Benefits for Whom? Language and Literacy Outcomes for Underrepresented Native English

Speakers in DLI Programs

by

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A dissertation submitted in partial fulfillment of the requirement for the degree of

Doctor of Philosophy

(Educational Psychology)

at the

UNIVERSITY OF WISCONSIN-MADISON

2019

Date of final oral examination: July 18, 2018

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Acknowledgements

This project would not have been possible without the support of my incredible family, friends, and professional mentors. I greatly appreciate the time my committee members, Dr. Quintana, Dr. Albers, Dr. Vlach, Dr. Bal, and Dr. Kaushanskaya, devoted to helping me brainstorm ideas, as well as solutions to roadblocks, throughout the completion of this study. My committee's wisdom and interest in my research has helped grow my knowledge on children's bilingual development and racial and socioeconomic disparities in schools. I especially would like to thank my advisor, Dr. Steve Quintana, for his invaluable support throughout my time in graduate school. I am also grateful for my dear friends, cohort, and caring partner, for their strong encouragement and support throughout my writing process and time in graduate school. They have kept me motivated and encouraged much needed study and work breaks throughout my schooling.

A humble thank you also goes to my data collection team as well as school district staff and administrators, and community center coordinators, who helped advocate for this project and supported me with recruitment. A huge thank you also goes to my study participants. It was insightful getting to meet new families and hear about their language and life experiences. Without all of them, this project would not have been possible.

Finally, and most importantly, I would like to acknowledge and thank my loving family, especially my parents, Amani Hassan and Adil Mukhtar, for all the sacrifices they have made to get me to where I am in my life today and the immense amount of love and support they have given me along the way. My family has supported my education and this dissertation project every step of the way and consistently checked in to ensure that I had all the tools and encouragement I needed to succeed. They are my inspiration.

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Abstract

The purpose of this study was to examine language and literacy outcomes of children from underrepresented groups enrolled in Dual Language Immersion (DLI) programs. Prior studies have illustrated how bilingualism leads to some advantages in executive functioning and language learning tasks. Past research also demonstrates that DLI programs often result in both positive linguistic and general academic outcomes for both native Spanish speaking and native English speaking students. Studies show that when English language learners (ELLs) are taught how to read in their native language, they gain higher levels of reading achievement in English and show greater language comprehension on standardized tests than ELLs not enrolled in the program. Dual language immersion programs have thus increased in popularity because they aim to promote linguistic advantages and enhance the literacies of native English speakers as well as ELLs. No prior studies, however, exist examining the linguistic and literacy outcomes of particular underrepresented groups in DLI programs, namely, native English speakers from low-income backgrounds, African American, and multiracial youth. This study also explored parental perceptions of their children's academic, social, and emotional progress in DLI programs as wells as the executive function performance of bilinguals and monolinguals. Given the importance of literacy skill development, the main goal of this project was to examine the language and literacy outcomes, across race and SES levels for both native and non-native English speaking students in the DLI programs in comparison to children in English language instruction (ELI) classrooms. This study showed greater language and literacy challenges for underrepresented youth within DLI programs, but comparable literacy skills between under-represented youth in DLI and ELI classrooms. This study also points out possible areas of growth within DLI programs and universal supports that may be beneficial for schools.

Benefits for Whom? Language and Literacy Outcomes for Native English Speakers of Low
Socioeconomic Status in DLI Programs

Chapter 1

Introduction

Prior studies have illustrated how bilingualism, the ability to speak and comprehend

two languages, leads to some advantages in executive functioning and language learning tasks

(e.g., Bialystok, 2015; Kaushanskaya & Marian, 2009). Biliteracy programs show promising

results for a country facing growth in linguistic and cultural diversity. In particular, given

growing immigration patterns, greater consideration for the development of international

mobility and government policies directed at maintaining heritage and minority languages has

risen. Additionally, there exist academic and intergroup benefits for bilingual programming.

Dual language immersion (DLI) programs often result in both positive linguistic and general

academic outcomes for native Spanish speaking students and middle class White native-

English speaking students- the two groups predominately served by DLI programs (Thomas &

Collier, 2004). Studies show that non-native English speaking students who are taught how to

read in their native language gain higher levels of reading achievement in English

(Goldenberg, 2008). Many DLI native-Spanish speaking students in DLI programs also

perform better on standardized tests and show greater language comprehension compared to

native Spanish speaking peers not enrolled in the program (e.g., Howard et al., 2003;

Lindholm-Leary & Hernandez, 2011; Thomas & Collier, 2002). White middle class students

also benefit by learning a second language and developing other bicultural exposure. Dual

language immersion programs have increased in popularity because they aim to promote such

linguistic and cultural advantages and enhance the literacies of non-native English speakers.

While research illustrates positive literacy and academic gains for native English speaking students in DLI programs, the specific groups of native English populations examined in research has usually consisted of middle class White students. No studies have examined the linguistic and literacy outcomes of specifically racial minority, native English speakers in DLI programs, particularly, those from low-income families. Specifically, low-income African American students are included in DLI programs but little is known about the benefits, and potentially the challenges faced by these students. The expansion of dual language immersion programs nation-wide leaves parents from African American families asking whether their children can also benefit from them. Research in mainstream English education classrooms also indicates that low-income students of all racial backgrounds are at greater risk for academic failure than students who come from middle or upper class households. Thus, in addition to a paucity of research on African American students in DLI, few studies examine the relationship between socioeconomic status and student outcomes specifically in DLI programs in comparison to students in mainstream English classrooms.

Purpose of the Study

Given the importance of literacy skill development, this study has four main goals. First, I will compare the language and literacy outcomes of children from low socioeconomic status backgrounds to children from middle and upper class backgrounds enrolled in Dual Language Immersion (DLI) programs. Special focus will also be placed on the language and literacy outcomes of native English speaking students, especially African American and multiracial students. Second, I will compare the language and literacy outcomes of both native and non-native English speaking students in DLI programs to students in mainstream English instruction classrooms across socioeconomic status. Third, I will compare the executive

functioning skills of DLI students to those in mainstream English classrooms across SES. Last,

I will explore parental perceptions of the dual language immersion programs and their

children's academic and social-emotional progress within them.

Chapter 2

Literature Review

Introduction

This review has four main areas of focus. First, I review literature that examines the importance of literacy and the findings regarding the literacy gains of low-income students in general education classrooms. Second, I review extant literature on the general benefits of bilingualism, highlighting the "bilingual advantage." Third, I outline the different types of dual language immersion programs and literature that supports their use. Finally, I review the limited literature on how socioeconomic status impacts native English speaking students' language and literacy development in DLI programs and delineate the areas in which more research is needed.

Literacy Development Among Low-Income and Minority Students

General Challenges of Low-Income and Minority Students in Academic Achievement

Children of color experience many academic challenges compared to their White peers (Anthony & Kritsonis, 2006; Lee, Autry, Fox, & Williams, 2008). African American and Latino children are also disproportionately from poor families (Snyder & Dillow, 2013). Additionally, these two racial minority groups score lower on language and reading assessments than European American or Asian American children (Snyder & Dillow, 2013). Relative to White middle-income children, African American and low-income children also face disproportionally greater risk for being unprepared for kindergarten (Lee et al., 2008) and face greater risk for school failure than students of higher socioeconomic status (e.g., Gottfried, Gottfried, Bathurst, Guerin, & Parramore, 2003). The drop-out rate for Latino students is

nearly four times the rate of White students, and suspension and expulsion rates for African American students is three times the rate for White students (Aud et al., 2010).

Additionally, low-income and African American children are reported to have fewer literacy skills, which influences the disproportionality of risk for school failure (Lee et al., 2008). According to the American Psychological Association's (APA's) task force report on educational disparities (2012), African American, Latino, and Native American children, as well as students from some Asian American subgroups, consistently score lower in academic assessments from prekindergarten through twelfth grade, and are usually underrepresented in placement in gifted and talented programs as well as admission rates to postsecondary education, when compared to their White and other Asian American peers.

Racial and socioeconomic disparities in academic performance exist at every stage of children's schooling (APA, 2012). At age four, only 28.3% of minority students, particularly Black, Latino, and American Indian children are proficient in letter recognition, in comparison to White and Asian children, of whom up to 49.4% are proficient (Aud et al., 2011; as cited in APA, 2012). The proportion of 4th grade Black and Latino children reading below grade level is also significantly higher (between 50 and 54%), than the proportion of White and Asian American children reading below grade level, which remains between 21% and 26% in the 4th grade (APA, 2012).

ELL Students and Disproportionality

English language learners (ELLs) are another group at-risk for academic underachievement. At the same time that achievement gaps continue to persist across academic content areas, more rigorous academic demands also continue to be placed on all students, including English language learners (Lee and Buxton, 2013). Today, 1 in 9 students in grades

K-12 are English language learners (Goldenberg, 2008). Language minority students experience the largest gap in educational outcomes from their monolingual English speaking peers in comparison to other groups (e.g., racial minorities; APA, 2012). ELLs achieve lower scores and grades in English language arts and mathematics in comparison to English monolingual speakers (APA, 2012). Data in 2004 from the National Assessment of Educational Progress (NAEP), indicated that ELLs in fourth grade scored 31 points below English speakers in reading (APA, 2012). This achievement gap in reading only increased across grade. By the eighth grade, ELLs scored 41 points lower than English speakers, and 42 points lower by 12th grade (APA, 2012).

The Importance of Literacy: A Predictor of Academic Achievement

Developing foundational literacy skills is critically important for academic success, even before children's formal schooling (Missall et al., 2007). Literacy has been noted as a significant factor in school achievement because it promotes effective reading, which is highly valued and important for social and economic advancement (Jarret et al., 2015; Snow, Burns, & Griffin, 1998). Language proficiency goes hand in hand with literacy since readers must know language in order to make meaning from the words they decode, and to connect strings of words to create larger chunks of meaning (Fortune & Tedick, 2008). Skills such as phonological awareness (e.g., alliteration, rhyming, and word manipulations such as word blending), vocabulary, and letter-naming, are predictive of children's ability to use phonics later, and are important precursory skills for learning to read (Adams, 1990; Snow et al., 1998). These components of literacy that allow a child to decode text are referred to as "inside-out" skills since they require a child's understanding of the rules for translating print into the appropriate sounds and alphabetic principles (Whitehurst & Lonigan, 1998). For example, in

reading, in order for a child to be able to say a sentence from the print on the page, she must know letters and sound, understand print concepts, and be able to make links between the letters and the sounds to properly decode it.

Additionally, children must also learn "outside-in" processes which are a child's understanding of information outside of the particular printed words that are read. Outside-in skills include the knowledge of standard print formats (Whitehurst & Lonigan, 1998). Print is what a child reads and writes and includes several elements such as knowledge of letters, punctuation, spaces between words and paragraphs, and even the fact that English text is read in a left-to-right fashion (Cunningham, 2009). These print concepts, all translate into familiar spoken language (Cunningham, 2009). Outside-in processes involve children's understanding of what they read and represent the child's knowledge of the world, semantic and syntactic knowledge, as well as the ability to produce and understand narrative (Whitehurst & Lonigan, 1998). For example, a child may have the inside-out skills to read a sentence aloud, but still may not be able to make meaning of it. Doing so requires that the child understand the narrative, conceptual, and semantic context in which the sentence is found, and an understanding of how the sentence makes sense within its context (Whitehurst & Lonigan, 1998). Together these "inside-out" and "outside in" skills build the foundation for reading (Missall et al., 2007).

