setting and in their community (Herzig, 2014). Herzig (2014), a teacher of DMLs, found that her students felt reading was for school and not important in their lives outside of the school setting. To focus on changing students' attitudes towards reading, Herzig (2014) suggested several strategies. An initial strategy is for instructors of DMLs to complete a reading inventory to determine students' reading outside of the classroom. In an attempt to increase the amount of student reading, allow students to read acceptable material which is of interest to DMLs (song lyrics, magazines, Internet, etc.). Demonstrate use of reading in social lives by having popular, age-appropriate literature material which students will want to discuss with each other. When teaching compare and contrast, use books which are movies or will be movies. Before reading literature, discussing new/unknown vocabulary will promote understanding of the text. Finally, practice predication skills by using narratives or short stories (Herzig, 2014).

The acquisition of literacy skills that are age-appropriate is an issue among DMLs (Dostal, Gabriel, & Weir, 2017). Although there is a lack of research related to literacy skills with DMLs (Pizzo, 2016), research with D/HH students has revealed the median reading ability at the 4<sup>th</sup> grade level for students leaving secondary school and only ten percent of D/HH students developing age-appropriate skills (Dammeyer, 2014). Dammeyer (2014) found that the sign language skill level of a student correlated with the student's literacy skill level. Reading achievement was also associated with the students' exposure to fluent sign language at an early age. This may be achieved by a student having Deaf parents, or associating with the Deaf community (Dammeyer, 2014).

Scott & Hoffmeister (2017) also found a strong correlation between ASL proficiency and literacy skills, word reading fluency in particular. “Research in the field suggests that D/HH children who are exposed to ASL later in life not only do not develop native-like proficiency in ASL but also struggle more with English than children who are exposed to ASL earlier” (Scott & Hoffmeister, 2017, p. 59). Not only does early exposure have an impact on literacy skills but also on their writing skills. However, one important factor to consider in D/HH students’ literacy and writing skills is the ASL skills of the student and their parents (Baker & Scott, 2016). By developing fluency in ASL, parents are able to interact with their children and help in advancing their academic skills (Baker & Scott, 2016; Scott & Hoffmeister, 2017).

Strategies for teaching literacy to DMLs vary according to the literature. An educator of DMLs at the Arizona School for the Deaf in Tucson explained her students not only needed words in print in English, but also in their native language (Wright Moers, 2017). The students may have known a sign for a word but could not recognize or name the word in written print. To assist her students, her word wall consisted of words in the students’ L1 which was Spanish, as well as English, their L2. Wright Moers (2017) makes this accommodation for all of her DMLs and has educated DMLs from a variety of different countries.

With a thorough explanation of expectations and instructions for use, blogging may also be a useful instructional tool for students learning English. Blogs allow students to create posts and respond to classmates’ posts incorporating not only English skills but also academic skills and technology skills (Featro & DiGregorio, 2016). Educators of students learning English must be prepared with a variety of strategies based on the level of English proficiency and the cultural background of each student. Beginning English acquisition may focus on high-frequency words

while more advanced learning may incorporate complex sentences (Madrigal-Hopes, Villavicencio, Foote, & Green, 2014).

Although the population of DMLs continues to rise (Pizzo & Chilvers, 2016), research related to instructional strategies for DMLs is lacking (Baker & Scott, 2016; Bowen, 2016; Cannon, et al., 2016; Cannon & Luckner, 2016; Guardino & Cannon, 2016; Paul, 2016; Pizzo, 2016; Pizzo & Chilvers, 2016). This research study was conducted with a team of professionals and educators who have been involved in the educational process of DMLs for three or more years. I explored instructional strategies used by this team compared to those already identified through my review of the literature. By conducting this study, I have filled a gap in research with the identified instructional strategies that are discussed in the final two chapters of this dissertation.

### **Summary**

DMLs are students who come to the United States from varied backgrounds who have to become acclimated to the educational process of America while being exposed to English and ASL or another communication method as determined by his or her parents and/or his or her educational team (Pizzo & Chilvers, 2016). DMLs' background experiences may have an impact on the learning process. Educators of DMLs must take this into consideration as they plan their learning activities and must be cognizant of the fact that trust may need to be established before the DML will buy-in to the educational process (Wright Moers, 2017).

Educating students who are DMLs involves many factors. The first factor is the eligibility process that involves determining appropriate assessment methods including potential accommodations and modifications; communication mode(s); assistive technology; appropriate IEP goals; and ensuring special education teachers, general education teachers, and all

stakeholders have an understanding of the educational process for a student with a hearing loss. Educators work together with the IEP team that includes parents/guardians, the student (depending on their age), an LEA representative, a teacher of the D/HH, a regular education teacher, an audiologist, a speech language therapist, and any other member relevant to that student. This process is similar to the eligibility process for other SWD. However, establishing an educational plan for a student with a hearing loss who is also an ELL involves greater consideration to meet the student's needs. DMLs may know a sign for a word but not know how to write the word. They may also not know their own name or the names of their family members (Wright Moers, 2017).

The acquisition of ASL at an early age has been a recurring theme throughout this literature review (Baker & Scott, 2016; Dammeyer, 2014; Gallegos, 2017; Scott & Hoffmeister, 2017). The literature emphasizes the benefits of students acquiring ASL skills as well as their parents as they support their child in their educational process (Gallegos, 2017; Scott & Hoffmeister, 2017). ASL acquisition may occur in the classroom setting for DMLs who do not have D/HH relatives. However, DMLs may benefit from interactions with D/HH adults who communicate through ASL. Interactions with the Deaf community provide not only language exposure but also cultural experiences (Roberson & Shaw, 2015).

DMLs bring varied experiences into the educational setting. Educators have the opportunity to highlight those varied backgrounds and experiences during their learning activities. As the sociocultural theory emphasizes one's culture and interactions within that culture (Guardino & Cannon, 2015), an emphasis on both the Deaf community and culture, and the students' native language and culture, may become aspects of the educational process. By

incorporating DMLs' cultural and language differences into the learning environment, cultural bias may be reduced among students.

Cultural bias may arise among students, parents, and educators. Educators of DMLs play an important role in reducing cultural bias but may benefit from training beginning during their teacher training program (Cannon & Luckner, 2016). Schools that include DMLs in their student population may benefit from training that addresses the cultural origins of their students, and how to avoid demonstrating bias in the educational setting (Gallegos, 2017).

Literacy development among DMLs may be impacted by students' motivation and attitude (Herzig, 2014). Educators may use a variety of strategies to convey messages and vocabulary being presented. Strategies may include pictorial representations of vocabulary or story meaning, word walls which include vocabulary in the DMLs' L1 and L2, or providing Deaf language models who work alongside sign language interpreters to assist in conveying the message presented (Wright Moers, 2017). However, students should be challenged beyond merely memorizing words and meaning. They should be encouraged to use higher order thinking as they progress in literacy development. Students' breadth of vocabulary, the amount of words known, and depth of vocabulary, their ability to use the vocabulary within context, should be challenged as the literacy development process proceeds (Alzraini, 2018).

Few studies have been conducted to explore instructional strategies related to educating DMLs (Cannon, et al., 2016; Guardino & Cannon, 2016). Thus, this study was necessary to provide relevant information to educators of DMLs. The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary

school in the southeast. With few studies focused on instructional strategies involving DMLs, this study will contribute to the empirical research (Baker, et al.).

## **CHAPTER THREE: METHODS**

### **Overview**

This single case study explored the instructional strategies used by educators of DMLs at an elementary school in the southeast. Through this exploration, I sought to identify instructional strategies that may be appropriate to generalize for DMLs in other settings. DMLs are a growing population (Pizzo & Chilvers, 2016). However, research related to instructional strategies is lacking (Baker & Scott, 2016; Guardino & Cannon, 2016; Paul, 2016; Pizzo, 2016). Chapter Three provides an overview of the study's methods. This chapter begins with a thorough description of the study's design. Following the design, the research questions are restated. Next, the setting is described in detail as well as the participants involved in the study. The procedures section includes a description of the process involved in the study. The researcher's role section clearly states my involvement in the study. Data collection methods for this study include interviews, observations, and a focus group. Each of these methods are described and a connection is made as to the relevance to this study. Data analysis appropriate for this study is described in the next section. Trustworthiness involves credibility, dependability and confirmability, and transferability. Each of these areas are explained and related to this study. Ethical considerations in regard to this study are described and the chapter ends with a summary of this chapter.

### **Design**

A qualitative single case study design was used to explore instructional practices involving DMLs in an attempt to identify instructional strategies appropriate for this unique population (Pizzo, 2016). A qualitative research method was chosen to conduct the study and data collection in a natural setting as the instructional process with DMLs occurs (Patton, 2015).

A single case study design was chosen because it allowed me to gain information in a natural setting with a common case in an everyday situation such as the classroom (Yin, 2014), while taking into consideration the unique individual needs of D/HH students (Cannon, Guardino, Antia, & Luckner, 2016). Yin (2014) stated that a single case study is appropriate for several reasons including “extreme or unusual circumstances” (p. 56). The education of DMLs is unusual because it involves a unique population that lacks research (Pizzo, 2016). This case for this study was defined as professionals and educators involved in the instructional process of DMLs. The professionals and educators involved included classroom teachers, a speech/language pathologist (SLP), a speech/language pathologist assistant (SLP-A), an educational audiologist, an LEA representative who is familiar with the needs of DMLs, and others. Although each participant provides a different role in the educational process, all work at the same school with the same students.

This design was also chosen in consideration of the sociocultural theory. Vygotsky’s sociocultural theory is appropriate for this research design as it considers the importance of culture and interactions within a culture (Vygotsky, 1978). While observing DMLs in an educational setting with professionals and educators of DMLs, the desired result was to identify instructional strategies, that takes into account the language and culture of DMLs.

For this study, the case was represented by professionals and educators who play various roles in the education of DMLs. By including professionals and educators with various roles such as deaf education teachers, general education classroom teachers of DMLs, an SLP, an SLP-A, ELL teachers, a local education representative, audiologists who provide oral/aural rehabilitation, and an educational interpreter who also provides academic support, I sought to explore various instructional strategies appropriate for DMLs. Each participant played a

different role in the educational process, and I sought to identify multiple realities (Creswell & Poth, 2018).

A single case study design is the most appropriate design for this study because it allowed me to complete data collection in a natural setting (Yin, 2014). The participants in this study were bound together in their role of instructional providers for DMLs, as well as being bound in the elementary school setting of the case being studied (Patton, 2015). This single case study design provided the opportunity for me to interact with the participants throughout the data collection process to gain information that led to themes relevant to the research questions. Data collection for this study was conducted through interviews, observations, field notes, and a focus group to gain an understanding of the participants' knowledge related to the research questions (Creswell & Poth, 2018).

The research questions for case study research must provide substance and form to provide a clue regarding the research method being used (Yin, 2014). The research questions were comprised of a central question and three sub-questions. The central question was meant to be broad, while the sub-questions were meant to “specify the central question into some areas for inquiry” (Creswell & Poth, 2018, p. 140).

### **Research Questions**

The central research question is:

What educational assessments and instructional strategies that take language and culture into consideration are used in the education of DMLs?

The sub-questions are as follows:

1. What educational assessments are used to determine the language needs of a DML entering a D/HH program?

2. What instructional strategies are used in the process of teaching language skills to DMLs?
3. What instructional strategies are used that incorporate DMLs' culture into the learning process?

### **Setting**

This study was completed at an elementary school in the Southeast United States. Wildcat Elementary School (pseudonym), houses the local school district's deaf education program for students who are D/HH and who benefit from direct services from an educator of the deaf for at least some of their academic services. DMLs who participate in the deaf education program at Wildcat Elementary School (WES) do not necessarily live in the local school zone. An Individual Education Program (IEP) is written for each student, and the IEP team determines the best setting for students based on their individual needs. For deaf, hard of hearing, or DML students who require a least restrictive environment (LRE) that provides support from a deaf education teacher, WES is the appropriate setting in this school district.

Although the principal at WES oversees the school building, the deaf education supervisor for the school district plays an important role in the educational planning process for DMLs. The supervisor interviews educational interpreters and places them in the schools throughout the school district. She also conducts initial interviews for deaf education teachers in the school district. Once she has interviewed potential candidates, she informs the principals of the schools housing the deaf education programs (elementary, middle and high) in the district.

The principal of WES attends IEP meetings for DMLs as the LEA representative or assigns another faculty member (usually the assistant principal) to attend in her place. The

current principal at WES served as the assistant principal there before being promoted to the position of principal. She has conducted multiple observations related to the education of DMLs during her tenure at WES. When teaching at the middle school that serves the deaf education population in the same school district, I attended several transition IEP meetings at WES for students transitioning from the elementary school deaf education program to the middle school deaf education program. The principal (then assistant principal) of WES was familiar with the needs of the DMLs and provided pertinent feedback related to their educational needs.

The organizational structure of WES' deaf education program is led by the school principal. There are also two deaf education classroom teachers who serve as teachers for D/HH students. The deaf education teachers serve as case managers responsible for maintaining each students' IEP and for holding meetings as needed. There are currently four educational interpreters serving students in the classroom setting as well as in any extracurricular activities the students are involved in.