The fundamental literacy skills that often lead to effective reading are: vocabulary, phonics, phonological awareness, reading comprehension, and fluency. Vocabulary is developed by naming objects around children and reading fiction and nonfiction to them. Vocabulary plays a central role in reading acquisition (Poe, Burchinal, & Roberts, 2004). Language and literacy share a reciprocal relationship. The development of a higher vocabulary

often leads to literacy, but reading enhances an individual's vocabulary. Most literate adults have a large vocabulary gained through their encounters with text (Fortune & Tedick, 2008). Phonics skills allow a child to decode new written words by sounding them out, or *blending* the sound spelling patterns. Phonological awareness refers to the specific ability to focus on and manipulate individual sounds (phonemes) in spoken words (Cunningham, 2009). Phonemes are the smallest unit of sound in a word, that combine to form syllables and full words. Acquiring phonological awareness is thus the foundation for spelling and word recognitions skills. Reading comprehension is the ability to put words together and understand what they mean (Cunningham, 2009). Fluency is the ability to read most words in context quickly, accurately, automatically, and with appropriate expression (Cunningham, 2009). Fluency is important for reading comprehension because of the nature of human attention (Cunningham, 2009). A human brain can attend to only a limited number of things at a time. If most of an individual's attention is focused on decoding words, then there is little attention left for the comprehension of those words (Cunningham, 2009).

Many studies have shown that the development of early literacy skills is critical for strong reading skills (e.g., Poe et al., 2004; Cunningham & Stanovich, 1997). Whitehurst & Lonigan (1998) conducted a longitudinal study with 367 children. They measured components of their "inside-out" skills such as phonological awareness, as well as "outside-in" skills through standardized vocabulary tests, from Head Start to second grade using a structural equation model to predict reading outcomes in second grade (Poe et al., 2004). Reading was assessed through standardized assessments in first and second grade (Whitehurst & Lonigan, 1998). The researchers found that the children's early vocabulary skills in preschool ("outside-in" skills) predicted their phonological knowledge ("inside-out" skills), which in turn predicted

the children's reading skills in first and second grade. The study highlighted the importance of building core literacy skills, such as vocabulary and phonological awareness, to develop reading skills. Some studies have even noted direct and indirect long-term reading success of children who develop strong early literacy skills (e.g., Butler, Sheppard, & Sheppard, 1985; Wagner et al., 1997). Reading abilities measured in kindergarten have also been found to be predictive of reading achievement through the fourth and sixth grades (Butler et al., 1985; Wagner et al., 1997).

How SES and Race Influence Language and Literacy Achievement

Given the impact of language and literacy on children's future reading and other academic successes, many have explored the achievement gap in reading and literacy development among at-risk racial groups and low-income students. When children first enter schools, they already display vast differences in language and early literacy development and educational opportunities (National Assessment of Educational Progress, 1999). Race and social class have been noted as factors that significantly impact children's literacy achievement (Jarret et al., 2015). Within the United States, African American children in particular, are found to have fewer literacy skills, and are disproportionately at-risk for school failure (Lee et al., 2008), compared to their White peers. Students from lower socioeconomic backgrounds also face greater risk for school failure than students of higher socioeconomic status (e.g., Gottfried, Gottfried, Bathurst, Guerin, & Parramore, 2003).

In one prominent study examining the disparities associated with race and class on African American children's vocabulary, Hart and Risley (1995), collected vocabulary growth data using the Peabody Picture Vocabulary Test-Revised (PPVT-R) from 42 families, 13 of which were of upper-class socioeconomic status, 10 from middle-class SES, 13 lower-income

SES, and six families on welfare (Hart & Risley, 1995). Socioeconomic status accounted for differences in the African American children's vocabularies, with those that were of lower SES scoring lower than those coming from middle and upper class families (Hart & Risley, 1995). Observational data was also collected from the families, and it was discovered that parents on welfare spoke less and used more discouraging words and phrases with their children, which was associated with smaller vocabularies in their children. For example, explicit disapproval was usually directed at "you" as stated in an evaluation, "you're being bad" (Hart & Risley, 1995). Prohibitions that specified "Don't," "Stop,", or "Quiet," as well as statements explicitly disapproving of the words or actions of the child like "Wrong" or "Bad" (Hart & Risley, 1995) also were coded as "discouraging" words. On the other hand, families from upper and middle classes talked more and used more encouraging words and phrases with their children (e.g., "That's right" and "Good"), resulting in their children's larger vocabularies (Hart & Risley, 1995). The study highlighted a possible impact of socioeconomic status on specifically children's vocabulary development, controlling for race.

In another study that focused on African American children, a demographic group noted as most at-risk for reading failure, the researchers examined the gap in literacy achievement associated with socioeconomic status among 77 African American youth (Poe et al., 2004). The researchers examined the relationship between language skills, phonological knowledge, and print processing skills at pre-kindergarten, and kindergarten, with reading at pre-kindergarten through second grade (Poe et al., 2004). The researchers found that language and phonological awareness were two important predictors of the successful acquisition of reading among all of the children. It was also discovered that children who experienced higher quality child care, started school with better vocabularies and developed stronger reading skills

than those with lower quality child care, suggesting that child care quality and vocabulary size at entry to kindergarten are related to reading outcome (Poe et al., 2004). Relative to children from impoverished environments, those children who experienced enriched literacy environments during early childhood also were found to enter school with better language skills, and better language skills, in turn, predicted better reading skills in second grade when children were expected to read for comprehension as well as for decoding (Poe et al., 2004). Socioeconomic status influences the ability of parents to afford tools and resources such as quality child care that contribute to children's school outcomes. The Poe et al. study thus illuminates the importance of developing interventions to redress disparities and improve the quality of low-income African American children's home and childcare environments as these factors may have important consequences for children's language development, and ultimately, their reading skills (Poe et al., 2004).

Literacy Interventions

Many researchers have designed evidence-based literacy interventions and screening assessments for children at-risk for developing low reading and literacy skills. In several schools today, standardized literacy interventions and measures such as *Sound Partners, Fast Forword*, and Individual Growth and Development Indicators of Early Literacy (IGDIs), have been used to track children's early progress with developing literacy skills, track age- and grade-based benchmarks, and intervene for struggling readers' literacy skills.

Sound Partners (Vadasy et al., 2004) for example, is an evidence-based intervention program approved by What Works Clearinghouse. It is a phonics-based tutoring program that provides supplemental reading instruction to elementary school students in grades K-3 with below average reading skills (WWC Intervention Report, 2010). The program's scripted

instruction emphasizes letter-sound correspondences, phoneme blending, decoding and encoding phonetically regular words, and reading (WWC Intervention Report, 2010).

Researchers examined the program's efficacy with 40 at-risk first graders of minority status, half of whom were also of low SES, by randomly assigning them into either a control group or treatment group (Vadasy, Jenkins, Antil, Wayne, & Connor, 1997). The treatment group received individual instruction through the *Sound Partners* intervention four days a week for up to 23 weeks (Vadasy et al., 1997). The control group received only regular reading instruction in their classrooms. The treatment group outperformed the control group on all reading, decoding, spelling and segmenting, and writing measures (Vadasy et al., 1997). The results point to the efficacy of the intervention for struggling low-income and minority children at-risk for reading failure. Similar findings were discovered when Sound Partners was implemented with first grade children at risk for learning disabilities (Vadasy, Jenkins, & Pool, 2000), as well as with second grade students with both reading and behavioral difficulties (Marchand-Martella et al., 2002).

Another intervention, *Fast Forword*, has also been used to assist struggling readers. The intervention is a computer-based reading program that helps students develop the cognitive skills necessary for successful reading and learning. The literacy series of the program aims to improve skills in memory, attention, processing, sequencing, phonological awareness, and knowledge of language structures (WWCH Intervention Report, 2013). In a study examining the program's effectiveness by using a randomized control trial with second and seventh grade inner city students at-risk for poor reading and language outcomes, the intervention was not found to be effective in helping students improve their language and reading comprehension test scores (Borman, Benson, & Overman, 2009). However, in another

randomized control study by the Scientific Learning Corporation (2004) examining the effects

of the intervention specifically in the comprehension domain with academically at-risk students

in grades K-3 in urban schools, statistically positive differences were found between children

in the treatment *Fast Forword* group, and the comparison group on the Test of Auditory

Comprehension of Language- Revised (TACL-R). Similar statistically significant positive

results were found among first and second grade students in the *Fast Forword* group in

comparison to a control group on outcomes for the Degrees of Reading Power test in another

study (Scientific Learning Corporation, 2005).

Possible reasons for these discrepancies may be due to challenges with the successful

completion of intervention due to difficulties with school scheduling. In the middle school in

Borman et al.'s (2009) study for example, it took two weeks before all of the classroom

teachers understood the intervention schedule and sent students at the appropriate times to

begin the training. Additionally, some students sometimes completely avoid attendance or

delay the start time of the intervention in order to engage in school electives which sometimes

overlap with the starting time of the *Fast Forword* intervention (Borman et al., 2009). While in

some schools scheduling may be less of a barrier, these challenges still reflect common

difficulties encountered in schools that try to implement standardized literacy interventions

during the busy school day. In addition, the inconsistencies found in the literature for the

general effectiveness of *Fast Forword* further delineate the need for more research on methods

for improving struggling children's literacy and language skills.

One limitation, is that most studies only examine the literacy skills and the use of these

interventions with at-risk populations in general education classroom settings, thus neglecting

at-risk youth in other settings. Another approach would be to also examine different

educational programs such as language immersion classrooms to determine if emergent

bilingual students (children who are in the process of developing a new language) may have

different language and literacy skills than students in general education classrooms and what

literacy gaps may exist across various groups in such settings given the different teaching style

that takes place. Another limitation is that the implementation of interventions during the

school day requires that a child miss classroom instruction time or electives. In closely

examining and manipulating existing classroom contextual and environmental factors that may

influence literacy, researchers may find that greater literacy skills may be gained without the

need for a pull-out literacy intervention. In the case of language immersion classrooms for

example, the factor influencing literacy and language development may be the structure of the

program model itself.

Bilingualism and Executive Function Benefits

Researchers have noted many benefits to bilingualism in executive functioning (e.g.,

Bialystok et al., 2004; Bialystok & Viswanathan, 2009; Kaushanskaya & Marian, 2009). For

example, bilingualism has been noted as a factor that increases cognitive reserve, thereby

delaying the onset of Alzheimer's disease (Craik, Bialystok, & Freedman, 2010); Schweizer,

Ware, Fischer, Craik, & Bialystok, 2012). Bilinguals have also been found to outperform

monolingual speakers in tasks involving the executive control network (Sebastián-Gallés,

Albareda-Castellot, Weikum, & Werker, 2012). The executive control network is thought to be

active when the cognitive system involves decision-making, planning, detecting errors, giving

novel responses or overcoming habitual actions (Callejas et al., 2005). Executive control

generally entails response suppression, inhibitory control, and cognitive flexibility (Bialystok

& Viswanathan, 2009). Some of the tasks that are often used to measure attentional executive

control are thus those that manage conflict between reflexive functions, thoughts, or actions, and desired atypical responses, novelty, and error detection (Posner & DiGirolamo, 1998). Advantages for bilingual persons have been found in executive control on tasks that target flexibility (e.g., a symbol reorganization task; Peal & Lambert, 1962), understanding the arbitrary nature of numeric symbols, ignoring misleading features of a number concept task (Bialystok & Codd, 1997), understanding object constancy (Feldman & Shen, 1971), spatial problem-solving (Bialystok & Majumder, 1998), generating multiple hypotheses on a physical science problem (Kessler & Quinn, 1980), and creativity and geometric design (Ricciardelli, 1992). Collectively, such executive function benefits compose what has been termed "the bilingual advantage."

The flanker task has been used to identify executive control and attention abilities in bilingual children (Rueda et al., 2004). In this task, children view 5 directional arrows or objects such as fish with a central arrow or object among them. With the example of fish, children must use arrow keys to feed the central fish by indicating which direction the fish faces, while also dealing with potential distractions from the flanking fish that swim in either the same direction (congruent trials) or in a different direction (incongruent trials; Bialystok, 2015). Incongruent conditions generally elicit longer response times (RTs) than congruent or control trials (Coderre, Smith, Van Heusen, & Horwitz, 2015). The difference in response times between the incongruent and congruent conditions (the flanker effect) or incongruent and control conditions (the interference effect) measures the ability of the individual to overcome cognitive conflict (Coderre et al., 2015). It has been found that bilingual children often respond at a faster rate and with greater accuracy in this task in comparison to monolinguals (Bialysok,

2015; Costa et al., 2008). These results suggest that bilinguals may have superior strengths in response suppression, attention, and inhibitory control.

Other tasks that assess executive functioning include the Simon task and the Stroop task (Martin-Rhee & Bialystok, 2008). The Simon task is a reaction time task in which subjects choose among colored stimuli on either the right or left side of a screen associated with a left and right key press (Martin-Rhee & Bialystok, 2008). A congruent trial is one in which a key press accurately corresponds to the position of the stimulus on the screen (Martin-Rhee & Bialystok, 2008). An incongruent trial is when the correct key and stimulus position conflict (Martin-Rhee & Bialystok, 2008). In this case, subjects must ignore the position of the stimulus and pay attention only to the color of the stimulus (Martin-Rhee & Bialystok, 2008). Increases in response time with incongruent trials relative to congruent trials represent the Simon effect (Simon, 1969). The Stroop task is a paradigm similar to the Simon task. In one variation of the assessment, subjects are told to press one of two keys depending on if the stimulus circle presented is shaded or striped (Martin-Rhee & Bialystok, 2008). Stimuli are presented on either the right or left of the screen and keys are at the opposite sides of the screen representing both congruent and incongruent conditions (Martin-Rhee & Bialystok, 2008). In each of these tasks inhibition is required. Participants must choose between responding to the more salient, but incorrect stimuli and the less salient, but correct stimuli. One must tune out the irrelevant stimulus that is more salient in order to achieve accuracy (Martin-Rhee & Bialystok, 2008). Studies that have used the Stroop and Simon tasks have found bilinguals outperform monolinguals (Martin-Rhee & Bialystok, 2008). Studies have also examined effects across age groups, comparing monolinguals to bilinguals. Across each of the age groups including young (20–30 years old; Bialystok, 2006), middle-aged (30–60 years old), and older (60–80 years

old) adults (Bialystok et al., 2004), bilinguals consistently demonstrated a smaller Simon effect and completed the Simon task more efficiently than monolinguals (Martin-Rhee & Bialystok, 2008).

To understand the degree and type of inhibitory control that advantages bilinguals, Martin-Rhee and Bialystok (2008) utilized the Stoop and Simon tasks with children. Through a three-part study, the researchers found that bilingual children between the ages of four and seven performed better than monolinguals in the Simon task, but only in conditions that required a high level of inhibitory control (Martin-Rhee & Bialystok, 2008). Additionally, when bilinguals and monolinguals were compared in their performance on tasks requiring inhibition of their attention to a specific cue (in a Simon task), and inhibition of a habitual response (in a Stroop task), researchers found that bilinguals continue to outperform the monolinguals on attentional control tasks, but not on response inhibition tasks (Martin-Rhee & Bialystok, 2008). Inhibition tasks specifically require overriding a familiar response to a stimulus and replacing it with a contrary response which requires attentional control (Martin-Rhee & Bialystok, 2008). The children in the study were also all selected from a demographically homogeneous area of the city and had similar socioeconomic status' along with other demographic characteristics so it is unlikely that bilingual advantage found in the study was not due specifically to the bilingual experience of the children (Martin-Rhee & Bialystok, 2008). The Martin-Rhee and Bialystok study helps clarify specific bilingual advantages related to attention and response inhibition.

The advantages associated with bilingual children has been extended to low SES (income and education) families compared with middle-class monolinguals (Carlson & Meltzoff, 2008). For example, it was even found in young bilingual children growing up in

low-income immigrant families in Luxembourg in environments that might negatively impact

or even impede healthy brain development and impact executive control performance (Engel

de Abreu et al., 2012). These findings suggest that the advantages of bilingualism may

transcend social disadvantages that often challenge children's cognitive development and that

bilingualism may sustain or enhance advanced cognitive functioning abilities even in

significantly adverse conditions (Guzmán-Vélez & Tranel, 2015).

Despite some of the research showing executive functioning abilities to be a strength

for bilinguals, some more recent studies have challenged the existence of a bilingual advantage

(Paap & Greenburg, 2013; Paap & Liu, 2014; Kousaie & Phillips, 2012). For example, Kousaie

and Phillips (2012) tried replicating previous findings of a bilingual advantage using a Stroop

task with both young and old nonimmigrant monolinguas and bilinguals and found no

differences in the magnitude of Stroop interference between the two groups. Their lack of

finding of a bilingual advantage challenges prior research and suggests possible limits to the

robustness of prior studies (Kousaie & Phillips, 2012). Many factors may contribute to the

group differences on tasks assumed to measure executive function and it can be challenging for

one study to match or hold constant all the factors (Paap & Liu, 2014; Paap & Greenburg,

2013). This conflicting research highlights a need for further studies exploring the bilingual

advantage.

Bilingualism and Brain Imaging

The advantages for bilinguals in cognitive, executive control, language, and word

learning tasks has also been found to correspond to structural differences through brain

imaging. Studies have used magneto-encephalography (MEGs) and functional neuroimaging

studies (fMRIs) to examine the brain structures and neural networks associated with language learning (e.g., Marian, Spivey, & Hirsch, 2003; Coderre et al., 2015).

Kovelman, Baker, & Petitto (2008), directly compared how highly proficient English-Spanish bilinguals and English monolinguals process linguistic information when participants completed the "Sentence Judgement Task" while undergoing fMRI and had their blood oxygen level-dependent (BOLD) signals measured. The sentence judgement tasks require participants to note semantic violations in English and Spanish sentence structures by determining if sentences were plausible or implausible (Kovelman et al., 2008). The aim was to determine if speaking two languages modifies the classic language-dictated neural sites and pathways underlying human language processing (Kovelman et al., 2008). A main region in monolinguals that participates in all aspects of language processing, including morphosyntax, semantics, and phonology, is the left inferior frontal cortex (LIFC; Kovelman, et al., 2008). While both groups performed similarly on the sentence judgement task, the researchers found that bilinguals had a significantly greater increase in the blood oxygenation levels when processing English than English monolinguals. This finding highlights that bilinguals may recruit a larger region of the brain's classic language processing tissue than monolinguals (Kovelman et al., 2008).

Recently, researchers have also discovered that bilingual adults have denser gray matter in their brains, especially in the left hemisphere which controls most language and communication skills (Mechelli et al., 2004), specifically in the left inferior parietal cortex. This region is associated with second-language acquisition and directly corresponds to an area that has been shown by functional imaging to become activated during verbal-fluency tasks (Warbuton et al., 1996). The level of language proficiency and the age of language acquisition

have been found to modulate the degree of the brain's grey matter density (Mechelli et al., 2004). The densest grey matter in the left hemisphere is found among those who learned a second language before the age of five. This study suggests that developing as a bilingual from an early age alters the physical development of the brain's structure.

Furthermore, the basal ganglia circuit is well associated with language acquisition and learning, but has also been found to be implicated in higher level executive functions, particularly shifting (Knowlton et al., 1996; Stocco, Yamasaki, Natalenko, & Prat, 2014). Bilingualism has been proposed to "train the brain" in ways that improve executive functioning skills by shaping the basal ganglia circuit, and other areas involved in executive functioning (Stocco et al., 2014). Similar to switching tasks, switching from one language to another requires the capacity to override the signals from a network of brain regions that are still active. This is particularly difficult in the case of languages since languages are largely automatic and have overlapping neural underpinnings (Stocco et al., 2014). As bilinguals continue to practice and use their two languages, however, they increase the ability of the basal ganglia to exert control over established cortico-cortical connections, resulting in flexibility in the ability to reroute signals to the frontal cortex. The frontal cortex is important for forming and maintaining an internal representation of rules (Wallis, Anderson, & Miller, 2001), relationships (Wendelken, Nakhabenko, Donohue, Carter, & Bunge, 2008), and goals (Miller & Cohen, 2001). The activation of frontal cortex is one proposed mechanism underlying the bilingual advantage in executive functioning that has been tested and proven true in a study by Stocco and Prat (2014). English speaking bilinguals with a variety of different L1s in the study were found to act faster than monolinguals in a Rapid Instruction Task Learning (RITL) paradigm. The RITL task requires that participants respond accurately to new instructions

presented at the beginning of each trial (novel tasks). Bilinguals executed novel rules at a faster rate than monolinguals, a finding that was associated with a greater modulation of activity in the basal ganglia (Stocco and Prat, 2014).

The most widespread explanation for the bilingual advantage is that bilinguals often have two language networks in their brains that are constantly active (Bialystok and Craik, 2010). When choosing to speak in one language over another, bilinguals must tune out the irrelevant language. In other words, bilinguals must constantly make additional computations to inhibit one of their two languages so that only one is used even though both are active and potentially available whenever they speak (Bialystok & Craik, 2010; Costa, Alario, & Sebastián-Gallés, 2009). It may be that managing two languages helps the brain sharpen — and retain — its ability to focus while ignoring irrelevant information.

Bilingualism and Language Learning

Research has also shown a bilingual advantage in novel word learning (Kaushanskaya & Marian, 2009). In a study with adults by Kaushanskaya and Marian, monolingual English speakers, early English-Spanish bilinguals, and early English-Mandarin bilinguals were exposed to novel words and taught their English translations (Kaushanskaya & Marian, 2009). When the participants' memory was tested through recall recognition tasks administered immediately after the novel word learning and a week later, it was found that both bilingual groups outperformed the English monolingual group, suggesting that there exists a bilingual advantage for novel word learning (Kaushanskaya & Marian, 2009).

Having learned a second language and acquiring the concomitant cognitive skills associated with bilingualism, studies also suggest that it is easier for bilinguals to acquire a third language (L3), than it is for monolinguals to acquire a second language (e.g., Abu-Rabia

& Sanitsky, 2010; Albert & Obler, 1978; Jacobsen & Imhoof, 1974). Abu-Rabia and Sanitsky (2010) administered cognitive and metalinguistic tests as well as language knowledge tests to sixth graders from Israeli schools who were studying English as a second or third language. The two groups compared to one another were Russian Israeli children for whom Russian was their native language and Hebrew was their second language and a control group of native Hebrew speakers (Abu-Rabia et al., 2010). Both groups were found to have similar proficiency on the Hebrew measures. The findings give more support to the notion that knowledge of several different orthographies (writing conventions for a language such as spelling, word breaks and punctuation) enhances rather than diminishes L1 (first language) and L2 (second language) proficiency (Abu-Rabia et al., 2010).