WES has approximately 500 students including: White, 55.2%, Hispanic, 19.8%; and African American, 18.3%. The school receives Title I funding, and 82.6% of the students receive free/reduced lunch. This school has two classrooms for DHH students including a preschool and kindergarten class, where older D/HH and DMLs come during nap time for additional academic support outside of their general education class, and a first grade through fifth grade class. The students include both English/ASL students and DMLs. The elementary school also offers other special education services which include: gifted services, direct services for students with a disability in reading or in math, and a behavior class. Students enrolled in the deaf education program at WES have the same opportunities as their hearing peers to participate

in extracurricular activities. If D/HH or DML students are selected for a sports team, theatrical performance, or other school sponsored activity, a sign language interpreter is provided if required for that student to participate.

WES was selected as an appropriate setting for this study because of the population of DMLs who have received educational services at this location over the past ten years. The deaf education staff, who were participants in this study, have been involved in the instructional process with DMLs for at least three years. Their experience includes observing DMLs beginning their educational experience in an English-speaking/ASL atmosphere and serving the students from their transition period throughout their elementary school years. The general education population at WES includes hearing multilingual learners who are in classes with DMLs. These hearing multilingual learners may attend ELL classes with their DML peers. Observations were conducted of DMLs in multiple settings including: deaf education classrooms, general education classrooms, and speech/language therapy.

### **Participants**

A screening survey was administered to potential participants (see Appendix B). The names of the potential participants were requested from the supervisor of the deaf education program in the school district that houses WES. Participant selection for this case study was conducted using purposeful sampling based on the criteria that the participants were currently involved in the educational process of DMLs at WES. Purposeful sampling allows the researcher to include participants who may benefit the study with their knowledge of the research problem (Creswell & Poth, 2018). Purposeful sampling was appropriate as the participants were chosen for their knowledge of the topic being studied, and for their ability to reflect on the research questions (Patton, 2015).

To gather as many viewpoints as possible, participants included 12 professionals and educators who play various roles in the instructional process of DMLs at WES. Professionals and educators involved in the instructional process of DMLs in this study included: two deaf education teachers, a local education agency representative who is consulted in the educational process, two audiologists, an SLP, an SLP-A, two sign language interpreters who also serve in the role of an educational tutor, a school psychologist who assesses DMLs, and two teachers of ELLs. Professionals and educators of DMLs involved in this study had at least three years of experience working with this population in an elementary setting.

### **Procedures**

The school system that houses WES required IRB approval before requesting permission to conduct a study. Therefore, before the study began, permission was sought initially from the IRB (see Appendix A). Once permission was received from the IRB to proceed with the study, permission was sought from the superintendent of the local school district.

Upon receiving permission from the superintendent, a pilot study was conducted to ensure the proposed research design and data collection procedures were appropriate for the study (Creswell & Poth, 2018). The pilot study was conducted with one sign language interpreter who previously worked at WES, a retired deaf education teacher who previously worked at WES, and a former general education teacher who taught DMLs. None of the participants nor the data from the pilot study were included in the results of this study. After the pilot study was completed and necessary changes were made, a discussion with the WES principal occurred to discuss the logistics of the dates and time required by me to be in the school.

The purpose of the study was explained to potential participants through a recruitment letter (See Appendix C) that was emailed. If potential participants did not respond to the initial email within a week, another email was sent with a follow-up recruitment letter (See Appendix D). The initial email and the follow-up email included a link to the screening survey (See Appendix B). If the potential participants were found eligible for the study, and they expressed an interest in participating in the research, they were sent an acceptance email (See Appendix E) with a link to the consent form (See Appendix F) for review. Before beginning the interviews, each participant was given time to review the consent form in person, ask questions if needed, sign the form if they chose to participate, and hand the form back to me. Once the consent forms were signed, the process continued.

The data collection process began with interviews. Following the interviews, I conducted observations of those participants who are involved in the instructional process of DMLs. Then, upon the completion of the interviews and the observations, a focus group consisting of professionals and educators of DMLs who daily serve these students at WES was conducted. The interviews and the focus group were audio recorded. I also took written notes throughout each session. Data collected from each phase of the research process was analyzed, synthesized, and coded as themes and patterns were identified (Yin, 2014).

### **The Researcher's Role**

I have had an active role in the education of D/HH students for 13 years as a teacher of D/HH students. I served as the LEA representative in many IEP meetings, created schedules for the sign language interpreters in several kindergarten through high school settings, and have been a presenter at workshops related to the education of D/HH students. I have been accepted into the deaf community by its members, and have been involved in the deaf community in a

variety of settings both professional and nonprofessional for over 26 years. My undergraduate collegiate educational experiences focused on the study of deaf education and other deaf-related service areas including ASL interpreting as well as training to provide closed captioning services for television.

My experiences played an important role in the selection of the topic of this study. I relied on statistics such as those from the Gallaudet Research Institute (GRI) that indicate an increase in the population of DMLs (Pizzo & Chilvers, 2016). I recognized the lack of identified educational strategies that promote learning among this population (Baker & Scott, 2016; Guardino & Cannon, 2015, & Pizzo & Chilvers, 2016). The need for further research related to the education of DMLs and the value of identifying strategies related to DMLs led to an interest in this topic.

This study was conducted using an ontological assumption as I acknowledged multiple realities surfaced throughout the research (Creswell & Poth, 2018). As interviews, observations, and the focus group were completed, I was exposed to a variety of realities. I sought to identify themes that emerged and made generalized assumptions from those themes. Twelve participants were included in this study. I expected that each of the participants would have different realities and experiences to contribute (Creswell & Poth, 2018).

My experience with DMLs involved educating students at the middle school level. I never taught DMLs at WES. However, I did attend several IEP meetings at WES for DMLs and other D/HH students who were transitioning from WES to the middle school that serves D/HH students. Although I have experience in the school system where WES is housed, I bracketed my own bias and assumptions by giving full attention “to the instance of the phenomenon that is currently appearing” (Patton, 2015, p. 117) by keeping a reflexive journal (Appendix L). My

role in the research site was only that of the researcher. I do not work for WES or the school district in which it is located. When I worked for the school district where WES is located, I had a professional relationship with several of the participants for this study. However, my role throughout this study was as an observer and collector of information.

### **Data Collection**

Data collection methods for this study included interviews, observations, and a focus group. The data collection methods were reviewed by two individuals who have a doctorate degree and some experience in the education of DMLs to ensure face and content validity (Yin, 2014). Questions for the interviews were reviewed and clarified as they relate to the study. The reviewees agreed with the methods being used. Reviewing the data collection methods was also important in an effort to avoid possible bias (Patton, 2015).

Once IRB permission was gained for the study and the pilot study was completed, arrangements were made with each participant to engage in an interview. Following the interviews, observations of the professional and educators involved in the instruction of DMLs were completed as they served the DMLs in their respected area of expertise. Finally, a focus group was completed. By collecting data through a variety of sources, I hoped to increase the study's trustworthiness through data triangulation (Yin, 2014).

### **Interviews**

Interviews are an important part of the qualitative case study research process (Yin, 2014). Interviews allow the researcher to gain information from the participant that may lead to a clearer understanding of their experiences and point of view (Creswell & Poth, 2018). Questions asked in the interview process should reflect the problem statement, while providing a

link between the study and the theoretical framework (Patton, 2015). Open-ended questions were used to guide the interviews in a fluid line of inquiry (Yin, 2014).

Interviews with participants allowed me to delve into the research topic as thoroughly as the participant was willing to go and often leads to deeper conversation than expected (Rubin & Rubin, 2005). In an attempt to explore instructional strategies that promote learning among DMLs, I implemented research that sought to explore instructional strategies already being used by some professionals and educators of DMLs and compare them to the themes that emerged from the complete data collection process (Rubin & Rubin, 2005). An interview guide was used for each individual interview to proceed consistently.

Interviews were scheduled at the participant's convenience, regarding time and location. Each participant was interviewed one-on-one to gain an understanding of their knowledge and use of strategies related to DMLs. The voice memoing app on my iPhone was used as the primary device to record each interview. I used the voice memoing app on my iPad as the secondary recording device. Pencil-and-paper notes were taken as well, serving as a backup in the event that the voice memoing app malfunctioned. Using the audio recordings, I personally created verbatim transcripts. After transcripts were created from each interview, member checking was completed as a means of credibility (Creswell & Poth, 2018). All participants were asked the same questions listed below.

Standardized Open-Ended Interview Questions (see Appendix G)

1. Please introduce yourself to me.
2. What is your area of expertise?
3. How long have you been involved with the education of DMLs?
4. Describe your experience with DMLs.

5. How many DMLs are on your caseload, or how many DMLs do you serve each day?
6. How is the mode of communication determined for each DML?
7. How does the level of hearing loss impact the mode of communication, and language development of a DML?
8. What process is used to determine the language needs of a DML entering your D/HH program?
9. What instructional strategies are used to facilitate communication as a DML is in the process of learning the new language(s)?
10. What instructional strategies are used to teach DMLs English and their determined mode of signed communication?
11. How are the varying cultures of DMLs incorporated into the curriculum?
12. How is culture bias avoided?
13. What accommodations are provided for families of DMLs with respect to their language and culture?
14. What instructional strategies are used in the initial assessment phase for DMLs who are not familiar with English or ASL?
15. How is language proficiency assessed for DMLs?
16. How are language and cultural bias avoided in the assessment process?
17. We've covered a lot of ground in our conversation, and I so appreciate the time you've given to this. One final question, What else do you think would be important for me to know about the instructional process of DMLs?

Questions one through five are knowledge questions (Patton, 2015). The participants involved in this case study play various roles in the instructional process of DMLs. These

questions are designed to establish the participants' relation to, and their background in, the instruction of DMLs. These questions were intended to be relatively straightforward and non-threatening, and ideally served to help develop rapport between the participant and me (Patton, 2015). The questions were adjusted as necessary for each participant, based on their role in the instructional process of DMLs.

Mode of communication is an important topic that must be discussed and determined for students who are D/HH. However, philosophies differ in this area (Baker & Scott, 2016). For DMLs, Bowen (2016) recommended determining the language goals and mode of communication as early as possible in the transition phase to support both the student and the family. Questions six through ten address mode of communication, and the process of teaching DMLs that mode along with teaching English.

DMLs are students from non-English or ASL speaking families who are being educated in an English-speaking academic setting where they may be expected to learn ASL (Cannon, Guardino, & Gallimore, 2016). In considering Vygotsky's sociocultural theory, the theory driving this study, the cultural background of DMLs is an important aspect to consider in the education of DMLs (Pizzo, 2016). Families of DMLs may benefit from a translator for IEP meetings, paperwork sent home in their native language, and classes teaching English and/or ASL (Gallegos, 2017). Questions 11 through 13 address the integration of culture in the educational process of DMLs.

Questions 14 through 16 are related to the assessment of DMLs. Educators of DMLs involved in the assessment process need to have training and knowledge of assessing multilingual learners (Pizzo & Chilvers, 2016). Guardino and Cannon (2016) suggest using

alternative assessments for DMLs such as portfolios, checklists, interviews, or authentic work samples.

Question 17 was the final question and allowed the participant the opportunity to add anything else they felt was important to the topic of discussion (Patton, 2015). Although I was familiar with many of the participants and taught D/HH students for 13 years, including DMLs for four years, I realized I might gain insight related to the study not directly related to the questions asked. Insight gained was noted in the reflexive journal (see Appendix L).

### **Observations**

Observations of educators of DMLs were conducted to observe strategies being implemented in the instructional process (Yin, 2014). Field notes were taken throughout the observational time. Advantages of conducting observations include: (a) the researcher may gain information not disclosed during the interview process, (b) observations may provide a better understanding of the phenomenon being studied, and (c) the researcher may observe occurrences the participants take for granted and may not have mentioned during the interview (Hatch, 2002).

Observations took place in the general education large-group instructional classroom setting, in small-group instructional settings, small-group speech therapy sessions, and in the hallways during transition times at WES. Each observation was scheduled, and I was a non-participant. I contacted each participant and inquired about the best time to conduct the observation to reduce any intrusion in the educational process (Yin, 2014). Descriptive field notes (Yin, 2014) were taken using paper and pen to document the observed experiences and to create reflective field notes (Creswell & Poth, 2018). An observational protocol was used throughout each observation (see an example of this in Appendix H).

## Focus Group

A focus group discussion took place with seven professionals who are involved in the instructional process of DMLs. The focus group participants were selected from the study participants who serve the DMLs within the WES setting. To obtain comprehensive data in an attempt to identify strategies appropriate in the educational process of DMLs, the focus group included two audiologists, a speech-language pathologist assistant (SLP-A), two teachers for the deaf, a teacher of ELLs, and an educational interpreter.

The benefit of conducting a focus group discussion with the study participants was the opportunity to interact in a conversation-style interview (Patton, 2015). I acted as the moderator/interviewer of the focus group, and attempted to guide the conversation as the participants engaged in an in-depth conversation that elicited discussion of all aspects of the research topic. The focus group took place in a face-to-face format providing the opportunity for the participants to interact in-person rather than through electronic communication devices (Greenbaum, 2000). The focus group questions were open-ended.