Barac and Bialystok (2012) also supported the idea that similar languages are easier to learn by measuring the performance of six-year-old children from 4 linguistic groups (English monolinguals, Spanish-English bilinguals, French-English bilinguals, and Chinese-English bilinguals) on three verbal tasks. The tasks measured the children's language proficiency through receptive vocabulary, grammatical ability, and metalinguistic knowledge (Barc & Bialystok, 2012). French and Spanish share cognates with the English language and have similar grammatical structures to English (Barc & Bialystok, 2012). Chinese, on the other hand, does not share those linguistic features with any of the other languages and is also a tonal language that does not use an alphabetic system the way French, English, and Spanish do (Barc & Bialystok, 2012). Due to these perspicuous linguistic differences between the Chinese language and the other languages, it was predicted that the Chinese-English bilinguals would not perform as well as the other groups (Barc & Bialystok, 2012). All groups were assessed in English. Indeed, Chinese-English bilinguals were found to perform worse on the verbal tasks

than the other groups. The Spanish-English bilinguals performed as well as the English

monolinguals on two verbal tests, and significantly better than the monolinguals on the

metalinguistic task (Barc & Bialystok, 2012). This finding suggests that language similarity

mediates children's performance on verbal linguistic tasks and also lends some support for the

benefits of bilingualism for metalinguistic skills.

The degree of typological similarity between two languages also has important

acquisition and pedagogical implications (Genesee, 2004). The closer the typology of two

languages, the more transfer is likely to occur (Cenoz, 1998) and, thus, the acquisition of each

of the languages will be facilitated (Genesee, 2004). Typological distance may influence the

development of not only literacy skill acquisition, but also oral communication skills (Genesee,

2004). In particular, bilinguals who speak two languages with many cognates, may be able to

use their knowledge of the oral pronunciation of a word in one language to recall a forgotten

vocabulary word in the other language. This strategy may be used by Spanish-English

bilinguals for example, since Spanish and English share many words that have the same Latin

root and origin.

Antoniou, Liang, Ettlinger, and Wong (2015) tested the hypotheses that closely related

languages may be easier to learn and that certain phonetic features could be universally more

difficult to acquire. The researchers compared Mandarin-English bilinguals to monolinguals in

their performance on their learning of vocabularies that differentiated words using foreign

phonetic contrasts. They found that the Mandarin-English bilinguals learn phonetic distinctions

better than monolinguals and that they showed an advantage in learning both the Mandarin-like

and English-like artificial languages presented to them (Antoniou et al., 2015). The results

were also consistent with past literature that has demonstrated that bilingualism assists in the

acquisition of non-native language features, possibly due to the cognitive advantages that have been attributed to bilingualism (Bartolotti & Marian, 2012; Kaushanskaya & Marian, 2009).

Additionally, researchers have found that the bilingual experience may modulate children's attentional systems even without explicit training or feedback (Sebastián-Gallés et al, 2012). Sebastián-Gallés et al. (2012) compared 8-month-old Spanish and Catalan monolingual and bilingual infants in their ability to notice differences between two unfamiliar visually presented languages, French and English. Infant responses to the presented languages were recorded by tracking their eye gaze and recording each infants' looking time (Sebastián-Gallés et al., 2012). They found that both bilingual infant groups, the Spanish-Catalan and French-English bilinguals, were able to visually detect when foreign languages switched from one to the other, while the monolingual groups could not (Sebastián-Gallés et al., 2012). This finding suggests that bilingualism enhances the attentional system's ability to detect and remember perceptual information in talking people's faces from a very early age even when infants have never seen or heard the language before (Sebastián-Gallés et al., 2012). The finding that bilinguals can discriminate between such complex stimuli without any feedback, also provides evidence of bilinguals' cognitive processing advantage from infancy and posits that these cognitive advantages may stem specifically from the abilities and skills involved in separating languages (Sebastián-Gallés et al., 2012).

Biliteracy

In addition to learning how to speak and detect two languages, many children also develop biliteracy skills. Biliteracy is defined as "the acquisition and learning of the decoding and encoding of and around print using two linguistic and cultural systems in order to convey messages in a variety of contexts" (Pèrez & Torres-Guzmàn, 1996, p. 54). Researchers suggest

that children may take a variety of different paths to develop biliteracy, including from homes, communities, and schools (Bauer and Gort, 2012). Some emergent bilingual children learn to read and write in two languages at the same time; this process is referred to as simultaneous development of biliteracy (Bauer and Gort, 2012). This method is often followed in the context of schools with classroom programs that teach children in two languages (Bauer and Gort, 2012). Some children may even develop biliteracy without formal instruction (spontnaeous biliteracy), a phenomenon observed by Reyes (2001) in her study of Spanish-English emergent bilinguals. Context, such as home literacy practices, as well as personal characteristics, play an important role in the process of children's biliteracy development (Bauer and Gort, 2012). Additionally, it has been noted that emergent bilinguals may sometimes engage with literacy tasks and activities in a language that they do not yet fluently speak (Moll et al., 2001). This suggests that the literacy abilities of an emergent bilingual may at times, exceed their oral fluency in that language and that proficiency in a language does not necessarily need to precede literacy development (Bauer and Gort, 2012). Emergent bilinguals may even be stronger writers than readers in either of their two languages (Bauer and Gort, 2012). These findings highlight how the development of biliteracy is not unilinear, but rather, that there exist a variety of diverse ways in which children can progress and develop biliteracy (Bauer and Gort, 2012).

In addition to studies that outline the benefits of bilingualism for language learning, researchers have also noted advantages related to the development of the specific literacy skills involved in learning two languages. Biliteracy advantages exist for language and literacy development across both languages in the bilingual's repertoire (Bauer and Gort, 2012). Biliteracy is thus viewed as a dynamic and flexible process (Bauer and Gort, 2012) with the

transfer of language skills between languages. Indeed, Giambo and Szecsi (2015) note that "language and literacy skills in one language support and facilitate the development of literacy skills in another language" (p. 57). Empirical studies have suggested that bilingual children display stronger general understanding of literacy and print systems in their two languages, especially when the languages share similar writing systems (Giambo and Szecsi, 2015). When languages share orthographic similarity, children's abilities and strategies (e.g., decoding skills) in one language transfer to the other language (Giambo and Szecsi, 2015). The development and knowledge of literacy skills in one language, can therefore enhance the literacy skills in another language (Bialystok et al., 2005).

This benefit was illustrated in a study by Baker et al. (2012) with two groups of native Spanish speaking English learners (ELs) who were followed longitudinally for three years beginning in the first grade to assess reading development. One group was in a bilingual program, the others were in an English-only program (Baker et al., 2012). The groups each included students at-risk for reading failure (Baker et al., 2012). Students completed their state standardized reading proficiency assessment, the Oregon Assessment of Knowledge and Skills (OAKS), the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) test for a measure of oral reading fluency, and the Stanford Achievement Test- Tenth Edition (SAT-10) to measure various aspects of reading achievement (Baker et al., 2012). A notable finding was that all ELs in the bilingual program made greater gains in the English oral fluency tests than did ELs in the English only program. The authors suggest that the similarity between Spanish and English in oral and written forms may have assisted the native Spanish speaking students in their application of linguistic fluency from one language to another with consistent practice in both of their languages (Baker et al., 2012). Additionally, Baker et al. (2012) propose that it is

plausible that ELs in the bilingual program who received reading and writing instruction in two languages, may have developed a higher metalinguistic awareness of the structure of languages that benefitted their fluency performance in English (Baker et al., 2012). Another finding was that the reading comprehension scores of children in the bilingual program, who were at-risk for reading difficulties in 2nd grade, were higher than those of the at-risk EL students in the English only programs (Baker et al., 2012). Taken together, these findings suggest that reading skills may be enhanced for emerging bilingual students when they are taught to read and write in two languages and that this learning strategy may be particularly useful for students at-risk for reading difficulties.

In another study, Jared et al. (2010) further illustrated the benefits of biliteracy by examining how important literacy skills in one language could be predictive of literacy skills in another language. Jared et al. (2010) also longitudinally tested students for three years beginning in the 1st grade. The students were all emergent bilingual children enrolled in a French language immersion program and completed several reading achievement tests assessing: vocabulary, grammar, phonological awareness, word reading accuracy, word reading fluency, letter-name and letter-sound knowledge, and passage reading and comprehension abilities (Jared et al., 2010). Cross-language correlations of reading measures revealed that several assessments administered in French in the early school years, including phonological awareness and word identification, were predictive of 3rd grade level English reading abilities (Jared et al., 2010). Additionally, phonological awareness, letter-sound knowledge, rapid automatized naming, and grammatical ability in English were predictive of French reading abilities (Jared et al., 2010). This study further demonstrates that important literacy skills in one language can easily transfer to assist students in their development of

reading skills in another language, and that learning to read and write in two similar languages simultaneously, is not a hindrance to children's future linguistic and literacy development outcomes. In addition, the study uses a wide breadth of literacy measures to reach its conclusions thus bolstering support for its findings.

Dual Language Immersion Programs (DLI)

Given the outlined benefits of second language acquisition, including benefits for language learning and biliteracy, bilingual development may serve as an important tool for reducing literacy gaps for low-income and minority children. Dual language immersion (DLI) programs, also referred to as two-way immersion programs, may be positive outlets of support for children who struggle most with literacy and language development. Language immersion education programs are characterized by: (a) instructional use of the immersion language (IL) to teach course subjects a minimum of 50% of the preschool or elementary day (typically into 5th or 6th grade and sometimes continued at the middle and secondary school levels); (b) promotion of additive bi-or multilingual literacy with sustained enriched instruction through two languages; (c) employment of teachers who are fully proficient in the language(s) they use for instruction; (d) reliance on support for the majority language in the community at large for majority language speakers and home language support for the minority language for minority language speakers; (e) and a clear separation of a teacher's use of one language over another for sustained periods of time (Fortune & Tedick, 2008). The aim of DLI programs is to develop language minority and language majority students' academic skills and knowledge in line with school and district standards while developing children's competence in a new language (Fortune & Tedick, 2008).

Dual language immersion programs, include approximately even numbers of students in each classroom who speak the majority language (e.g., native English speakers), and who speak a minority language (e.g., native Spanish speakers). Two-way immersion programs aim to promote bilingualism and biliteracy among both groups of children. The programs achieve this goal by using each of the student groups' native language for literacy and academic instruction during certain subjects (Fortune & Tedick, 2008).

Additionally, bilingual education is considered a content-driven approach by valuing academic content and the development of proficiency in the target language as equally important factors for the mastery of academic objectives (Genesee, 2004). As such, content serves as the vehicle for second language instruction, and content instruction provides students opportunities to acquire the target language, similar to how native speakers acquire their first language from meaningful, significant, and sustained communication with others (Fortune & Tedick, 2008). As a result of the model, students' acquisition of a second language in DLI programs is often incidental to the learning of academic skills and knowledge and is said to occur naturally (Fortune & Tedick, 2008). Content-based language instruction in DLI programs is also time conserving. By integrating second language instruction with academic instruction, educators in DLI reap the pedagogical benefit of efficiency since significant time does not need to be set aside for the purpose of directly teaching a second language (Genesee, 1987). Many studies have observed that students who participate in DLI program models achieve significantly higher levels of functional proficiency in the second language while acquiring appropriate competence in academic subject matters in comparison to children enrolled in traditional foreign language classrooms (Howard et al., 2003; Lindholm-Leary, 2001).

Given their outlined benefits, dual language immersion programs have expanded in prevalence. The number of programs grew from just 41 in 1990 to 284 by the year 2000 (CAL, 2006). The Center for Applied Linguistics' two-way immersion directory reports 458 programs in 29 states existed in 2012 in the US, including the District of Columbia, and this number continues to grow (CAL, 2012). Although Spanish-English programs are the most common, there also exist programs that partner with English in other languages such as Cantonese, Mandarin, Korean, Navajo, and French (Fortune & Tedick, 2008).

Two different models of dual language immersion programs exist: the 50-50 model and the 90-10 model. In the 50-50 two-way bilingual immersion program, minority language students are instructed in both English and their native language for equal amounts of time throughout the program (Gomez, Freeman, & Freeman., 2005). In many 50-50 programs, all students first learn to read in their primary language and then the second language (Gomez et al., 2005). Another is the 90-10 two-way immersion program in which all students are instructed in the minority language (e.g., Spanish) 90% of the time in early grades, and gradually become exposed to an increasing proportion of instruction in English until 4th grade, at which point both languages are used equally (Gomez et al., 2005). An example of the percentage for 1st graders in a 90-10 model in a Spanish-English immersion program would be that 80% of language instruction would be in Spanish, and 20% would be in English.

DLI programs also aim to enhance levels of children's intercultural sensitivity and to produce bicultural beings (Fortune & Tedick, 2008). Simply by the nature of the program's composition, students in dual language immersion classrooms are not only exposed to the language aspect of a culture that may be different from their own, but also other cultural distinctions such as norms, mannerisms, beliefs, and values. Studies have shown evidence of

DLI programs developing children's' positive cross-cultural attitudes (Cazabon, 1993; Freeman, 1998). Other distinguishing features of DLI programs thus include: the integration of language, culture, and content; the encouraging of peer-peer communication through classroom interactional dynamics; and the development of equitable and socially respectful student relationships through cooperative learning strategies (Fortune & Tedick, 2008). The development of biculturalism (a strong orientation to both dominant and heritage cultures) has a positive impact on students' development and subjective well-being (Chen, 2015). In a recent meta-analysis of 83 studies, researchers found positive associations between biculturalism, and psychological and sociocultural adjustment (Nguyen and Benet-Martínez, 2012). This link was found to be significantly stronger than the association between one individual cultural orientation (dominant or heritage), and adjustment (Nguyen and Benet-Martínez, 2012).

Academic and Linguistic Advancement of Students in DLI

In addition to the cultural and linguistic advantages of DLI programs, several studies illustrate the enhanced academic progress that diverse minority and majority language students make in the program in comparison to children in general education classrooms. In particular, many dual language immersion programs gain their advancing support from studies that have illustrated that at-risk groups such as non-native English speaking Latino youth, and low-income minority language speakers, gain greater language and literacy skills in their native language, when taught both in English and in their heritage language (e.g., Cheung & Slavin, 2012; Lindholm-Leary & Hernandez, 2011; Lindholm-Leary, 2001).

For example, in one study examining the language proficiency and achievement outcomes of 732 Latino 4th through 8th grade students enrolled in DLI programs who differed in language proficiency, Lindholm-Leary & Hernandez (2011), found positive results. The

Latino students were separated into three different language proficiency groups: English

proficient native English speakers; native Spanish speakers who started school as ELLs (EP),

but developed proficiency in English and were reclassified as Fluent English proficient

(RFEP); and native Spanish speakers who enrolled in school as ELLs and continued to be

classified as such (Lindhold-Leary & Hernandez, 2011). Students' achievement was assessed

through the English Language Arts subtest of the California Standards Test (CST), and English

Language proficiency was assessed through the California English Language Development

Test (CELDT), and the FLOSEM, the Stanford University Department of Education oral

language proficiency rating scale. Latino students in DLI programs were found to achieve at or

above their peers in English mainstream classrooms, including the two subgroups of ELL

students (Lindholm-Leary & Hernandez, 2011). Interestingly, the RFEP students (the most

bilingual subgroup) were found to score the highest on almost all of the measures assessed,

highlighting how DLI programs help them to continue developing their Spanish and English

oral language proficiency and literacy to levels that exceed those of current ELLs, EP peers,

and EPs in mainstream English classes. These results demonstrate how bilingual Latinos in

DLI show greater achievement levels than their monolingual English-speaking peers and

Spanish-speaking Latino peers and underscore the importance of providing instruction in both

languages through a dual language immersion program model (Lindholm-Leary & Hernandez,

2011).

In another study, Montanari (2014), 60 children enrolled in an Italian–English dual

language (DL) program were assessed with a variety of measures for literacy including the

Oral Reading Fluency (ORF) task. Findings revealed that native Italian speaking children

developed reading skills that were better than grade level in English in the dual language

immersion program in comparison to peers that were not (Montanari, 2014). This finding supports the possible long-term benefits of dual language instruction for English reading development.

In addition to findings supporting the advancement of language and literacy among ELL students in DLI programs, other studies also demonstrate the benefits of DLI for low-income ELL students across other academic subject areas such as math and science. For example, Thomas and Collier's (2002) conducted a five-year research study on K-12 language minority (LM) students and low-income students in DLI programs. They assessed student achievement through school district standardized test measures and also included qualitative analysis from school visits, interviews, and surveys (Thomas & Collier, 2002). Findings not only supported that ELLs immersed in dual language immersion programs attain higher achievement in reading than ELLs immersed in English mainstream classrooms, but also found that ELLs in DLI attained higher achievement in math than ELLs in English mainstream classrooms. Additionally, it was found that ELLs in mainstream English classrooms have higher rates of dropouts than those in the bilingual programs (Thomas & Collier, 2002). The findings suggest that low-income at-risk students' participation in DLI programs may help them evade low achievement levels in STEM areas and school dropouts- two areas that they often over-represent.

Another recent study further highlighted the extended academic benefits of DLI programming by exploring the effects of an English-Spanish dual language immersion program on 4th through 6th grade low-income Latino children's outcomes in STEM areas (Tran et al., 2015). Latino students are an underrepresented group in STEM fields and finding ways to build on their strengths in math and science content areas in early schooling may help bridge the gap

that exists between them and their White peers. Indeed, according to studies from the National

Research Council (2000, 2007) and the National Science Foundation (2008), when children are

taught STEM content through methods that acknowledge and build on their strengths, promote

collaboration, and provide access to meaningful content, all children can acquire stronger

communication skills as well as critical thinking and problem solving skills. Minority language

speaking English learners, and low-income students have been often found to have less access

to such learning opportunities in comparison to native English speaking White students and

thus have significantly fewer opportunities to develop foundational knowledge in math and

science in Elementary and Middle schools (e.g., Lee and Avalos, 2002; Oakes, 1990; as cited

in Tran et al., 2015).

Given the span of research outlining the benefits of DLI programs on children's

academic and social outcomes, Tran et al. (2015) tested Latino youth's math and science

outcomes. The students enrolled in DLI classrooms were found to perform significantly better

in mathematics and science courses (as assessed by standardized examinations) than children

in mainstream English classrooms (Tran et al., 2015). These results were obtained even after

controlling for ethnicity, gender, special education eligibility, and free/reduced lunch

participation, and further expands on the noted benefits of DLI programs on academic content

areas beyond reading and writing (Tran et al., 2015).

(Gaps in Research) Limitations and Future Directions

Although many positive outcomes have been found for students enrolled in dual

language immersion programs generally, including those who are at risk, most studies have

focused on the gains and outcomes of non-native English speaking students, and few studies

have demonstrated the outcomes of at-risk native English speaking populations in these

programs. Of particular importance are at-risk populations within the native English speaking groups in DLI programs such as socioeconomically disadvantaged students. Of the few studies that have explored particular outcomes for majority language students, it has been found that in regards to L1 development, majority language speakers sometimes achieve a level of L1 comparable to that of students in L1 programs (Genesee, 2004). This is consistent with the notion that DLI programs are additive in nature, meaning that the acquisition of a second language does not interfere with or impede the development of a student's native language (Fortune & Tedick, 2008). Although this pattern suggests that low SES may not negatively impact native English speakers' overall academic development in DLI, other studies have noted specific impacts of SES (Genesee, 2004). Children with lower SES than their middle and upper class peers within DLI programs usually score significantly lower than their middle and upper class peers in the same program, as is true for low SES students in single language general education classrooms (Genesee, 2004). This finding suggests that SES does in fact impact majority language speakers.

In regards to L2 development, studies have found that low SES majority language students in DLI programs generally outperform children in traditional second language programs on all measures of second language proficiency (Genesee, 2004). Some studies even show that they perform as well as middle class immersion students on speaking and listening comprehension assessments (Genesee, 2004). On the other hand, some literature illustrates that low SES native English speakers in immersion programs score significantly lower than their middle class peers on tests of reading in English (Genesee, 2004). Taken together the results from the few studies that explore this population, highlight a need for further research on the effects of socioeconomic status on majority language speakers in DLI programs.

A Focus on African American and Multi-Raced Populations

The few studies that have explored the relationship between SES and majority language children's literacy and language outcomes have usually focused on White children (e.g., Caldas and Boudreaux, 1999). Thus, in addition to the lack of thorough research exploring the impact of lower socioeconomic status on the literacy and language outcomes of majority language students in DLI programs (e.g., English speakers), there is also limited research exploring how the ethnic and racial group status of majority language speakers enrolled in DLI programs impacts their academic outcomes. Given that African American youth are the population most at-risk for reading failure and low academic success in U.S. schools (Lee et al., 2008), more research needs to be conducted with this particular population.

In a case study of two elementary DLI schools located in metropolitan areas of the Western United States, Scanlan and Palmer (2009) used a critical epistemological approach to analyze the dynamics of race, power, and inequality in dual language immersion programs. Drawing from both Critical Race Theory (CRT), and Latino/a Critical Race (Lat/Crit) theory, the researchers analyzed and addressed issues of marginalization and nonlinguistic dimensions of diversity as they relate to admission and retention practices in the two schools (Scanlan & Palmer, 2009).

In one of the schools, "Medgar Evers", the demographic population was ethnically and racially diverse with one classroom out of three general education classrooms serving as a DLI program at each grade level (Scanlan & Palmer, 2009). Although African American and Latino students made up the majority of the general student population, African American students were found to make up only 5% of the school's DLI programs. Conversely, the mainstream classrooms were filled with approximately 50% African American students. A nearly even

number of White and Latino students made up the immersion classrooms. When questioned about why there are so few African American children in DLI, teacher and administration responses highlighted some critical covertly and overtly racist as well as deficit-ridden views on African American students and gatekeeping processes. Due to the low number of school personnel that reach out to even inform African American families of the program, African Americans were at a disadvantage in even having knowledge about the existence and benefits of the program (Scanlan & Palmer, 2009). On the other hand, the White families were already well aware, and publicity of the programs highly circulated in their communities (Scanlan & Palmer, 2009). If the message even did get out to the Black families, they often entered the school lottery for the programs too late. According to a staff member at Medger Evans, only one of ten slots ever goes to a Black family (Scanlan & Palmer, 2009).