### Standardized Focus Group Open-Ended Questions (see Appendix I)

1. What professional development training has been the most beneficial in preparing you to educate DMLs?
2. When planning, conducting, and reporting assessment activities, how do you take into consideration the varied language experiences of DMLs?
3. What instructional strategies do you use to reduce cultural bias in your classroom?
4. What instructional strategies are implemented to support DMLs as they enter WES?
5. What instructional strategies are implemented to promote communication among your DMLs and other students?

6. What process is in place for collaboration between the educators of DMLs at WES?
7. What strategies are in place to support parents of DMLs?
8. What strategies are in place to provide written communication from the school to the parents in their native language?
9. What instructional strategies are in place to train other school faculty and staff, regarding culture and bias, as they interact with DMLs in the school setting?
10. What additional information would you like to add related to the education of DMLs?

Question one asked about professional development related to educating DMLs.

Professional development is an important process in preparing educators of DMLs for their role. Professional development related to students' cultural origins may be beneficial as educators interact with DMLs and their families (Gallegos, 2017).

Question two took into consideration the impact of varied language experiences of DMLs related to the assessment process. DMLs participate in assessments related to their language skills, and also in a variety of other assessments. The amount of exposure to their native language must be determined before assessments begin (Pizzo & Chilvers, 2016).

Cultural bias may appear in the assessment of DMLs as questions are related to American culture rather than their native culture (Pizzo & Chilvers, 2016). Educators of DMLs must be aware of their own cultural biases, and the impact which may arise in their teaching (Cannon & Luckner, 2016). Question three addressed cultural bias in the classroom.

As DMLs enter an American school such as WES, their families are beginning a new journey as well. Question four asked about the strategies established to support DMLs as they enter a new school. The NMSD supports DMLs and their families as they provide ASL classes, English classes, a sibling program, and Deaf mentors (Gallegos, 2017).

Question five asked about strategies related to promoting communication among DMLs and other students. WES is made up of a majority of English-speaking students. Although there are D/HH students enrolled in the deaf education program, not all of the D/HH students are DMLs. I wanted to know more about the facilitation of communication as the students interact. Pizzo (2017) recommends a language-rich environment with a holistic focus, and includes phonology/cherology, morphology, semantics, syntax, and pragmatics.

Collaboration between instructional faculty and staff is an important factor for all students including DMLs. Topics which may be discussed during collaboration include preferential seating; use of appropriate language; IEP goals; and others depending on the needs of the student(s) (Dostal, et al., 2017). Question six asked about the collaboration process between instructors of DMLs at WES.

Questions seven and eight asked about the strategies in place at WES that support the parents of DMLs. Parents of DMLs may benefit from written communication being provided in their native language, interpreters for parent meetings/school presentations, English classes, and ASL classes. By providing support for parents of DMLs, trust may be developed between the families and the school (Gallegos, 2017).

DMLs are “classified as *culturally and linguistically diverse*” (Cannon & Luckner, 2016, p. 89). Teachers of DMLs must be prepared to provide instruction to this unique population without displaying bias (English, 2018). Question nine asked about strategies in place regarding culture and bias involving the school faculty and staff.

The focus group concluded the same way the individual interviews concluded. Question 10 provided an opportunity for participants to add any additional information they had not had the opportunity to add, and which may add to the research study (Patton, 2015).

## Data Analysis

Before beginning the data analysis process, transcripts were created of the participant interviews and the focus group conversation. The transcripts were made available to the study participants so that member checks could be completed. Member checks are an important part of the credibility process as they allow the participants the opportunity to “judge the accuracy and credibility of the account” (Creswell & Poth, 2018, p.261).

Once the member checks process were completed, the data analysis process began. While reviewing the data, I wrote notes in the margins of the transcripts that is the process of memoing (Yin, 2014). Memoing may be used to begin the process of a “general analytic strategy” (Yin, 2014, p. 136) in relation to the research questions involved in this study. During the course of reviewing the transcripts and memoing, I looked for codes.

Saldaña’s (2013) process for data analysis was used for this study. For qualitative research, a code is defined as “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2013, p.3). Codes may be single words or lengthy passages found during each cycle of reviewing the data and may be arranged and rearranged in search of patterns. Repeated cycles will be necessary to identify codes found in data. Once codes are identified, they may be placed into categories or “families” (Saldaña, 2013, p. 9) as patterns emerge. Categories are created by codes with similar attributes. As cycles continue, subcategories may also be identified (Saldaña, 2013).

A theme is “an outcome of coding, categorization, or analytic reflection” (Saldaña, 2013, p. 14). During the analysis process, I determined the relationship between themes and

concepts as they interrelate and in consideration of the research questions for this study (Saldaña, 2013, Yin, 2014). A data analysis matrix (see Appendix J) allowed me to list open codes in one column and identified themes in a second column (Yin, 2014). Content analysis was completed as I sought to identify consistencies and meanings (Patton, 2015). At the conclusion of the data analysis process, I interpreted knowledge gained by creating naturalistic generalizations (Creswell & Poth, 2018) by way of qualitative deductive analysis (Patton, 2015).

### **Trustworthiness**

Trustworthiness was displayed throughout this study as credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985). Each area of this section is important in a qualitative study. Although I previously worked for the school system in the study, I never worked at WES. Member checks, researcher reflexivity, and an external auditor were used to reduce any bias which is found to have occurred.

### **Credibility**

Credibility was established as time was spent in the setting for the study (Lincoln & Guba, 1985). In order for credibility to be present, I represented the collected data through interviews, observations, and a focus group in an accurate manner that reconstructed and represented the participants' views (Patton, 2015). Credibility was also demonstrated through triangulation and member-checks. For this study, triangulation occurred as data from interviews, observations, and focus groups was compared for consistency (Patton, 2015). This process allowed me to look for themes and patterns that were recurring among the different data sources, and which were relevant to the population (DMLs) being studied (Creswell & Poth, 2018). By collecting data through three different sources, I was able to “ensure that the case study had

rendered the participant's perspective accurately" (Yin, 2014, p. 122). Once the data collection process was complete, I reviewed the data as it related to the findings (Yin, 2014).

Member checks allowed the participants to review the information and verify the accuracy of transcripts created (Creswell & Poth, 2018), and are considered to be "the most critical technique for establishing credibility" (Lincoln & Guba, 1985, p. 314). Once the research process was completed and the conclusions were drawn, the participants had the opportunity to review rough drafts to validate the accuracy of what was completed (Creswell & Poth, 2018). The rough draft was reviewed via email or with paper copies depending on the preference of each participant. Feedback from participants was taken into consideration in preparing the final draft.

### **Dependability and Confirmability**

Dependability and consistency (Lincoln & Guba, 1985) were established through an inquiry process that was found to be logical, traceable, and documented (Patton, 2015). An audit trail (see Appendix K) was created to document the research process. The audit trail was performed to examine the process of data collection, data analysis, and the results reported (Patton, 2015).

Confirmability is the process of "establishing the fact that the data and interpretations of an inquiry were not merely figments of the inquirer's imagination" (Patton, 2015, p. 685). Confirmability was established through member checking and peer debriefing (Patton, 2015). Peer debriefing is an important process that allows an outsider to review the analysis process and "can help uncover taken for granted biases, perspectives and assumptions on the researcher's part" (Lincoln & Guba, 1985, p. 308). Necessary changes were made after the peer debriefing was completed.

## **Transferability**

Transferability of a study involves providing enough information throughout the study in order for readers to make connections from this case study to another case (Lincoln & Guba, 1985). The audit trail (see Appendix K) provides a timeline of actions taken during this study. By providing detailed descriptions throughout the study, readers will be able to make decisions regarding transferability. Transferability was addressed throughout the study and results reported so that the study and results may be applicable to other populations similar to the one studied (Creswell & Poth, 2018).

## **Ethical Considerations**

Ethical considerations were addressed throughout the course of this study. Before the study began, permission was sought from the Institutional Review Board (IRB). Once permission was received to proceed with the study, permission was sought from the superintendent of the local school district. Upon receiving permission from the superintendent, a discussion with the WES principal occurred to discuss the logistics of the dates and time required for me to be in the school building. All data collected throughout the study will be stored securely for five years on a password locked computer. At the conclusion of the five years, all electronic records will be deleted and paper copies of data will be shredded.

The identity of the site of the study and the identity of the participants will be kept confidential. A pseudonym was created for the name of the school, and was used throughout the research results and dissertation process. Pseudonyms were created for all participants as well. The codebook with the real names and pseudonyms was printed and kept in my personal locked safe separate from all other collected data. Bias was bracketed as I kept a reflexive journal (Appendix L), and was avoided as I was a non-participating observer (Creswell & Poth,

2018) allowing me to give my full attention to the participants and the “phenomenon that is currently appearing” (Patton, 2015, p. 117).

### **Summary**

This chapter described the methods of the research study in detail. The process of data and information collection were explained. The procedures and data analysis were discussed and related works were cited. Trustworthiness was discussed as well as ethical considerations necessary to ensure the ethical protection of all participants in this study.

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary school in the southeast. It was hope that strategies identified advance the education of these unique learners.

## **CHAPTER FOUR: FINDINGS**

### **Overview**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary school in the southeast. This chapter focuses on the results of the data analysis and findings from the data collection process that included interviews, observations, and a focus group. Interviews included 17 open-ended questions (see Appendix G), and the focus group included 10 open-ended questions (see Appendix I). Observations were completed using an observational protocol (see a completed example in Appendix H). The chapter begins with demographic information related to each participant involved in the study. Identified themes and results from the data analysis are presented next. Lastly, the results as they relate to the central question and sub-questions are presented.

### **Participants**

Participants in this study included 12 professionals involved in the instructional process with DMLs. The professionals included a special education supervisor who was responsible for supervising the deaf education program in the school system where the study occurred, two audiologists, one SLP, one SLP-A (who was a former deaf education teacher), two deaf education teachers, two educational sign language interpreters, one school psychologist who assesses DMLs, and two ELL teachers. Two other participants, both teachers of the deaf, were invited to participate in the study. However, one stated she did not have time, and the other agreed to participate but never responded to future contacts. The focus group included seven of the professionals who participated in the individual interviews. The group consisted of two audiologists, one SLP-A, two deaf education teachers, one sign language interpreter, and one

ELL teacher. Each participant involved in this study was assigned a pseudonym to protect their identity.

Table 1

*Participant Demographics*

Pseudonym	Role in Instructional Process of DMLs	Years Served DMLs
<b>Ruth</b>	Special Education Supervisor	29
<b>Laura</b>	Audiologist	9
<b>Paula</b>	Audiologist	17
<b>Candy</b>	SLP	19
<b>Mary</b>	SLP Assistant	10
<b>Tammy</b>	Deaf Education Teacher	13
<b>Kim</b>	Deaf Education Teacher	7
<b>Amy</b>	Educational Interpreter	3
<b>Janet</b>	Educational Interpreter	4
<b>Linda</b>	School Psychologist	21
<b>Tina</b>	ELL Teacher	3
<b>Julie</b>	ELL Teacher	3

**Ruth**

Ruth has been involved in the instructional process of DMLs for 29 years. She served as an educational audiologist for many years before transitioning to the role of special education

supervisor for the school system where the study occurred. Her supervisory role included audiology, speech-language, deaf education (including educational interpreters), assistive technology, occupational therapy, physical therapy, and Medicaid reimbursements. While serving as an audiologist, she conducted hearing tests, serviced listening devices such as classroom FM auditory trainer equipment and personal hearing aids (replacing tubing, cleaning out ear pieces, etc.), and educated parents, students, and teachers on ways to support DMLs and other D/HH students in the educational setting. A large part of her role both as an audiologist and as a supervisor included attending IEP meetings for each DML and other D/HH students. Ruth also has training as a sign language interpreter that has been useful in her interactions with D/HH, DMLs, and parents who are D/HH.

### **Laura**

Laura is an educational audiologist who has been involved in the instructional process of DMLs for nine years. She conducts audiological testing and follow-up with ENT physicians, fits and programs hearing aids to be used with remote microphone technology, consults with teachers regarding needed classroom accommodations, consults with parents regarding available community services and information regarding modes of communication, and leads auditory training sessions one time a week. Laura is also fluent in ASL which is helpful in communicating with students and parents who use a signing system to communicate.

### **Paula**

Paula is an educational audiologist who has been involved in the instructional process of DMLs for 17 years. She completes the same audiological services for the school system as Laura. However, Paula's role at WES is primarily to assist in the transitional process when planning for the students to move from 5<sup>th</sup> grade at WES to the local middle school that serves

DMLs. Often, students going to middle school do not want to use the F.M. auditory system but prefer to use their personal hearing aids instead. Paula is involved in the conversation and planning of the best hearing services for each student as they transition.

### **Candy**

Candy is a SLP who has been involved in the instructional process of DMLs for 19 years at WES and at the middle school that serves DMLs in the school system where the study occurred. She leads speech therapy sessions in small group settings with D/HH and DMLs. She is also involved in the assessment process for D/HH and DMLs during evaluation and re-evaluation periods.

### **Mary**

Mary currently works as a SLP-A who serves DMLs and D/HH students. She taught deaf education for several years before taking a break to stay at home with her children. During her hiatus from teaching full-time, she worked part-time serving children with disabilities (including D/HH) from age birth to three years through the state's early intervention program. She also completed the necessary training to become a SLP-A. Mary is fluent in sign language and also uses Visual Phonics in therapy sessions with her students.