Furthermore, subtle gatekeeping existed in the form of key personnel's attitudes and beliefs towards the appropriateness of DLI education for African American students. Some staff members noted that DLI programs may not be appropriate for African American students given that "they don't know Standard English" and that they do not have the early experiences to build language (Scanlan & Palmer, 2009). One teacher stated, "I don't know how to help African American kids learn Standard English", and another shared a concern that the Latino children in DLI were "copying the behaviors of those African American kids (who are) more of a behavior problem" and that they were causing the English learners to come out speaking Black English. Collectively, these beliefs, practices, and concerns, highlight a deficit orientation towards Black students and stereotyping that leads to the exclusion of Black students from DLI, and faulty beliefs of their incompetence to learn and "properly" use language. The study also supports how some teachers generally have very low expectations for

African American students (Obiakor, 1999). Rist (1970) observed that from kindergarten, low-income Black children were given less positive feedback, called on less, and given less attention from teaches than their White middle class peers. These actions have the potential to lead Black children to adopt a "self-fulfilling prophecy", which has also been observed in longitudinal studies (Rist, 1970).

The exclusion of many African American students from DLI was not only characteristic of schools examined in Scanlan and Palmer's (2009) study, but also nationwide with most Spanish-English immersion classrooms consisting of Latino and White students, leaving Black children overlooked (Anthony & Kritsonis, 2006). The study highlights an important point about access, privilege, and selection for admittance into DLI programs. Indeed, given the smaller number of African American students in most DLI programs, studies have overlooked examining this specific population's literacy and language outcomes. Studying African Americans in DLI is critical since their numbers in the programs are slowly growing (Anthony & Kritsonis, 2006). However, because many Black children are from low SES and resource contexts, they are at elevated risk for academic failure (Anthony & Kritsonis, 2006). Missing from the study's analysis was the voice of parents and their perceptions and thoughts on the DLI program structure, challenges they felt their child faced in it, and their perception of their child's gains in the program. Gaining a parent's perspective on the overall socio-cultural environment that their child is a part of in the DLI program is critical for gaining a greater understanding of how welcome, comfortable, and acknowledged students may feel in the DLI program. For this reason, my study will also explore parental perceptions of the socio-cultural environment in each DLI program classroom.

One concern that the teachers in Medger Evers school voiced, that a few other scholars have considered, is how African American English (AAE, also known as Ebonics) may influence children's academic learning in schools that instruct in "Standard English." Many would consider AAE as a different dialect of English from that which is spoken in schools. Today, while the nation's ethnic and linguistic diversity continues to grow and students from diverse backgrounds make up more than 45% of the PK-12 population, the analysis by Staklis and Matthews (2012) in the National Center for Education Statistics, showed that teachers of color made up only 17.5% of the total educator workforce. Given that White native English speaking teachers make up the majority of educators in our nation, it comes as no surprise that African American speakers of AAE rarely are instructed in AAE (National Center of Education Statistics, 2012). Black children who speak AAE, may thus experience a linguistic discrepancy in their home and school environments which may cause difficulties in their adjustment to the "Standard" American English taught in schools. Furthermore, the extent of the dialectical discrepancy between the children's two languages of exposure, may even cause difficulties or delays in the initial development of critical literacy skills.

Research on Black AAE speaking communities show many fundamental linguistic differences between AAE and Standard American English. Sociolinguists have observed that Black students learn different structural rules for their respective English dialects (e.g., phonology, vocabulary, and grammar) as well as different cultural rules for when and where to use their dialects in different settings (Ogbu, 1999). One difference lies in the pronunciation of words. For example, in AAE there is the deletion of the final consonant in words like 'past' (pas') and 'hand' (han'). Double negatives are a specific syntactic feature of AAE often used for emphasis (e.g., "I ain't got no candy"; Grant, Oka, & Baker, 2009). Additionally, the b, d, or g

at the beginning of auxiliary verbs often is dropped such as with 'don't' and 'gonna', yielding "Ah 'on know" for "I don't know" and "ama do it" for "I'm going to do it." (Rickford, 2004). AAE also includes cues, gestures, and nonverbal sounds that are systematically used in communication by some Black children (Smith, 1994). These distinctions are not random errors but instead systematic rules of speech linked to a history that has been passed down through generations of African Americans (Grant et al., 2009).

In studying at-risk populations in DLI programs and in an effort to bridge achievement gaps between minority students and their White peers, it is important to consider the impact that AAE may have on the linguistic and literacy development of African American children. Some consider AAE to be another language of Black students, and describe it as a "mother tongue" of some African American children, just as Spanish may be a native language to the Hispanic child (Anthony & Kritsonis, 2006). Under this conceptualization, Black children exposed to AAE at home, may enter into DLI programs learning not one, but two new languages (e.g., Standard English AND Spanish). Few studies have critically examined this possible impact on African American children's literacy outcomes.

Additionally, little research examines the language and literacy outcomes of children that are two or more races. Because data from the school district in which this study was conducted suggests that multi-raced children also have academic school performance that often falls far below that of their White peers, special attention was given to this population as well as to the impact of low-income status.

Based on the literature reviewed above, there exist two possible outcomes for African American students' academic development in DLI programs. Due to studies showing that languages similar in typology are more easily learned and that children who are already

bilingual can more easily learn a third language compared to dissimilar languages (e.g., Abu-Rabia et al., 2006, Barc & Bialystok, 2012), African American children may not exhibit any linguistic or literacy development challenges in DLI programs, and may even outperform other African American children and other racial groups who are not bilingual or in bilingual classrooms. Alternatively, the noted disadvantages of low socioeconomic status, racial minority status, and linguistic minority status, coupled with the pressure to learn a foreign language (or two), may result in African American children immersed in DLI programs exhibiting a greater strain and disadvantage in the attainment of language and literacy outcomes than African American children in mainstream English classrooms. In this study I explore the latter hypothesis. Additionally, given the documented challenges for multi-raced children in schools and discrimination that they face (Kich, 1992), it is predicted that the language and literacy outcomes of multi-raced children may also lag behind those of White peers.

Regarding the impact of socioeconomic status on children's language and literacy development across program models, it is predicted that low income children in DLI classrooms and Mainstream classrooms may have lower linguistic achievement in the languages they were assessed in, compared to middle/high income children.

Some literature suggests that it takes approximately seven years for a child to become fully bilingual if immersed in a second language (Conger, 2009). Given this number and the age range (8-11) of children assessed in the current study, it is not expected that the children in DLI classrooms will differ significantly in their overall English language and literacy skills in comparison to those in Mainstream classrooms. Some research however, suggests that students immersed in a DLI program for seven years or longer, often excel in their native language

skills with the added advantage of being bilingual in comparison to peers in mainstream programs, (Howard et al., 2003; Lindholm-Leary, 2001). It is thus predicted that African American, multi-raced, and Latinx youth will not perform significantly worse than matched race peers in Mainstream classrooms. This study addresses how DLI programming may impact specific underrepresented student populations and if there may be any evidence to suggest that alternate interventions may be needed to support *all* children's access to and involvement in bilingual programming. This study's research questions are as follows:

Research Questions

1. How do the language and literacy outcomes of native English speaking children of low SES compare to those of middle/upper SES native English speaking children in DLI programs?

2. How do the language and literacy outcomes of native English speaking children in DLI programs compare to those of children in mainstream English classrooms, controlling for SES level?

3. Are there differences in language and literacy scores of African American, Multi-raced, and Latinx youth in DLI compared to White youth in DLI?

4. Are there language and literacy differences comparing native English speaking African American and Multi-raced children of low SES to those of middle/upper SES native English speaking African American and Multi-raced children in DLI programs?"

5. Are there differences in executive function between children that are bilingual and children that are monolingual after controlling for SES?

6. "How do the English language and literacy skills of native Spanish speaking Latinx youth in DLI compare to those in Mainstream English classrooms?

7. What are parents' perceptions of the social and cultural environment within DLI programs and what do parents believe is the impact of DLI programming on their children's social, emotional, and academic growth?

Chapter 3

Methods

This study explored the literacy and language outcomes of native English speaking children enrolled in DLI programs and compared their outcomes to those of children enrolled in mainstream English classrooms. In this chapter, I describe 1) the research design, 2) data collection process, 3) participants and setting, and 4) measures used to address the research questions.

Research Design

Due to the nature of the research questions, this was an exploratory study where a comparison across instruction (dual-language or English-instruction), social class (low-income or middle/high income), and race (African American/Multi-raced/Latinx or White) cross-sectional design was used. The independent variables were the program model, race, and SES. Children were enrolled in either a dual language immersion program or mainstream English classrooms. These two groups were compared at a single point in time without any adjustments or manipulations of their environments. The purported 'intervention' in this nonexperimental study was participation in the dual language immersion program. Students in the DLI classroom setting comprised the criterion group. Children in the mainstream English classroom were the comparison group. The criterion variables were the students' language, literacy and executive function outcomes. These outcomes were assessed through various measures once during the year. Children enrolled in DLI programs completed literacy and language assessments in both English and Spanish. Children in mainstream English classrooms completed literacy and language assessments in only English.

To address the first and second research questions--how well native English speaking children from low SES groups develop language and literacy skills in DLI programs, and the role of SES in the language and literacy outcomes of both children in the DLI and the non-DLI classrooms in general-- data collected from children of low SES was compared to data from middle/upper SES in DLI programs. Additionally, on all measures administered in English, children from both SES groups enrolled in DLI programs, were compared to children of both low and middle/high SES enrolled in mainstream English classrooms. Comparisons were made across low income children separately and across middle/high income students separately.

To address the third research question focused on the outcomes of African American, multi-raced, and Latinx students, separately, the measurement outcomes of African American, multi-raced, and Latinx students in DLI programs were compared to African American, multi-race, and Latinx children in mainstream English classrooms and socioeconomic status differences were also explored between and within groups. Given that AAE could serve as a confounding variable for students who may identify as either bi-racially or mono-racially African American, English dialect was also accounted for in this study by briefly sampling language dialect from each student. The data analysis explored how native English speaking children with dialects other than mainstream American English (MAE) compared to matched students in mainstream English classrooms and socioeconomically matched students within DLI programs in their language and literacy outcomes. Because the district in which data was collected has very few African American and multi-raced students enrolled in DLI programs, this question was focused on the recruitment of as many African American and multi-raced students as possible, regardless of SES background, to explore their general language and

literacy outcomes across program models in comparison to White peers. Efforts were made to match the samples for SES when possible.

To address the fourth research question--how language and literacy scores compare among the focal group of African American and multi-raced children in DLI classrooms when SES is controlled for-- English and Spanish data was collected and comparisons were made between groups (e.g., low SES African American and multiracial students and middle/upper SES African American and multiracial students).

To address the fifth research question of how executive function skills differ between bilingual and monolingual children when SES is controlled for, children in both DLI and non-DLI classrooms were compared on an experimental task (Flanker task).

To address the sixth question exploring the language and literacy outcomes of Latinx youth, the scores on English language and literacy assessments for native Spanish speaking Latinx youth in DLI classrooms were compared to those in Mainstream English classrooms.