### **Tammy**

Tammy has been teaching DMLs for 13 years. She taught upper elementary in the past as well as serving as an itinerant teacher for D/HH but currently teaches in the Pre-K D/HH classroom at WES. During nap time for the Pre-K students, she works with K-2<sup>nd</sup> grade D/HH and DMLs. She is fluent in sign language as well as Visual Phonics. Tammy has a classroom assistant who is fluent in sign language as well as a nurse who serves the medical needs of one of the D/HH students in the room.

**Kim**

Kim has seven years of experience in the instructional process of DMLs. Not only has she taught at WES, she also has worked at two residential schools for the deaf where she had a self-contained class. She currently teaches the upper grades, 3<sup>rd</sup> through 5<sup>th</sup>, at WES. She has several sign language interpreters who come in her classroom throughout the day to work one-on-one with students to pre-teach or re-teach information taught in the general education classroom.

**Amy**

Amy is a sign language interpreter who is in her fourth year at WES. She has been involved with the deaf community since she was 14 years old. She completed the educational interpreter certification and is involved in presenting professional development sessions on topics related to sign language and deaf education. Amy currently works in the deaf education Pre-K classroom where she assists in instruction of the Pre-K students as well as the K-2<sup>nd</sup> grade D/HH and DMLs who come to the classroom during the Pre-K nap time. She has also served older students at WES as a full-time classroom interpreter.

**Janet**

Janet is a sign language interpreter who has obtained the educational interpreter certification. She has experience as an interpreter in the collegiate setting but is currently interpreting in general education classrooms at WES. When she is not needed in the general education classrooms, she works with students one-on-one or in a small group setting doing pre-teaching or re-teaching for students who need extra help on certain topics.

**Linda**

Linda is a school psychologist who has been involved in the instructional assessment process with DMLs for 21 years. She assesses all D/HH students and DMLs in the school system, Pre-K through seniors in high school, where this study has taken place. Although her collegiate training was not focused on serving the D/HH population, her years of experience have provided vast knowledge with this group of students and their unique needs.

### **Tina**

Tina is an ELL teacher at WES who has taught several DMLs during her tenure. She began as a general education teacher (kindergarten) at WES and transitioned to ELL. She is passionate about the population she teaches as she assists her students and their families throughout the transition into WES and the community.

### **Julie**

Julie is an ELL teacher who has been at WES for three years. She has taught DMLs during her time at WES but does not currently serve any DMLs. She works as an advocate for ELLs as she collaborates with general education teachers and other school staff.

## **Results**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs. Data from interviews, observations, and a focus group were analyzed. I followed the process that Saldaña (2013) recommended for coding data in a qualitative research study. Codes were identified and placed into categories, subcategories, and themes. Themes were determined through data analysis and were related to the research questions. The following sections are theme development, research question responses, and the summary.

## **Theme Development**

After completing the interviews, observations, and focus group, transcripts were created. Participants were given the opportunity to perform member checks by reviewing the transcripts. Upon the completion of member checks, interview and focus group data were compiled to compare each participant's answer as it related to each question's individual answers. From the interview data, codes were identified and the number of times each code occurred was calculated. Twenty-nine codes emerged from the transcripts. These codes were placed into categories as they related to each interview and focus group question. The data was further aggregated into seven subcategories. The categories were assessment, communication, culture, instruction, professional development, cultural bias, and other issues. However, the categories of professional development, cultural bias, and other issues resulted in redundancy with the other categories so they were not used alone to develop the themes. Many of the 29 codes were similar because the interview questions had loosely related topics. The 29 codes were narrowed down further into the themes as they related to the research questions (see Appendix J).

The theme development process concluded with four relevant themes emerging. Those themes were usage of non-verbal assessment, provision of native language access, incorporation of students' culture into the curriculum, and importance of visuals in instruction. Open-ended questions were asked in the interviews and focus group to guide the interviews in a fluid line of inquiry while providing a link between the study and the theoretical framework. Information gathered during the observations was used throughout the data triangulation process along with data from the interviews and focus group. Themes identified in the data analysis process are consistent with the research relevant to this study.

**Theme one: Use of non-verbal assessments.** The theme related to use of non-verbal assessment recurred in both the individual interviews and the focus group. Relevant research emphasizes the need to collaborate with sign language interpreters familiar with the signed language(s) being used, with deaf adults who are familiar with the signed language to gain an appropriate assessment of the functioning level of the DML, or administering the assessment in the DMLs native written language if they are literate in that language (de Garcia, 2013). However, participants in this study also found that non-verbal assessments such as assessments associated with the Weschler Intelligence Scale for Children-5 (WISC-5), the Kaufman Assessment Battery for Children-2 (KABC-2), or the Comprehensive Test of Nonverbal Intelligence provided beneficial information. The codes related to use of non-verbal assessment were:

- Observations: observations provide assessment data in a more natural setting while the DML is interacting in a hands-on academic or social activity
- Math assessment: math is a universal concept, good indicator of general ability
- Removes language barrier: lack of English skills not an issue
- Exposed to multiple languages: DMLs may be exposed to one or more languages at home in addition to English and a signed language at school which may be overwhelming for them during transition and the assessment phase
- Lack of professional development: professional development related to DMLs impacts all areas of serving these students, including the assessment process
- Parent input: information provided by parents is considered in the assessment process

In consideration of the codes related to the use of non-verbal assessment, all of the participants agreed that using non-verbal assessment tools with DMLs is more appropriate and more accurate when an assessment in their native language or using a sign language interpreter for their native signing system is not available (personal interviews, September 2019; focus group, September 18, 2019). Ruth (personal interview, September 10, 2019) explained that parental input is an important aspect in the assessment process. This is especially relevant when a family has created “home signs” that may not be true signs but are created gestures only known to those closest to the DML. As the assessment team attempts to determine the language needs of a DML entering the D/HH program at WES, Ruth explains

The language needs of students cannot be determined by one test or one observation.

Many times, language needs continue to be identified over several years. The team may review: observations over multiple settings and multiple observers, interviews of parents and other caregivers, previous assessments and school settings, degree of hearing loss, formal and informal assessments by speech-language staff, deaf education staff (including audiologists, and school psychologists who specialize in student with hearing-impairments), educational audiologist input and recommendations and possible medical diagnosis. (personal interview, September 10, 2019)

The focus group (September 18, 2019) discussion regarding taking into consideration the varied language experience of DMLs during planning, conducting, and reporting assessment activities elicited the following remarks:

Candy (SLP): When I have to assess [DMLs] I have to have an interpreter with me. I am not fluent in ASL so if that is the student’s mode of communication, I have to have someone with me to ensure that we are getting the true picture of the student’s language

impairments. It is all noted in the written report along with the background history of the student. This includes medical information, past testing, data collection, etc. (focus group, September 18, 2019)

Paula (audiologist): Start at their initial assessment level, based on the results of the assessment results, and build on that. (focus group, September 18, 2019)

Kim (deaf education teacher): I provide more support as needed. For some students I sign questions [presented in printed material] for lower level, but not others. I turn pages for students and fingerspell words on assessments instead of using the sign because some signs may lead them to the answer. (focus group, September 18, 2019)

**Theme two: Provision of native language access.** Provision of native language access is the next identified theme. According to information gained during the data collection process, WES is proactive in many ways in providing language access to parents and students involved in their school. The majority of the 52 active ELL students at WES are from Spanish-speaking families. However, there are also students with Kurdish and Vietnamese backgrounds. Many of the participant answers to the interview and focus group questions related to provision of native language access were similar. The identified codes related to provision of native language access were:

- Provide translators/interpreters: when available, provide human translators and/or sign language interpreter for families' native language
- Translation apps: translation apps (such as Google Translate) are used for translating written communication or for sending messages
- Materials in Spanish: many school registration materials and IEP-related materials are available in Spanish

- Classroom materials in Spanish: participants reported having books, visuals, vocabulary (sign language visuals with Spanish labels & vocabulary words) displayed in classrooms, available in Spanish

Participants involved in the educational setting in classrooms or speech therapy all reported having Spanish-related materials available in their setting. When vocabulary related to current units of study (either printed words or pictures of sign language vocabulary) are sent home, labels are added in the DMLs/families' native language(s) when needed. Mary (SLP-A) stated, "I send home a monthly activity language calendar in Spanish along with a weekly progress report in Spanish to accommodate for the families who are native Spanish speakers" (personal interview, September 16, 2019). Google Translate and the Remind app are used as tools for daily communication between families and school personnel. The ELL teachers, Tina and Julie, expressed concern about the amount of access DMLs have to school-related information/communication provided in students' native language. Tina explained,

We have tools such as Google Translate and the Remind app available, but there are still occasions where printed materials are going home in English and students are missing out on opportunities because their parents did not understand what was happening in the school. (focus group, September 18, 2019)

Ruth gave insight into the issue of provision of native language access as it related to day-to-day communication attempts for DMLs new to America and to WES.

A translator is present for all formal meetings in our schools. We use translation apps on our phones for brief communications via text. We have translators in the building during the school day to make phone calls to parents. We translate written communications via

home/school. Our school website is accessible to a variety of languages. We have learned a great deal as professionals when meeting with families from South American cultures. Although it is extremely hard for me, an educated American woman, to defer questions regarding potty training, first words, etc. to fathers when the mother is present, I do attempt to do so. (personal interview, September 10, 2019)

Providing native language access to school-related information is important in the transitional process for DMLs and their families (Gallegos, 2017; Pizzo & Chilvers, 2016).

**Theme three: Incorporate students' culture into curriculum.** Incorporating students' culture into curriculum is the next identified theme. DMLs coming from another country to America are not only being exposed to American culture, but also the culture of the D/HH community, even if their only exposure to the D/HH community is through their academic setting. The professionals involved in this study are intentional in incorporating students' culture into the curriculum. Codes related to incorporating students' culture into curriculum are:

- Classroom materials: books, pictures, labeling in English and Spanish
- Considering family backgrounds: information from families, pictures, etc. incorporated into curriculum/classroom activities
- Holiday celebrations: celebrations including both American celebrations and DMLs' families' celebrations

By incorporating students' culture into curriculum, cultural barriers are lessened or removed and academic progress may be heightened (More, et al, 2016). Holiday celebrations are used as a time for language exposure and cultural awareness. Tina (ELL teacher) described ways she and Julie (ELL teacher) incorporate culture into the curriculum.

We incorporate our students' native culture into the curriculum throughout the school year. We use students' native culture's celebrations and religions as the focus of our curriculum. These activities provide insight on the various cultures and religions represented in our classroom as well as language building opportunities. (personal interviews, September 18, 2019)

However, DMLs may not always grasp the meaning of the holidays without extensive explanation. Preparing for classroom collaborative cultural experiences may stretch the imagination of the educator but are meant to build knowledge and vocabulary (Guardino & Cannon, 2016).

**Theme four: Visuals are an important part of instruction.** The final identified theme is visuals are an important part of instruction. DMLs are students with a documented hearing loss. Therefore, they may or may not be able to rely on auditory learning as a tool to acquire knowledge. Students may know a sign for a word, but not recognize the word in print (Wright Moers, 2017). During an observation conducted in a general education setting of a DML completing a writing prompt, the ASL interpreter (Janet) used a dry erase marker and small white board to write words the student did not know how to spell. The board was also used to draw a picture for a concept the student did not know how to express. The interpreter was very patient and worked with the student continually until she was able to identify the words needed to express her thoughts in her assignment. Without the use of the white board and marker, the back-and-forth communication through ASL still would have been appropriate but would have taken time away from the student's completion of the writing prompt assignment (observation, September 16, 2019).

The identified codes related to the use of visuals being an important part of instruction are:

- Labels in classroom: Spanish and English labels
- Pictures in classroom: pictures of objects and of signs for words
- Books: books in English and Spanish; books with both English and Spanish
- Sign Language interpreters: provide visual in use of ASL
- Total immersion: provides spoken and ASL communication simultaneously

Use of visuals in the instructional process was a recurring topic in the interviews and focus group as well as being observed in the observation phase of the data collection process. Mary (SLP-A) used visuals in all of the observed speech-language therapy sessions. With a preschool student, she used plastic figurines to represent objects for vocabulary presented.

The following are notes from an observation during a speech-language therapy session:

- Mary (M) demonstrated a sound and watched her facial movements in a mirror.
- Student (S) imitated sound while looking in mirror.
- S imitated M's signs for objects, repeated sounds, and picked up plastic objects
  - Vacuum: Visual Phonics (VP), voiced sounds, sign, picked up correct card, picked correct object
  - Ice cream: imitated sounds, sign, picked up card, VP, object
  - Baby: sign, sound, imitated VP, held plastic baby
  - Snake: plastic object, card, VP, made the plastic snake crawl on table while continuing to make the "ssss" sound; put two snakes side-by-side. M signed, "Two snakes, friends?" S watched the signs but did not respond.

The session continued with Mary showing more than one object at a time, up to three objects. She used VP and the sound(s) simultaneously and signed “Which?” for the student to choose the correct correlating object. This therapy session only continued for 15 minutes due to medical issues the student experienced. However, many language concepts were covered during the session, and the use of visuals were appropriate for the age and language level of the student involved. (observation, September 18, 2019)

Professionals involved in this study were observed using pictures in lessons, having visuals posted around the classrooms and therapy rooms, using books with pictures and English and Spanish labels, using videos with captions for words being said and songs being sung, and using cards with written words on them to show simultaneously when introducing signs for words. Visuals were a large part of the observed instructional process.