To address the final research question of parental perceptions of the socio-cultural context of their children's classrooms, an open-ended interview was used to learn more about parents' perspectives such as why a parent may have chosen to enroll their child in a DLI classroom, and what they see to be the benefits/challenges of their child's classroom setting and social interactions with those different or similar to them. Qualitative data was also used to shed light on findings from the quantitative analysis.

Data Collection

Recruitment efforts involved the distribution of materials to various schools across the district, and community outreach which included posting flyers around the community and presenting the study at after-school programs, schools, and parent events across the district and

surrounding cities. With approval from the school district to recruit from schools, cover letters (Appendix A) and flyers (Appendix B) explaining and advertising the study were sent home to parents with their students along with consent forms (Appendix C). All materials were distributed to parents in both English and Spanish as appropriate. Parents then made decisions about their involvement in the study. If they choose to participate, they were asked to return their signed consent form as soon as possible. To avoid any hardships on school personnel in the collection of consent forms, the parent cover letters asked that parents directly email their forms. For those who returned paper copies to the school, a collection envelope was set up in the school's main office for consent forms. Teachers were only asked to distribute the study invitation materials to their students during class.

The researcher worked with each school to ensure that the distribution of consent forms posed minimal demand for the school personnel. An email detailing the study and the date on which forms would be dropped off in the school's main office was sent to each school's administrator (Appendix D). The primary researcher was responsible for distributing packets of materials for students in each participating teacher's mailbox. Cover letters were also included for teachers (Appendix E). Interested parents who learned about the study from a flyer in the community, contacted the primary researcher directly to set up an appointment to participate.

Upon a family's return of a signed paper or electronic version of the consent form, the primary researcher called and/or emailed to schedule a time to meet with the family at a public library closest to their home in a private study room for participation in the study. This strategy allowed for reduced barriers related to accessibility, especially for families from low-income backgrounds. Parents were informed that the study would take approximately 1 hour of their time if their child was enrolled in a mainstream English classroom, and approximately 1.5

hours if their child was enrolled in a DLI classroom. Parents were also notified that they would be requested to complete a couple questionnaires and may be asked to participate in a brief interview. While parents completed these tasks, their children worked with the lead researcher in a separate room in completing all the assessments in either one or two languages as appropriate. At the end of the study, both the parent and the child were compensated for their time.

Once a family arrived at the public library, the lead researcher reviewed the consent form with the parent, obtained verbal assent (Appendix F) from the child, and then provided the parent with the study questionnaires. The same researcher also completed all interviews with parents who consented. One of the members from the research team working with the child collected a brief language sample that was later analyzed for dialect detections. The research team member(s) then administered subtests from the following standardized measures: KBIT2 and WJ-III ACH. Additionally, standardized curriculum-based measurements (R-CBM) of reading abilities were collected. All students concluded with an English-administered executive function computerized task. Students enrolled in the DLI program completed the standardized measures and R-CBM in both English and Spanish. All testing occurred on the same day and subtests were arranged in a particular order to reduce possible practice effects if the student was tested in two languages. In total, each family's research visit spanned between 35 minutes to an hour and 30 minutes. After each student completed the study, the researcher/s provided the student with a small prize and thanked the student for their time. Parents were also thanked and compensated with $10 (or $15 if they completed an interview) for their time.

Participants and Setting

This study included 51 students (32 in DLI and 19 in Mainstream) recruited from across 3rd, 4th and 5th grade classrooms from various urban schools that do and do not include dual language immersion programs in a school district in the Midwest. Students from urban school districts were targeted for the study due to the higher likelihood of containing low-income and African American, and/or multi-raced student populations. The participants in the DLI programs were comprised of either native English or native Spanish speakers and included students of low SES and African American and/or multi- raced students. All of the students in the study had received instruction in either the DLI program or English-instruction classroom from the beginning of their formal schooling in Kindergarten. All DLI students who were tested for the study received program instruction through the 90-10 model from kindergarten. The 90-10 model consists of 90% of Spanish instruction in Kindergarten, 10% in English, and gradually increases in the amount of English instruction each year. Third, fourth and fifth grade students were selected since, by these grades, students within this model receive approximately 50% English instruction and 50% Spanish instruction and should have close to equal linguistic skills in both languages. In the district in which the research project took place, some schools had recently switched from implementing a 90-10 to a 50-50 DLI program model during the same year, or one year prior to when children were tested. Some students who had begun their DLI program experience under the 90-10 model, however, continued through with it until the end of their elementary school experience. It is important to note that all students who were tested who did come from schools that created a school-wide shift to the 50-50 model during the time of their enrollment were already in older grade levels. The assessed students in 3rd, 4th and 5th grades, were thus unaffected by the program model shift that may have taken place in

their schools as many of them were already receiving an equal percentage of instruction in both Spanish and English at the time of assessment.

The participating students from mainstream English classrooms were either native English speakers, non-native English speakers who were proficient in English, or English language learners not yet proficient in English. Students from the mainstream classrooms also included students of low SES, at least one African American student, and at least one multi-raced student. Two language questionnaires, the LEAP-Q, and brief child language questionnaire, were used to determine the participants' native language/s spoken at home and level of proficiency. Data from students who had mild to severe developmental disorders were excluded from the final results. The final sample consisted of 51 students.

A demographic questionnaire was administered to parents and analyzed for each student's race and socioeconomic status (Appendix G). Because research has also noted the association between children's academic achievement and parental education levels, particularly that of the biological mother, the demographic questionnaire also included questions about parental education levels that helped in determining which groups to assign the children to for data analysis. Parents also completed a brief child language questionnaire (Appendix H).

Overview of the Measures

Language dialect screener. In order to examine how linguistic dialectical differences may potentially impact students' responses on all administered language, literacy, and experimental tasks, a brief language sample was collected from all participating students. The experimenter used a digital recorder to record the first three minutes of a rapport-building

conversation that took place with each student. The experimenter asked questions such as "tell me about your family", "tell me a funny story", and "what do you like to do for fun?" The sample was then coded for African American vernacular English (AAE) elements. In particular, salient linguistic patterns that are known to be produced by speakers of the AAE dialect were quantified through an index called the Dialect Density Measure (DDM), which highlights each individual's rate of dialect pattern and the type of dialect of the speaker (Oetting & McDonald, 2002). Dialect density can be measured by a token-based method in which the researcher counts the number of patterns produced by the speaker divided by their total number of utterances (Oetting & McDonald, 2002). The AAE patterns examined in this study were based on Washington and Craig's (1994) definitions. Sample morphological and syntactic AAE forms that were coded include: the use of "ain't" as a negative axillary (e.g., "why she ain't coming?"), multiple negation in which two or more negative markers were used in one sentence (e.g., "I don't got no brothers"), and the exclusion of the present progressive morpheme -ing (e.g., "and the lady is sleep"; Washington & Craig, 1994).

Standardized assessments. Three standardized norm-referenced measures were used to assess children's language and literacy outcomes, specifically children's reading and language comprehension skills. Measures were chosen based on the following criteria: use in previous research on second-language exposure, availability of the assessments in both English and Spanish, age appropriateness, and short administration time lengths to reduce student inattention and disengagement. Curriculum-based measurement (CBM) is a method for monitoring students' progress in an academic area in a quick and standardized manner (Wayman et al., 2007). A curriculum-based measure was thus included because many schools

collect reading data in this way and students may have been familiar with the structure and instructions of the task reducing the likelihood of follow-up questions from the students.

The Kaufman Brief Intelligence Test Second Edition (KBIT-2) was used to screen for intellectual ability and adequate cognitive functioning. It is a brief measure of verbal and nonverbal intelligence that is used with individuals between the ages of 4 and 90 (Kaufman & Kaufman, 2004). The assessment yields three scores: Verbal, Nonverbal, and the Composite IQ score. For time considerations, only the nonverbal subtest (Matrices) was used. The subtest measures the ability to solve new problems by assessing an individual's ability to perceive relationships and complete visual analogies through multiple choice. The items are composed of visual stimuli, both meaningful (e.g., people and objects) and abstract (e.g., designs and symbols; Kaufman & Kaufman, 2004). For the easiest items, the individual selects which one of five pictures goes best with a presented stimulus picture (Kaufman & Kaufman, 2004). For the next set of items, composed of both meaningful and abstract stimuli, the individual chooses which one of six pictures best completes a 2x2 visual analogy grid (Kaufman & Kaufman, 2004). The final items of the subtest involve only abstract stimuli and require the individual to solve either a 2x2 or 3x3 visual matrix (Kaufman & Kaufman, 2004). The assessment takes approximately 4-6 minutes to complete.

Two subtests from the *Woodcock Johnson III Test of Achievement* (WJ-III ACH) were used to assess children's vocabulary skills and reading comprehension, two important focuses during the upper elementary grade levels. The WJ-III- ACH is a comprehensive set of individually administered, norm-referenced tests for measuring academic achievement. To assess student reading skills, and language expression and reception skills students' vocabulary knowledge was measured through the Reading Vocabulary subtest (Test 17). Reading

Vocabulary measures skills in reading words and supplying appropriate meanings (Mather & Woodcock, 2001). It is a measure of both receptive and expressive language ability. The test is comprised of three sections in which students are asked to read words and provide synonyms, read words and provide antonyms, and read three words of an analogy and then provide the fourth word to complete the analogy. Items gradually increase in difficulty. The task concludes when the student hits the assessment ceiling and may take up to approximately 8 minutes to complete. The subtest has a median reliability of .87 in the age 5 to 19 range (Mather & Woodcock, 2001). In addition, the Passage Comprehension subtest (Test 9) was used to assess children's reading comprehension skills. The test involves symbolic learning, multiple choice questions that require the child to point to the picture represented by a phrase, and passages with missing words or phrases that the child must fill in using context-cues (Mather & Woodcock, 2001). The test also has basal and ceiling rules and may take up to approximately 8 minutes to complete. Passage comprehension has a median reliability of .83 in the age 5-19 range (Mather & Woodcock, 2001).

AIMSweb reading curriculum-based measurement (R-CBM). Reading Curriculum-based Measurements (R-CBMs) are typically used in universal screening of all students during the Fall, Winter, and Spring of each school year (Pearson Executive Office, 2012). The AIMSweb R-CBM is a standardized measurement of reading achievement used to progress monitor and measure 1st through 8th grade students' oral reading skills (Pearson Executive Office, 2012). The assessment involves graded passages that are read aloud by students for the span of one minute (Pearson Executive Office, 2012). All passages were written based on research and are independent from school curriculum so that curriculum differences among teachers and schools do not interfere with the equitability of the test (Pearson Executive Office,

2012). The passages were developed to represent the types of narrative texts that students between 1st and 8th grade would typically encounter in their schools at their grade level. In this study, students were given 3rd, 4th, and 5th grade level passages (probes). The administrator counts the number of words read correct per minute and the calculated score provides a highly reliable and valid measure of general reading achievement, including comprehension, for most students (Pearson Executive Office, 2012). Errors during reading include: word mispronunciations, substitutions, hesitations that span longer than 3 seconds, omitted words, and word read out of sequence that the student does not self-correct within 3 seconds (Pearson Executive Office, 2012). Students in the DLI program read two different probes, one in English, and one in Spanish. Paper administration was implemented. Students in the mainstream English classrooms read only one passage in English. For time considerations, a single probe in each language was randomly selected for administration. For the 3rd grade level, a single probe in the Aimsweb R-CBM has a test-retest reliability score of .85 (Daniel, 2010). At the 4th grade level, a single probe in the AIMSweb R-CBM has a test-retest reliability score of .85 (Daniel, 2010). For the 5th grade level, the test-retest reliability is .88 (Daniel, 2010).