### **Research Question Responses**

For this study, one central research question and three sub-questions guided the research. Each of the research questions are answered using data analyzed from the interviews, observation, and the focus group. I correlated the identified themes with each research question and sub-question.

**Central research question.** The participants in this study varied according to their role in the instructional process of DMLs. However, their answers were very similar to the central research question: What educational assessments and instructional strategies that take language and culture into consideration are used in the education of DMLs? The four identified themes (use of non-verbal assessment, provision of native language access, incorporate students’ culture into curriculum, and visuals are an important part of instruction) are all essential aspects in answering the central question.

The theme use of non-verbal assessments was mentioned by 10 out of the 12 participants. Based on the responses to interview and focus group questions, non-verbal assessments could be in the form of a formative assessment administered by the school psychologist, or in the form of observations of DMLs as they participate in classroom activities or in social interactions throughout their school day. The SLP-A, Mary, stated “We use pictures, facial expressions, and gestures, whatever it takes to make language connections” (personal interview, September 16, 2019).

Candy, the SLP added,

As with any other student, data collection/testing are looked at to determine what language needs the student is lacking. We also look at what the students are doing in class and what skills our student needs to accomplish the classroom expectations. (personal interview, September 23, 2019)

Provision of native language access was also mentioned by each participant. During the assessment phase, non-verbal assessments are used. Parents of DMLs attending IEP meetings are provided translators if needed. Copies of the parental rights are offered in Spanish as well as other printed documents related to DMLs educational needs. Translators are also provided for school registration, open house events, and other school functions as needed. Google Translate is a tool all of the participants agreed was useful in communicating with parents. However, not all forms and paperwork going home is being translated. Tina, one of the ELL teachers commented, “All written communication going home needs to be translated. Students are missing out on prizes, etc. when they and their parents do not have the information” (personal interview, September 18, 2019).

Incorporating students' culture into curriculum was described more by the ELL teachers than any of the other participants. The deaf education teachers, sign language interpreters, and the SLP-A all mentioned using books, labeling the classroom in English and Spanish, and learning about family backgrounds as a way to incorporate DMLs' culture into the curriculum. However, Julie, an ELL teacher, described ways she and Tina incorporate culture into the ELL room. All holidays celebrated in America and in the DMLs' and ELLs' culture are celebrated in their classroom as language learning activities. Julie explained,

We celebrate Christmas around the world, Thanksgiving, Mexican Independence Day, Cinco de Mayo, Halloween, etc. Cultural and religion backgrounds are part of our class. Religion is explained from a historical basis, not trying to convert anyone. If a student does not celebrate Halloween, that's okay. We just use that to teach culture and language. (personal interview, September 18, 2019)

The fourth theme identified was use of visuals. Visuals are used both in the assessment process and in the instructional process with DMLs. Visuals used in the assessment process are meant to reduce bias due to language barriers. Visuals are beneficial as students may recognize an object in a picture and not know the word that accompanies the object. Tammy, one of the deaf education teachers who participated in the study described the use of visuals,

We use visuals such as pictures, videos, books and books. We are constantly focusing on language in the classroom, outside on the playground, and even when walking in the hallway as we emphasize objects we see and sign names for the people we pass in the halls. Based on the Fairview Learning Curriculum, we teach ASL signs for words, show the words in print, put the words in English word order, and then rearrange the words to

reflect ASL word order to connect English and ASL. (personal interview, September 16, 2019)

**Research sub-question one.** The themes use of non-verbal assessment and provision of native language access correspond to the first sub-question: What educational assessments are used to determine the language needs of a DML entering a D/HH program? In regard to the initial assessment of a DML, Ruth, the special education supervisor stated,

Multiple observations are obtained in a variety of settings with a variety of observers. Medical information is obtained if possible. Parent input is obtained via translator including family history of hearing impairment. The assessment should be on-going incorporating data for continued readjustments of teaching and learning. (personal interview, September 10, 2019)

Candy is the SLP who completes initial assessments with DMLs at WES. She responded,

As with any other student, data collection/testing are looked at to determine what language needs the student is lacking. We also look at what the students are doing in class and what skills our student needs to accomplish the classroom expectations. (personal interview, September 23, 2019)

Linda, a school psychologist who assesses D/HH and DMLs in the school system where the research took place stated,

In an effort to obtain assessment results that reflect DMLs' cognitive levels without bias due to language barriers, I use a non-verbal measure such as the one associated with the WISC-5, the KABC-2, or the Comprehensive Test of Nonverbal Intelligence. (personal interview, September 23, 2019)

The two ELL teachers, Tina and Julie, mentioned the use of the [World-class Instructional Design and Assessment] WIDA in the language assessment process. Julie also stated, “In our ELL classes, we only work with DMLs who are hard of hearing and use spoken language” (personal interview, September 18, 2019). Kim, one of the deaf education teachers added, “We use observation, parent input, and background information in the determination of language needs for our DMLs” (personal interview, September 16, 2019).

**Research sub-question two.** Three themes (provision of native language access, incorporating students’ culture into curriculum, and visuals are an important part of instruction) emerged to answer this sub-question: What instructional strategies are used in the process of teaching language skills to DMLs? If any DMLs at WES had knowledge of a signed language from their native country prior to enrolling in school there, that was not mentioned during data collection. Provision of native language access at WES occurs in the form of translation software, books, labeling around the classrooms, and translators for school events.

The ELL teachers, Julie and Tina, discussed their availability to general education teachers in assisting in the communication process between school and home. Their goal is to build relationships with the students and parents by helping translate notes in Spanish and other languages through translation apps, helping schedule translators, helping parents navigate websites such as Google Classroom and the Remind app that are often used by teachers (personal interview, September 18, 2019; focus group, September 18, 2019).

ASL interpreters are an important part of the instructional process for many DMLs. Janet, one of the sign language interpreters, discussed an instructional strategy for DMLs as they are learning a signed language. “As students are developing their knowledge of English and a signing system, the language must be matched for each student. Some students want ASL,

others do not” (personal interview, September 16, 2019). Janet also explained an instructional strategy she has used with students. “In order to assist students with comprehending presented concepts, I expand lessons through ASL to provide a more visual explanation of what is being taught” (personal interview, September 16, 2019).

Based on information gained during the focus group discussion (September 18, 2019), incorporating the students’ culture into the curriculum is accomplished through providing written materials (books) in the classroom, celebrating holidays from students’ native country, and by providing collaboration between ELL teachers and general education teachers regarding cultural differences. Mary (SLP-A) incorporates culture into the curriculum through pictures used in therapy sessions and discussions related to students’ activities outside of school (personal interview, September 16, 2019; focus group, September 18, 2019). To obtain information about each DMLs’ family, Kim, a deaf education teacher, sends a letter home in each student’s native language asking for information about the family, their traditions, and anything else they would like for her to know about their culture and traditions (personal interview, September 16, 2019).

The use of visuals is an important part of instruction. Amy, a sign language interpreter at WES explained varying uses of visuals in the instructional process.

As students are learning new vocabulary, they can sign a word, spell the word, and sign it again all while seeing the word in print. Often, students are not making the connection between the word spelled and the word in print. We teach the signs in ASL, use the ASL signs in English word order when reading a story or teaching students to read, then sign the stories in ASL. For older students reading stories with no pictures when the sentences don’t make sense, we highlight phrases then teach the students to flip the words to mirror

ASL word order. For example, after school would be signed “school finish”. (personal interview, September 18, 2019)

Observations completed during the data collection phase all included observing the use of visuals. During an observation completed in the elementary deaf education classroom, of a 1<sup>st</sup> grade math lesson, the teacher, Kim, reviewed the concepts greater than and less than by writing problems on the board. Students each had assigned problems to complete. Kim used alligator magnets that had their mouths open to mimic the greater than and less than symbols. The equal sign was an alligator with a closed mouth. The students placed the magnets in the middle of the two numbers. When finished with the review, the students completed a math test covering the greater than and less than concepts. Students sat at a U-shaped table and dividers were placed between the students to prevent them seeing each other’s papers. Kim assisted students as needed. Around the room there were pictures of signs related to the vocabulary listed (observation, September 18, 2019).

Another observation was in the preschool deaf education class where there were many visuals. The alphabet was displayed around the room along with a visual showing the alphabet in sign language. A Promethean Board was lowered to the students’ height level. An activity was displayed on the screen for a student to move alphabet letters into ABC order. The student used the Promethean pen to move the letters into order with the assistance of a classroom aide. Later during the class period, students participated in dance time. They were given a choice of songs listed on the screen with a visual they recognized. Students took turns choosing the song to dance to. The students were engaged the entire time and mimicked the signs and motions on the screen while singing along. There were lots of facial expressions and voice inflexions the

students mirrored along with the adults. Visuals were a large part of every activity I observed (observation, September 18, 2019).

In the general education setting, I observed Janet interpreting in a writing class for a student in the mainstreamed setting. Janet used a small white board and an Expo marker to assist the student with spelling words. Janet signed the writing prompt to the student and spent time describing the intent of the prompt. The general education teacher walked by and stopped for a short time, but most of the interactions were between the student and the interpreter (observation, September 16, 2019).

Teachers and interpreters were observed reviewing vocabulary with students. Cards were held up for students to show the sign for each word. Words on the cards were written in print with the consonants in blue ink and the vowels in red ink. Amy, sign language interpreter, explained that they even used the different colored letters in the preschool room. The thought process is that they want to be consistent with the older classes. When the preschool students turn five, they start transitioning into the kindergarten classes even in the middle of the year. The students will use the transitional time to learn the schedule and expectations for when they will officially start in the kindergarten class the following year (observation, September 18, 2019).

Visuals are also used for behavior reinforcement. A chart was created for one student with attention issues. Janet, the sign language interpreter, worked with the student in a one-on-one situation. She held up vocabulary cards for the student. The student copied the word “go” then signed “finish” indicating he wanted to stop the activity. Once the student worked for five minutes, a star was given for on-task behavior. When the student earned a star, he received the

choice of a preferred activity for an allotted amount of time. The student chose the computer (observation, September 18, 2019).

The final observation that included visuals was a speech-language therapy session. Although I am fluent in ASL, I did not recognize the hand movements being used by the therapist assistant. She explained that she was using Visual Phonics. She then explained that each hand movement corresponded with a letter sound or blend. The lesson consisted of her showing a card with a picture on it, demonstrating the sound, laying the card on the table, making the sound again using the Visual Phonics movement, waiting for the student to make the sound, and then point to the picture. The two DMLs in the session took turns as instructed. When needed, the therapist assistant used a mirror to demonstrate the tongue placement of letters or sounds and then turned the mirror for the DML to watch themselves make the same sound. The therapist assistant also used an auditory trainer FM system microphone which was synched to the DMLs' trainer so that her voice would go directly to their listening device. Near the end of the session, one of the students was trying to convey the message that a dog chased a cat. The therapist assistant used the visual of a plastic dog and cat to clarify the thought process and idea (observation, September 16, 2019).

**Research sub-question three.** One of the four developed themes, incorporate students' culture into the curriculum, mirrored sub-question four: What instructional strategies are used that incorporate DMLs' culture into the learning process? Data collected regarding culture consistently related to the culture of the DMLs' country of origin rather than deaf culture. The deaf education teachers, Tammy and Kim, both indicated that books with Spanish vocabulary are available in their classrooms (personal interview, September 16, 2019). In answering the interview question: How are the varying cultures of DMLs incorporated into the curriculum?

Tammy stated, “We don’t incorporate culture into the curriculum school-wide, but I know ESL incorporates culture into their curriculum” (personal interview, September 16, 2019). Kim shared a strategy she uses to incorporate culture into her classroom.

At the beginning of the year, or when a new DML enrolls, I send a letter home to families asking them about their family background and asking them to share as much as possible about their family activities throughout the year. By doing that, the interpreters in my classroom and I can have conversations with our students about what’s going on in their lives outside of school. Not only does this give us insight into their family’s cultural experiences, it also provides language-learning opportunities as we are able to introduce new English vocabulary related to our discussions. (personal interview, September 16, 2019)

Mary, the SLP-A explained, “I use curriculum materials that include pictures with student-related culture during my therapy sessions. The pictures help guide conversations with the DMLs” (personal interview, September 16, 2019). No culture-related materials were used during the observations conducted through the data collection process. However, Mary indicated she did have materials available and used them to incorporate students’ culture into their sessions.

Tammy and Julie, the two ELL teachers involved in this study, consistently incorporate students’ culture into the curriculum. Tammy gave examples from their classroom curriculum.

When celebrating various holidays and the cultural celebrations of our students, we involve their parents as well. For example, for our Cinco de Mayo celebration, parents bring tamales. By involving parents, we develop relationships with the families. The parents then feel comfortable coming to us to ask questions about their child’s needs in

other classes. We assist them by helping with translations of written materials and by talking to the general education teachers in a collaborative role as well. Often, as a result of our support in building relationships, we are invited to our students' family activities. (personal interview, September 18, 2019)

### **Summary**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by educators of DMLs at an elementary school in the southeast. The purpose of chapter four was to present the data analysis from the study. I gave an overview of the participants involved, and I presented the results of data analysis of the interview transcripts, observation field notes, and focus group transcripts from this study.

The four themes identified were consistent with the related literature discussed in chapter two and were presented as they corresponded to the research central question and three sub-questions. To ensure confidentiality, pseudonyms for the participants were used throughout this chapter. Quotes from the participants and comments derived from observations were used throughout the chapter as the research questions were answered in narrative form. All quotes from participants are presented verbatim, which includes verbal ticks and grammatical errors in speech and writing to more accurately depict participants' voices.

## **CHAPTER FIVE: CONCLUSION**

### **Overview**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs. Research was conducted at an elementary school in the southeast that houses a deaf education program with 21 D/HH students 10 who are DMLs. One central research question and three sub-questions guided the research. The data collection process included one-on-one interviews with 12 participants, observations of five participants, and a focus group with seven participants. Chapter five includes (a) a summary of the findings, (b) a discussion of the findings and the implications in light of the relevant literature and theory, (c) implications of the study, (d) delimitations and limitations, and (e) recommendations for future research.

### **Summary of Findings**

The findings of this study show professionals involved in the instructional process of DMLs who are intentional about providing services for this unique population to the best of their ability without having the opportunity to attend professional development training specific to the instruction of DMLs. The participants represented various roles in the assessment and instructional process of DMLs. However, each role plays an important part in the assessment and language development process of each DML. The participants in this study have a combined 138 years working with D/HH and DMLs.

In response to the central research question, what educational assessments and instructional strategies that take language and culture into consideration are used in the education of DMLs? The participants' expressed the need to involve parents in both the assessment process

and the instructional process. Parental involvement in the assessment process includes their input related to how the family communicates with the DML and input on what mode of communication the family desires for their child. To involve parents in the language development process, materials are provided in Spanish if needed and pictures of signs related to vocabulary students are learning are sent home with English and Spanish labels.

In regard to language and the language development process with DMLs, the deaf education staff gave in-depth responses to interview and focus group questions as their focus is language development with this population. Language is the focus of curriculum not only in the classroom but also in the hallways as teachers and interpreters introduce sign names for people passed in halls and signs are reviewed for various objects in the school. The ELL teachers also focused on language but incorporated more culture-based activities in the language development process.

Assessments used in determining the language needs of DMLs was the focus of sub-question one, what educational assessments are used to determine the language needs of a DML entering a D/HH program? Because many DMLs come to WES without a knowledge of English or ASL, non-verbal assessments are used in an attempt to gain an overview of the language levels of each student. Non-verbal assessments also help to alleviate bias in regard to language barriers that may produce results that do not represent the actual cognitive level of the DML. Parental input, observations, medical statements, and other pertinent information are also included in the assessment process. ELL teachers used the WIDA in their language assessment process.

In response to sub-question 2, What instructional strategies are used in the process of teaching language skills to DMLs? the use of visuals was a recurring theme. All of the

participants involved in the educational process mentioned the used of visuals. Pictures labeled in English and Spanish (the native language of all of the DMLs at WES), along with a picture of the sign, were available in the deaf education classrooms. The ELL teachers posted various visuals related to language and culture around their shared classroom.

In response to sub-question three, what instructional strategies are used that incorporate DMLs' culture into the learning process? various instructional strategies related to culture were identified. The deaf education teachers send home a letter with their DMLs asking for family background information to develop an understanding of the cultures of each student. This process may also give insight into the educational background and family's expectations related to education as it may differ from the educational expectations in America. Requesting information from families regarding culture and background is consistent with previous literature (Wright Moers, 2017).

Although the deaf education staff had materials in their rooms that included Spanish vocabulary, they did not give specific examples of including cultural activities into their curriculum. The ELL teachers' responses to the interview and focus group questions, however, did provide specific information about how they incorporate students' culture into the instructional process through various holiday celebrations, as well as involving parents during the school year. Gallegos (2017) described similar incorporation of culture into the curriculum at the New Mexico School for the Deaf.

### **Discussion**

The purpose of this section is to discuss the study findings in relationship to the empirical and theoretical literature reviewed in Chapter Two related to assessment and instructional strategies used in the educational process of DMLs. This section provides insight on how this

study corroborates previous research. I also explain how the results add to the field of study and extend the research related to the education of DMLs.

### **Empirical Literature**

The results of this study added to the current literature related to the assessment and instructional process of DMLs as research is lacking (Baker & Scott, 2016), and the population of DMLs continues to increase (Pizzo & Chilvers, 2016). Results from this study support previous empirical literature related to the assessment and instructional strategies of DMLs. Pizzo and Chilvers (2016) discussed the importance of using informal assessments such as observational notes, checklists, rating scales, student work samples and portfolios during the assessment process for DMLs. The WES team mentioned the use of observations many times during data collection. Data collected and analyzed from interviews and the focus group align with the process of assessment required for IEP services based on eligibility determination (IDEA, n.d.; U.S. Department of Education, n.d.).

The assessment team at WES makes every effort to accommodate DMLs and their families through the assessment process. Spoken and written materials are translated into the native language of the student and family, non-verbal assessments are given when students are not fluent in English or ASL, and multiple sources of data are used to obtain comprehensive assessment results of students' cognitive ability without bias due to any language barrier. Many of the accommodations provided for the families of DMLs mirror the accommodations provided at the NMSD. By providing written and spoken translation for the families of DMLs, cultural bias is reduced and trust may be gained. The NMSD also provides training for the staff regarding the various cultures represented (Gallegos, 2017). The deaf education staff provides training for the general education teachers who are working with DMLs at WES. In addition, the

ELL staff provides training for related to ELLs/DMLs for the entire school. In the WES school building, the ELL class is in close proximity of the deaf education classes which provides easy access for continual collaboration regarding DMLs and their academic needs.

The audiological needs of DMLs may vary. A hearing evaluation is part of the assessment process. WES has an audiology sound testing booth on their campus which provides ease of access since the parents do not have to transport their child to another location. In agreement with current literature (Supporting Success for Children with Hearing Loss, n.d.). DMLs at WES use a variety of hearing devices. Some use auditory trainers/FM systems where the teacher wears a microphone that is synched to the DMLs listening device to minimize environmental sounds that may be distracting (American Speech-Language-Hearing Association, n.d.). Other DMLs have cochlear implants, and the remaining students wear personal hearing aids. The decision making process for the most appropriate auditory device for each student is a team effort. The audiologist makes a recommendation and the team discusses the recommendation with the parents before a final decision is made.

The use of visuals as an instructional strategy was a recurring theme both in this current study and in previous research (Alqraini, 2018; Duncan & Lederberg, 2018; Ting, 2014). Visual supports were observed in each classroom where DMLs received academic instruction. Visuals included both pictures of signs and written words. Promethean Boards were used in both deaf education classrooms to enhance instructional lessons. The lessons provided visuals in an interactive way for students to demonstrate knowledge as they completed individual and group activities on the Boards.

For every student in the room to have a clear line of sight to each person communicating in ASL, room arrangement is important. During observed teaching and therapy time, the teacher

and students sat at a U-shaped table with the teacher sitting on the inside area of the table and students sitting along the outside of the table. The room arrangement observed was in alignment with current literature (Horejes, 2012).

Participants in this study expressed varying opinions on the need for incorporating more culture into the learning process. The deaf education teachers incorporated culture into the learning process by seeking information from students and parents regarding cultural activities. Information received was used in conversation to build language, but specific examples of incorporating culture into the curriculum were not given and were not observed during observations.

During an observation of the SLP-A working with two DMLs in the same therapy group, the students were allowed time to talk about events happening outside of school. The students discussed (as well as they could with their language levels) an event where one saw a dog chasing a cat. The SLP-A took the time to assist the students with expressing the story in chronological order and then demonstrated the correct usage of the spoken words (observation, September 16, 2019). Although this is not a specific example of use of culture in the curriculum, the SLP-A was cognizant of the struggle the student was having in expressing her thoughts due to a language barrier and took advantage of a teachable moment. The ELL teachers reported using culture as a foundation for their lessons throughout the school year (personal interview, September 18, 2019) much like the instructional strategy used by New Mexico School for the Deaf (Gallegos, 2017).

### **Theoretical Literature**

Vygotsky's sociocultural theory supported this study. The sociocultural theory emphasizes the importance of one's culture and social interactions within that culture as they

promote thinking skills when directed by knowledgeable individuals (Vygotsky, 1978). Data analyzed from this study emphasized the impact of culture and social interactions. DMLs at WES were observed interacting both in small group learning experiences and in speech-language therapy with teachers, interpreters, and the SLP-A using ASL. The social interactions observed involved children and adults communicating which promoted thinking skills.

During a speech therapy session involving two DMLs who both have Spanish-speaking families and who are early in their English language acquisition process, the SLP-A helped guide the conversation between the two students when they did not have the words to express their thoughts. The student was trying to express that a dog chased a cat. She knew the words “dog” and “cat” but could not sign or speak the other words needed to completely express her thought. By the end of the interaction, both girls were giggling about the dog chasing the cat because they were able to understand what happened (observation, September 16, 2019).

Another observation included an ASL interpreter and a student. The student benefitted from one-on-one assistance and scheduled breaks. The interaction between the interpreter and the student was both academic and social. The interpreter showed the student a card with a word on it. The student was expected to sign each word shown. The student was only expected to work in five minute intervals and then was given a break. However, after a few minutes, he would sign the word shown and then sign “finish” meaning he was ready to be finished with the activity and move to the computer which was his choice for reward when finished. However, the interpreter did a wonderful job of encouraging the student to finish the activity. She gave verbal (signed) praise and did not allow the student to quit. The social interaction was appropriate and necessary for this student (observation, September 16, 2019). This was an example of why it is

important for educators of D/HH and DMLs to complete training in both education and deaf-related topics (Arter, DeMatteo, & Brown, 2015).

Throughout each observation there were multiple adults in the classroom. With the exception of the nurse in the preschool deaf education classroom, all of the adults in both deaf education rooms and in speech-language therapy were fluent in ASL. All observations completed revealed a more casual teacher-student interaction atmosphere than general education classes with many more students. Students were heard calling their teacher by “Mrs. Kim” rather than by “Mrs.” and her last name (observation, September 18, 2019). During the observation of the SLP-A, the DMLs signed the name of the adult but were instructed to use “Mrs.” and her last name the same protocol expected throughout the school building (observation, September 16, 2019).

During the instructional periods, students were given opportunities to interact with their DML peers in the educational setting as they were guided by the adults, or knowledgeable individuals (Vygotsky, 1978), in the room. When DMLs transitioned from their general education class to the deaf education class for small-group instruction, they were given time to interact with the interpreters and their teacher. The conversation included topics about the school day but also about their activities at home the night before. One of the DMLs was scheduled to have surgery soon after my visit. Other DMLs discussed the fact that their friend would be out of school for several days. The adults in the room took the time to answer questions related to the surgery and the time the student would be out of school (observation, September 18, 2019).

As previously stated, the ELL teachers emphasized culture in the learning environment more than the deaf education staff (interviews, September 18, 2019). However, attempts were

made by the deaf education staff to obtain information from each students' families to gain insight that may lead to language learning activities. Information received from each students' families was also used during the assessment process in the event that background experiences may have an impact on the outcome of the testing (personal interviews, September 16, 2019). Parents are consulted as needed during the assessment period to assist in providing clarification on behaviors exhibited that may be related to culture, or for communication being used by the student that may be unfamiliar to the assessment team (focus group, September 18, 2019). Obtaining information from families related to DMLs may also assist in avoiding cultural bias (Pizzo & Chilvers, 2016; Guardino & Cannon, 2016).

### **Implications**

This section addresses the theoretical, empirical, and practical implications related to this study that sought to identify educational assessments and instructional strategies used in the education of DMLs. Recommendations for implementation of the results of the study are included as they relate to administrators and teachers in schools involved in the education of DMLs.

#### **Theoretical Implications**

Vygotsky's sociocultural theory emphasizes the importance of one's culture and interactions within that culture (Vygotsky, 1978). By providing cultural interactions through the curriculum, students may increase cognitive development and learning as they are influenced by adults and peers through the use of cultural beliefs and practices (Guardino & Cannon, 2015). The ELL teachers who participated in this study described their inclusion of students' native culture into the curriculum as they celebrated many holidays throughout the school year. Holidays celebrated included not only American holidays, but also holidays celebrated by

students in their classroom. For students who do not celebrate specific holidays, such as Halloween, language related to the holiday is presented to increase vocabulary without participation in the activities. The various religions practiced by students are also discussed from a historical viewpoint as they relate to culture and cultural interactions.

An important aspect of the sociocultural theory is the placement of students learning a second language (L2) in an educational environment where they receive experiences that encompass social, cultural, and interpersonal skills (Vygotsky, 2012). Professionals involved in the assessment and instructional process of DMLs at WES provide opportunities for their students to interact in social environments in and out of the classroom. Students are given opportunities to interact in the classroom, in speech-language therapy sessions, in the cafeteria, in the hallways of the school, and on the playground. Participants in the study noted that one particular DML was welcomed into the group of soccer players despite the fact that he communicates through ASL and the other players are not fluent in that language. The DML is from Spanish-speaking family, is good at soccer, and is from a similar cultural background as the other players. The DML is given the opportunity to receive experiences that encompass social, cultural, and interpersonal skills (Vygotsky, 2012) throughout the school day and school year.

Parental involvement is an important aspect of the sociocultural theory framework and the educational process of DMLs (Gallegos, 2017). Parents provide insight into the language use and culture of their family and their child throughout the assessment process at WES. Parents of DMLs may not realize the crucial role and impact of their involvement, or lack of involvement, in their child's language development and future academic success (Hendar & O'Neill, 2016). Educators of DMLs at WES attempt to involve parents in the educational process by asking for input regarded to their family culture and background, by providing translators for meetings, by

providing written communication in their language through translation apps and websites, and by involving parents in cultural learning activities in the classroom.

ZPD is another important aspect of the sociocultural theory. This theory serves as an indicator of what a child can achieve independently compared to what the child can achieve in collaboration with others (Vygotsky, 2012). DMLs at WES have the opportunity to learn in the general education classroom with approximately 20 students as well as in the small group setting of the deaf education classroom. Students receiving instruction in the general education classroom have an interpreter with them, but they are expected to achieve independently with minimal pre-teaching and re-teaching. Students in the more restrictive deaf education classroom have the opportunity to receive instruction in a small group environment in collaboration with their peers, a teacher, and interpreters. While the general education classes also provide collaborative opportunities, the deaf education classroom is more of a casual setting where DMLs can typically interact with others more easily than in a general education classroom. Vygotsky's theory emphasizes the need for students learning a second language in an educational environment where they can receive experiences that encompass social, cultural, and interpersonal skills (2012). The WES staff provides these experiences through conversation, peer interactions, culture incorporated into the curriculum, and academic supports.

### **Empirical Implications**

This study was strengthened by the availability of participants involved in the assessment and instructional process of DMLs who have many years of experience in this area. Although none of the participants have had the opportunity to attend professional development training specific to DMLs, they have been proactive in seeking resources that may enhance the educational process. The use of visuals has been found to encourage English language

development (Horejes, 2012). Visuals were observed in every educational setting of DMLs at WES. Visuals included posters on the walls with pictures of objects with a picture of the ASL vocabulary and labels in English and Spanish (when appropriate) in an attempt to encourage English language development. English language development was also reinforced through the use of pictures, written words, and various objects. When asked about strategies used to facilitate communication as DMLs are in the process of learning a new language, pictures and visuals were a recurring answer from the interview participants (personal interviews, September 2019). Visual phonics was used in the speech-language therapy sessions as a way to introduce and reinforce sounds in unknown vocabulary. Visual representations, such as plastic figurines, were used in addition to picture cards in an effort to reinforce vocabulary and concepts presented (personal interview, September 16, 2019; observation September 16 & 18, 2019).

Culture was incorporated into the curriculum through holiday celebrations, conversations, and classroom materials which reiterates the sociocultural theory as it relates to the education of DMLs (Guardino & Cannon, 2015). Literature suggests the importance of DMLs' native culture and communicating with their families remains an important part of their sociocultural experiences (Guardino & Cannon, 2015). The WES deaf education and ELL staff demonstrate a desire to learn about their DMLs' background by asking for family information, providing time for conversation related to the social activities of their students outside of the school day, and incorporating their students' native culture into the curriculum. DMLs placed in a learning environment with educators and professionals who may or may not have an understanding of their culture, background, or learning style, and may experience an impeded learning process (Guardino & Cannon, 2016).

To obtain a comprehensive knowledge of the assessment and educational team involved in the process of DMLs, various professionals were interviewed. Although the deaf education team at WES has many years of experience with D/HH students, they have not received training specific to DMLs. Research states by providing additional training to educators of DMLs related to the cultural and language background of their students, they may be able to complete assessments without bias (Guardino & Cannon, 2016; Pizzo & Chilvers, 2016).

Bias was a topic that resulted in differing opinions during the interviews and focus group. The audiologists felt every student had access to the same language exposure and curriculum in the classroom and there were no differences in the varying cultures (personal interviews, September 16, 2019). The deaf education teachers attempted to reduce cultural bias by learning about students' family backgrounds (personal interviews, September 16, 2019). The ELL teachers felt like cultural bias was an issue because the general education teachers did not always make sending home information in native languages to parents of ELLs/DMLs a priority which caused those students to miss out on opportunities (personal interviews, September 18, 2019). The team attempts to avoid cultural bias in assessment by using non-verbal assessments and other sources of information to make a plan based on a holistic approach (focus group, September 18, 2019).

At the beginning of the school year, the deaf education team and ELL teachers at WES are proactive in providing training for general education staff regarding DMLs. The audiologists train general education teachers on the use of audiological equipment. They are also available throughout the year for hearing checks and to answer any questions that arise (personal interviews, September 16, 2019). Deaf education teachers and interpreters advise general education teachers on the procedures for having a D/HH student and an ASL interpreter in the

classroom (personal interviews, September 2019). ELL teachers conduct a professional development session for the entire faculty and staff regarding ways to facilitate communication with non-English speaking students and their family. They also review useful translation apps and stress the necessity of providing access to information in students' native language to provide opportunities for them to be fully involved in their school. Although according to Linda (personal interview, September 23, 2019) no assessment is 100% bias-free, by utilizing these various accessibility methods, cultural bias and bias in assessment should be reduced (Guardino & Cannon, 2015; Guardino & Cannon, 2016).

### **Practical Implications**

Practical implications from this study were identified. DMLs are unique learners who bring a variety of cultures and backgrounds into the academic environment and who benefit from an emphasis on culture and interactions within their culture throughout the learning process (Guardino & Cannon, 2015). The inclusion of culture and cultural interactions is an important part of the educational process of DMLs as it emphasizes the sociocultural theory (Vygotsky, 1978). By including DMLs' native culture into everyday learning, cultural bias may be reduced (Guardino & Cannon, 2015). Participants in this study varied on their opinions related to cultural bias. One participant responded that she treats others as they want to be treated but that more specific training was needed, one agreed that more training is needed, one participant felt cultural bias was not a problem, two felt DMLs have the same access to language exposure and the curriculum as other students in the classroom, one responded she might be hesitant to send home information in the students' native language because the translation apps may have translated something incorrectly or the parents may not be literate in any language, and six participants agreed that learning about family backgrounds was an important step in including

DMLs native culture into the curriculum (focus group, September 2019; personal interviews, September 2019).

The assessment and educational team involved in this study expressed a desire to participate in professional development related to DMLs if available. Each participant was an expert in their own area and used that expertise in the assessment and/or the educational process of DMLs. Although there have been no available professional development opportunities specifically related to DMLs, the educational team at WES has useful information that could be shared with other schools with DML populations. The practical implication is that this team could collaborate with other DML educators around the country to discuss and determine best practices based on what they are using compared to what other schools are using. They could also discuss what strategies have not been successful and why. As this unique population continues to grow (Pizzo & Chilvers, 2016), more research is needed to determine appropriate educational strategies (Baker & Scott, 2016).

Collaboration between the educational team working with DMLs is important. Topics which may be discussed during collaboration include preferential seating, use of appropriate language, IEP goals, and others depending on the needs of each student (Dostal, et al., 2017). Collaboration among the assessment and educational team supporting DMLs at WES was evident. Throughout the observational phase of data collection, teachers and interpreters in classrooms were observed working together in the instructional process. The SLP and her assistant reported multiple collaborations weekly related to the DMLs. The ELL teachers explained their availability to general education teachers as DMLs become acclimated to the educational setting and throughout the school year as needed. The audiologists provide training at the beginning of each school year for the general education teachers on the use of assistive

technology used in the academic setting to support DMLs. They also provide ongoing consultation throughout the year to address any audiological issues that may arise.

### **Delimitations and Limitations**

This study was delimited to professionals involved in the instructional process of DMLs. Based on the uniqueness of this study, WES was chosen as the setting because their deaf education program includes 21 D/HH students, 10 of whom are DMLs. WES is located in close proximity to my house which provided ease of access to the research site. Participants involved in the study had at least three years of experience working with DMLs. I chose a single case study design because it allowed me to gain information in a natural setting with a common case in an everyday situation such as the classroom (Yin, 2014) while taking into consideration the unique individual needs of DMLs (Cannon, Guardino, Antia, & Luckner, 2016).

A limitation for the study was the number of participants. Due to the uniqueness of the population studied, the number of potential participants was limited. I reached out to two other potential participants (both teachers of the deaf), but neither could participate. The principal of WES also would have been an excellent source and participant for this study, but before I asked, she told me she would allow me to conduct the research in her school but she did not have time to participate. Also, I reached out to two schools for the deaf (one residential the other a day school) within two hours of my home in hopes that they would participate as well. Neither school responded to me. Lastly, I contacted a school system in a nearby state that also has a population of DMLs in their deaf education program. The special education supervisor of that district told me “no” in regard to conducting research there.

### **Recommendations for Future Research**

While insight was gained based on the results of this study, I recommend more research related to the assessment and instructional strategies of DMLs take place using a similar research model. My research was completed in a mainstreamed school setting in the southeast. I believe similar research involving participants in multiple settings in other parts of the United States involved with the instructional process of DMLs would be beneficial including research conducted in residential schools for the deaf involving DMLs.

Current research shows the population of certain groups of ELLs found eligible for special education services is disproportionately represented (Motamedi, Cox, Williams, & Deussen, 2016). Future research related to the assessment of ELLs who are also D/HH is recommended to include strategies to avoid cultural and language bias. Researching the most appropriate standardized assessments to use with DMLs is also recommended.

Cultural bias was a topic that produced varying responses throughout my data collection process. I recommend further study as it relates to cultural bias and strategies to reduce cultural bias in the instructional process of DMLs. Professional development related to DMLs was lacking for the participants of this study. However, participants stated they would be willing to participate in professional development if it was available. Recommendations for professional development related to DMLs includes instructional strategies to reduce cultural bias, incorporating culture in the curriculum, use of visuals to maximize instruction in a classroom with DMLs, and strategies to involve non-English speaking parents into the school environment.

Incorporating DMLs' native culture into the curriculum (other than merely providing written materials in Spanish) seemed to be more of a priority for ELL teachers than for the deaf education staff as they were able to provide specific examples of a focus on culture in their

classrooms. Research related to specific strategies used to incorporate native culture into academic curriculum would be beneficial as well as strategies involving collaboration between deaf education teachers working with DMLs and ELL teachers working with DMLs. These recommendations are a result of the data analysis completed for this study.

### **Summary**

The purpose of this single case study was to identify instructional strategies, that takes into account language and culture, used by professionals and educators involved in the instructional process of DMLs at an elementary school in the southeast. Chapter five included (a) a summary of the findings, (b) a discussion of the findings and the implications in light of the relevant literature and theory, (c) implications of the study, (d) delimitations and limitations, and (e) recommendations for future research. Triangulation of data was supported through analysis of interview transcripts, observational field notes, and focus group transcripts. In relation to the central question and three sub-questions, four themes emerged from the data analysis: use of non-verbal assessment, provision of native language access, incorporating students' culture into curriculum, and visuals are an important part of instruction.

In consideration of Vygotsky's sociocultural theory (2013), DMLs may benefit from an increased participation in cultural interactions in the school setting. The participants in this study gave examples of how they incorporate culture into the instructional setting, but this may be increased by involving parents or other individuals who share the same cultural background as the DMLs. Cultural bias among educators of DMLs may be reduced by increased training through professional development opportunities that offer suggestions for incorporating culture in the curriculum. Day-to-day collaboration between the self-contained teachers of DMLs and their general education teachers may provide an opportunity to communicate students'

happenings at home that may impact the instructional process. Having a school-wide family night where every student has the opportunity to highlight unique aspects of their family may be beneficial in providing an understanding of cultural awareness.

The findings from this research expanded previous research related to assessment and instructional strategies used in the education of DMLs. The participants in this study had many years of experience working with DMLs and their families and were able to provide thorough insight related to the topic of study. Findings from this study are transferable to other school settings where DMLs are enrolled.

The participants involved in this study expressed a desire to further their knowledge related to incorporating culture into the curriculum and reducing bias in the assessment and instructional process of DMLs. However, throughout the data collection process, the participants exhibited a strong work ethic and desire to serve this unique population of students based on the knowledge they gained from research, professional development opportunities, and collaboration with others involved in the instructional process of DMLs. The participants were knowledgeable about each student and their individual needs including the needs of their families in relation to accessing their child's education. Information gained from these participants was beneficial in identifying strategies related to the study.

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**APPENDIX A: IRB Approval Letter****LIBERTY UNIVERSITY.**  
INSTITUTIONAL REVIEW BOARD

August 9, 2019

Christine Thomas

IRB Approval 3831.080919: Educators' Practices Involving Deaf Multilingual Learners: A Single Case Study

Dear Christine Thomas,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. [45 CFR 46.101\(b\)\(2\)](#) and (b)(3). This listing refers only to research that is not exempt.)

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,



**G. Michele Baker, MA, CIP**  
*Administrative Chair of Institutional Research*  
Research Ethics Office

**LIBERTY**  
UNIVERSITY.

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**APPENDIX B: Screening Survey**

Question 1: What is your role in the educational process of Deaf multilingual learners (DMLs)?

Question 2: How long have you been involved in the educational process of DMLs?

Question 3: How long have you been involved in the educational process of DMLs at ---  
Elementary School?

Question 4: Would you be willing to participate in a case study pertaining to DMLs at ---  
Elementary School?

If you answered yes to question four, please provide your name and contact information:

Name: \_\_\_\_\_

Contact Information: \_\_\_\_\_

**APPENDIX C: Recruitment Letter**

September 4, 2019

[Recipient]

[Title]

[Company]

[Address 1]

[Address 2]

[Address 3]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to identify instructional strategies for students who are Deaf multilingual learners (DMLs), and I am writing to invite you to participate in my study.

If you are 18 years of age or older, provide instructional services to DMLs, have provided instructional services for three years or more, have provided services to DMLs at --- Elementary School for three years or more, and are willing to participate, you will be asked to participate in an interview, be available for an observation (depending on your role in the instructional process), take part in a focus group, and review your interview transcript and your portion of the focus group transcript to ensure their accuracy. It should take approximately thirty minutes for the interview, thirty minutes for the observation, thirty to forty-five minutes for the focus group, and 15 minutes to review your transcripts. Your name and/or other identifying information will be requested as part of your participation, but you will be assigned a pseudonym to ensure that the information will remain confidential.

I will use the contact information you provide in the survey to communicate with you about the study.

Sincerely,

Christine Thomas  
Doctoral Student, Liberty

**APPENDIX D: Follow-Up Recruitment Letter**

September 9, 2019

[Recipient]

[Title]

[Company]

[Address 1]

[Address 2]

[Address 3]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctorate degree. Last week an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to respond and complete the survey if you would like to participate and have not already done so. The deadline for participation is one week from today.

If you choose to participate, you will be asked to participate in an interview, agree to an observation (depending on your role in the educational process of DMLs), and possibly participate in a focus group. It should take approximately thirty minutes for the interview, approximately thirty minutes for the observation, and approximately thirty to forty-five minutes for the focus group, and approximately fifteen minutes to review your transcript. Your name and/or other identifying information will be requested as part of your participation, but the information will remain confidential.

Sincerely,

Christine Thomas  
Doctoral Student, Liberty University

**APPENDIX E: Acceptance Email**

September , 2019

[Recipient]

[Title]

[Company]

[Address 1]

[Address 2]

[Address 3]

Dear [Recipient]:

Thank you so much for completing the screening survey related to my study of instructional strategies appropriate for Deaf Multilingual Learners (DMLs). Based on the information you provided, you qualify as a participant in this study. Before beginning the research process, I will need you to review the attached consent form and let me know if you have any questions. When we meet in person for the interview, I will have a paper copy of the consent form for you to sign and give back to me for my records.

Thank you for agreeing to be involved in this study.

Christine Thomas

Doctoral Student, Liberty University

**APPENDIX F: Consent Form****CONSENT FORM****EDUCATORS' PRACTICES INVOLVING DEAF MULTILINGUAL LEARNERS: A SINGLE CASE STUDY**

Christine Thomas  
Liberty University  
School of Education

You are invited to be in a research study on identifying instructional strategies with Deaf multilingual learners (DMLs). You were selected as a possible participant because you play a role in the instructional process of DMLs, you have been involved in this process at the proposed site, and you have been involved in the process for at least three years. Please read this form and ask any questions you may have before agreeing to be in the study.

Christine Thomas, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

**Background Information:** The purpose of this study is to explore instructional strategies, which take into account language and culture, used by educators of DMLs at an elementary school in the southeast.

**Procedures:** If you agree to be in this study, I would ask you to do the following things:

1. Participate in an interview. The interview should last approximately thirty minutes and will be audio recorded in order for a verbatim transcript to be created.
2. Depending on your role in the instructional process of DMLs, be willing to allow me to observe your instructional process. Observations should last approximately thirty minutes, and I will take anecdotal notes throughout the process.
3. Be willing to participate in a focus group. The focus group should last approximately thirty to forty-five minutes and will be audio recorded in order for a verbatim transcript to be created.
4. Review the transcripts from your individual interview and your portion of the focus group interview to ensure their accuracy.

**Risks:** The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

**Benefits:** Participants should not expect to receive a direct benefit from taking part in this study. However, participants who take part in the focus group may benefit from the collaborative conversation with other educators of DMLs.

Benefits to society include the results of the study being used to enhance the instructional process of DMLs.

**Compensation:** Participants will not be compensated for participating in this study.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a participant. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

Participants will be assigned a pseudonym. I will conduct the interviews in a location where others will not easily overhear the conversation. Data will be stored on a password locked computer and may be used in future presentations. After three years, all electronic records will be deleted. Interviews will be recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings. I cannot assure participants that other members of the focus group will not share what was discussed with persons outside of the group.

**Voluntary Nature of the Study:** Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or Hamilton County Schools. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**How to Withdraw from the Study:** If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data if you were a participant, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

**Contacts and Questions:** The researcher conducting this study is Christine Thomas. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [REDACTED] or [REDACTED]. You may also contact the researcher's faculty chair, Dr. Gail Collins, at [REDACTED].

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

*Please notify the researcher if you would like a copy of this information for your records.*

**Statement of Consent:** I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record me as part of my participation in this study.

---

Signature of Participant

Date

---

Signature of Investigator

Date

### **APPENDIX G: Interview Questions**

1. Please introduce yourself to me, as if we just met one another.
2. What is your area of expertise?
3. How long have you been involved with the education of DMLs?
4. Describe your experience with DMLs.
5. How many DMLs are on your caseload, or how many DMLs do you serve each day?
6. How is the mode of communication determined for each DML?
7. How does the level of hearing loss impact the language development of a DML?
8. What process is used to determine the language needs of a DML entering your D/HH program?
9. What strategies are used to facilitate communication as the DML is in the process of learning the new language(s)?
10. What strategies are used to teach DMLs English and their determined mode of signed communication?
11. How are the varying cultures of DMLs incorporated into the curriculum?
12. How is culture bias avoided?
13. What accommodations are provided for families of DMLs with respect to their language and culture?
14. What strategies are used in the initial assessment phase for DMLs who are not familiar with English or ASL?
15. How is language proficiency assessed for DMLs?
16. How are language and cultural bias avoided in the assessment process?

17. We've covered a lot of ground in our conversation, and I so appreciate the time you've given to this. One final question...What else do you think would be important for me to know about the educational process of DMLs?

**APPENDIX H: Example of one Observational Protocol**

3 HH / oral students

**APPENDIX H: Observational Protocol**

1st grade Math		Length of Activity: 30 min.	
<b>Descriptive Notes</b> - Math greater than less than alligator magnets $< > =$ Practice/review on board (ABCs in letter & sign on wall above board)		<b>Reflective Notes</b> Students were able to grasp the concept with the visuals & the explanation that the alligator eats the bigger #.	
Reviewed words - greater than - less than - equal Dividers used to separate students for test - teacher helped each as needed		Visuals around the room provided reinforcement with written & signed vocabulary.  Students sat in close proximity of the teacher. Dividers used were tall enough students could not see over them, but the teacher could still see to help each one.	
(1) addressed teacher by first name deaf culture?		Sketch of the Classroom 	

Written on board

Put magnets on board words

Bookshelves  
Teacher desk

(1) sit on balls & ball chairs

**APPENDIX I: Focus Group Questions**

1. What professional development training has been the most beneficial in preparing you to educate DMLs?
2. When planning, conducting, and reporting assessment activities, how do you take into consideration the varied language experiences of DMLs?
3. What strategies do you use to reduce cultural bias in your classroom?
4. What strategies are implemented to support DMLs as they enter WES?
5. What strategies are implemented to promote communication among your DMLs and other students?
6. What process is in place for collaboration between the educators of DMLs at WES?
7. What strategies are in place to support parents of DMLs?
8. What strategies are in place to provide written communication from the school to the parents in their native language?
9. What strategies are in place to train other school faculty and staff, regarding culture and bias, as they interact with DMLs in the school setting?
10. What additional information would you like to add related to the education of DMLs?

**APPENDIX J: Data Analysis Matrix**

<b>Open Codes</b>	<b>Themes</b>
<p style="text-align: center;">Assessment</p> <ul style="list-style-type: none"> <li>-observation</li> <li>-nonverbal assessment</li> <li>-non-verbal WISC-5 or KABC-2</li> <li>-Comprehensive Test of Nonverbal Intelligence</li> </ul>	<p style="text-align: center;">Use of non-verbal assessments</p>
<p style="text-align: center;">Communication</p> <ul style="list-style-type: none"> <li>-translators</li> <li>-translation apps</li> <li>-materials in Spanish</li> <li>-ASL interpreter</li> </ul>	<p style="text-align: center;">Provide communication in native language</p>
<p style="text-align: center;">Culture</p> <ul style="list-style-type: none"> <li>-curriculum</li> <li>-books</li> <li>-family background</li> <li>-holiday celebrations</li> </ul>	<p style="text-align: center;">Incorporate students' culture into curriculum</p>
<p style="text-align: center;">Instruction</p> <ul style="list-style-type: none"> <li>-visuals</li> <li>-printed words</li> <li>-pictures of signs</li> <li>-interpreters</li> <li>-total immersion</li> </ul>	<p style="text-align: center;">Visuals are an important part of instruction</p>

**APPENDIX K: Audit Trail**

<b>Date</b>	<b>Action Taken</b>
03/24/2018	Research topic selected.
03/24/2019- 05/12/2019	Research and write chapters 1-3.
04/27/2019	Send chapters 1-3 to committee and make corrections.
05/13/2019	Presentation to committee.
08/09/2019	IRB approval.
09/04/2019- 09/21/2019	Conduct interviews, observations, focus group. Create transcripts, make transcripts available to interviewees for review.
09/21/2019- 10/18/2019	Complete chapters 4-5

## APPENDIX L: Reflexive Journal Samples

August 6, 2019

\_\_\_\_\_ Emailed principal of WES explaining my study and asking her permission to conduct my research at her school. I included the IRB conditional approval letter. I realize it's the beginning of the school year and she is very busy, but I hope she emails me back soon so I can start my research.

August 18, 2019

\_\_\_\_\_ Emailed the principal of WES again because I haven't heard back from her. Although I understand she is very busy with the beginning of the school year, but I really need to get started so I can finish this semester.

\_\_\_\_\_ The principal emailed me back and told me she thought I wanted to do my research at the middle school. (I had told the principal in my first email that I met her previously when I was working at the middle school. That must have been the mix-up.) She said she would ask the deaf education staff about being involved in my research.

August 23, 2019

\_\_\_\_\_ Emailed the principal again because I have not heard back from her since Aug. 18<sup>th</sup>. I asked about doing my research September 9-11, 2019.

August 31, 2019

\_\_\_\_\_ Called Dr. Collins and told her I still haven't heard from the principal at WES. She suggested I call the school. I did and was able to talk to the secretary who is a friend of mine. She said she will talk with the principal after the Labor Day holiday.

September 4, 2019

\_\_\_\_\_ Emailed the principal again giving different potential dates (September 16-18) because I haven't heard back. Getting frustrated that I haven't been able to start the research process yet. The semester is going by quickly and I haven't been able to get anything done.

\_\_\_\_\_ The principal emailed back and approved the September 16-18 dates. She let me know that she is unavailable which is a disappointment because I know she would have valuable information to share.

September 10, 2019

\_\_\_\_\_ I am excited to get my research started with Ruth. She has been involved with DMLs for many years and has a lot of experience. I look forward to what I will learn from her.

The interview with Ruth went very well. She was very thorough with her answers and provided lots of information. Her experience as an audiologist and as a supervisor of special education has given her so many experiences. I definitely plan on taking advantage of any opportunity I may have to learn more from her.

September 16, 2019

Today was my first day of research at WES. I loved getting to be around the D/HH population again, even for just a couple of days. I definitely miss using ASL on a regular basis. The deaf education staff was very professional in their interactions. It is obvious they are passionate about their job and their students. I was able to complete several interviews and observations in the deaf ed room, speech therapy sessions, regular education room, and just watching the DMLs transition from class to class as they interacted with teachers and other students.

The coolest thing I saw today was the use of Visual Phonics. The SLP-A used hand movements during therapy. I knew they weren't signs I recognized so I asked about what she was doing. She explained that she and Tammy (deaf ed teacher) went to a training to learn Visual Phonics so they could help the students with speech-related skills. The movements represent different sounds. As the SLP-A said a word, she used a movement for a letter or for letters she wanted to emphasize. The two DMLs in the group were obviously familiar with the method because they mimicked the movements as they said the words and sounds without hesitation.

Everyone was very helpful to me today and seemed excited about my research topic. Many stated they are glad I am doing research on this topic as it is needed.

September 18, 2019

Today was my second day of research at WES. I was excited to go back to learn more. Everything went well as I completed more interviews, observations, and the focus group. The one thing that was a little bit frustrating was when one of the ELL teachers made a comment about the D/HH students who are also ELL. She said that deaf students who sign but don't talk do not come to their class because they don't have a language. Does she mean ASL (or another signed language) is not a language? Maybe that is an area that needs to be covered in a future professional development.

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