Executive function task. One executive function task, the flanker task, was administered to all of the student participants. The flanker task that was administered in this study is the same as the one described earlier by Rueda et al. (2004) and Bialystok (2015) except it used arrows instead of fish. The students viewed five directional arrows with a central arrow among them on a computer screen. The children were instructed to use arrow keys on a keyboard to indicate which direction the central arrow faced, while also dealing with potential distractions from the flanking arrows that faced in either the same direction (congruent trials)

or in a different direction (non-congruent trials; Bialystok, 2015). The task consisted of 20 trials (10 congruent, 10 incongruent, all randomly shuffled), and mean reaction time for each trial type was prioritized. The task took approximately three minutes to complete.

Questionnaires. Parents completed three brief questionnaires: a general demographic questionnaire, a children's language exposure questionnaire, and the Language Experience and Proficiency Questionnaire (LEAP-Q). The demographic questionnaire administered to the parent helped determine basic background characteristics such as the child's race, ethnicity, prior reading intervention involvement, and the educational levels of both parents. Special attention was given to the maternal education level since maternal education is often highly correlated to socioeconomic status (Erola, 2016). Maternal education level was thus used to as the default to categorize the socioeconomic status of the family into either low SES (degrees lower than a Bachelor's degree) or middle/upper SES (Bachelor's degrees or higher). If a parent opted to not answer the question regarding maternal education level, or if it was unknow, the response noted in the socioeconomic status question was used as a secondary measure to determine SES. It was offered to all participating students' parents in both English and Spanish, allowing each parent to decide which language they felt most comfortable completing it in.

The children's language exposure questionnaire was comprised of three questions that assessed the various languages that the child has exposure to at home. The questions were also offered in both Spanish and English to parents and took approximately one minute to complete.

The LEAP-Q is a reliable and valid questionnaire of bilingual language status that is used in research settings (Marian et al., 2007). It is a self-report measure of language

competence, language acquisition, as well as prior and current language exposure (Marian et al., 2007). The target population for the LEAP-Q is adult and adolescent bilinguals and multilinguals with a range of language experiences and proficiency levels (Marian et al., 2007). The complete English version of the measure can be found in Appendix I.

Parent interview. Parents of children from DLI classrooms that consented, completed an interview with the lead researcher (Appendix J). Direct one-on-one interviews allow the participants to provide useful information beyond that collected from standardized assessments and questionnaires. The goal of the interview was to learn more about parental satisfaction with their child's program model, their decision-making process and rationale for involving their child in one program model over another, and observations they had about any disproportionality they noticed in the DLI classroom and school. The interview questions followed a standardized open-ended interview structure in which the wording of the interview questions is very structured, but the questions are worded in an open-ended manner (Turner III, 2010). According to Gall, Gall, and Borg (2003), using this interview format reduces researcher biases within the study, particularly when the interviewing process involves many participants. The primary researcher conducting the interviews avoided using leading questions, probed issues in-depth, and allowed informants to lead. These strategies are suggested as best practices in interviewing (Turner III, 2010; King, 1998).

Data Analysis

Given the nature of the research questions involving quantitative and qualitative pieces, the study used a mixed-methods design. Both qualitative and quantitative data were collected in the study and analyzed separately. Qualitative data was then used to help in the interpretation of quantitative findings. Mixed method approaches allow for the

counterbalancing of reliability and validity issues encountered in each individual design approach and help researchers to triangulate on the "true" result (Abowitz & Toole, 2010). Abowitz and Toole (2010) argue that mixed method approaches can increase confidence in possible causal inferences as well because when data from two different methodological approaches converges (either in support or rejection of the hypotheses), the results are likely not due to accidental correlations in the sample. In particular, the triangulation of measures in this study (the use of multiple operationalization of the same construct in this study), allowed for the observation of more facets of the phenomenon in question. Quantitative data was organized into tables and scores from students who did not meet inclusion criteria were excluded. Data was recorded and statistical calculations were completed using the Statistical Package for Social Sciences (SPSS 22). Qualitative data was transcribed and reviewed for accuracy to prepare for analysis.

Quantitative data analysis.

Statistical Package for Social Sciences (SPSS 22) was used to analyze the quantitative data. Several factors helped determine the selection of the appropriate statistical tests (e.g., the type of research question, the number of independent and dependent variables, and whether the variable scores were normally distributed). As a result, a combination of parametric and nonparametic measures were used. The Mann-Whitney test was used for examining research questions where there were differences between two conditions and different participants were used in each condition for non-parametric variables (Field, 2011). A non-parametric test was used because the data deviated from a normal distribution for both the native English speaking DLI students and native English speaking Mainstream English students from low-income households. Additionally, independent sample t-tests, ANOVA, and ANCOVA were used to

analyze data for which there were larger sample sizes. Descriptive statistics (e.g., mean, standard deviation), were also calculated to determine overall trends in the data.

Qualitative data and analysis.

Each interview conducted with a research participant was recorded and saved under a unique ID number. Participants were asked to refrain from using names and other identifying information during the interview, however, they were also made aware of confidentiality rules and that all identifying information from the interview would be blinded. Each interview was transcribed and blinded for confidentiality as promised to participants. Analysis of the qualitative data involved first reading through each interview several times to gain an understanding of the content and intended meanings. Conventional content analysis was used to derive common codes and themes. Hsieh and Shannon (2005) define content analysis as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (p. 1278). Within the conventional content analysis process, codes are derived directly from the data during data analysis. Content was summarized and reported to develop the common themes for each individual transcript, and then across all transcripts. Rather than using preconceived categories, content analysis allows for thematic categories and names of categories to flow from the data (Hsieh & Shannon, 2005). Once topics for each key area were established, frequencies were calculated for each item that was mentioned and larger group categories were developed where relevant. The remainder of the content analysis involved categorizing and organizing the data into 10 final areas. One of the benefits of analyzing qualitative data in this manner is it allows for language to be explored more intensely to classify a large amount of text into an efficient and smaller number of thematic categories that represent similar meanings

(Hsieh & Shannon, 2005). The generated ideas that resulted from the analysis were used to provide context for quantitative data trends and shed light on the general experiences of a diverse group of parents who chose to enroll their children in DLI classrooms.

Summary of Methods

To review, in this chapter I outlined the mixed-method data methodology that was used to answer the research questions. I also delineated the data collection and recruitment process as well as the measures that were used with all participants. The final part of this chapter includes an explanation for how the quantitative and qualitative data were analyzed to present reliable answers to the research questions guiding the study, and how the qualitative data was used to help explain trends in the quantitative data. In the following chapters, findings from the data analysis are shared along with a discussion of the findings for the posed research questions.

Chapter Four

Results

This research study compared outcomes in language, literacy, and executive function between students enrolled in 90-10 DLI programs and students enrolled in Mainstream/ English language instruction (ELI) classrooms across socioeconomic and racial backgrounds. The data was used to explore parental perceptions of the culture within dual language programs and the impact perceived by parents of the programming on their students' social, emotional, and academic growth. All of the student participants enrolled in the DLI program had been enrolled from Kindergarten and all participating students in the ELI classrooms had only received instruction in that setting since Kindergarten. Both quantitative and qualitative data were collected from participants. Quantitative data included standardized achievement test measures, a standardized curriculum-based measurement, an executive function task, and questionnaires. The standardized measures were administered in both Spanish and English to children enrolled in DLI programs. Qualitative data consisted of seven interviews with a diverse group of parents (e.g., SES, race, LGBTQ) and language samples from children. After analyzing children's speech samples for the detection of AAE, only two children were found to use the AAE dialect. This component could therefore not be included in the results and analysis.

This chapter presents the findings from the analyzed data. First, the results from the quantitative data are presented which address the first six research questions. Second, results from the qualitative data, addressing the seventh research question, are presented and connections are made between qualitative and quantitative findings. This mixed methods section includes descriptive statistic and tables to address specific research questions and

figures are included as visual aids in determining the relative levels of performance among the different groups explored. This chapter concludes with a summary of the major findings.

Quantitative Findings

Research Question 1. How do the language and literacy outcomes of native English speaking children of low SES compare to those of middle/upper SES native English speaking children in DLI programs?

The purpose of the first research question was to investigate the socioeconomic differences on the language and literacy development among native English speaking children enrolled in Dual Language Immersion programs as measured by the standardized norm referenced language and literacy tests (WJ-III Test 9 and 17) as well as a curriculum-based reading fluency assessment. Students completed these assessments in both Spanish and English. Descriptive statistics were analyzed using SPSS statistical software with reports of mean values of test scores and standard deviations across groups. Additionally, results from a Mann-Whitney test were reported. The Mann-Whitney test was conducted using a significance level of alpha rate set to .05.

To begin, descriptive statistics for each socioeconomic group were calculated. The means, medians, and standard deviations of the students who are middle/upper-income, native-English-speaking, and enrolled in DLI for both the Spanish and English measures can be found in Table 1. The means, medians, and standard deviations of students who are low income and native English speaking for the same assessments are presented in Table 2. Higher income students had overall higher median scores on all English and Spanish assessment measures except for the Aimsweb English Reading Fluency Measure. Students from higher income

background earned a median score of 136 while students from lower income backgrounds

earned a median score of 150.5.

Table 1

Middle/Upper Income Native English Speaking Children in DLI

	WJ 9 English	WJ 17 English	Aimsweb English	WJ 9 Spanish	WJ 17 Spanish	Aimsweb Spanish
Mean	30.21	33.63	125.52	20.95	15.47	70.53
Standard Deviation	5.72	8.83	54.35	6.04	7.59	25.73
Median	31	36	136	21	17	72

Table note: N=19

Table 2

Low Income Native English Speaking Children in DLI

	WJ 9 English	WJ 17 English	Aimsweb English	WJ 9 Spanish	WJ 17 Spanish	Aimsweb Spanish
Mean	26.00	24.50	131.67	14.83	10.00	56.00
Standard Deviation	10.24	13.16	45.47	6.43	7.32	24.65
Median	29.5	29.5	150.5	15	10	64

Table Note: N=6

Because the data deviated from a normal distribution, a Mann-Whitney test was used to

test for significance at the .05 alpha level. No significant differences were found across all

Spanish and English assessment measures from low and middle/high income DLI students. The results are summarized below in Table 3.

Table 3

Mann-Whitney Test Comparing Scores of Low and Middle/Upper SES Native English Speaking Students in DLI

Test	Mann-Whitney U	Z	Sig. (2-tailed)
WJ 9 English	43.50	-.862	.388
WJ 17 English	30.50	-1.689	.091
Aimsweb English	56.00	-.064	.949
WJ 9 Spanish	29.50	-1.753	.080
WJ 17 Spanish	32.00	-1.595	.111
Aimsweb Spanish	44.50	-.796	.426

Research Question 2. How do the language and literacy outcomes of native English speaking children in DLI programs compare to those of children in mainstream English classrooms, controlling for SES level?

The purpose of this research question was to examine potential differences in the language and literacy outcomes of children enrolled in DLI programs compared to children enrolled in mainstream English classrooms. The English assessment data was collected and compared between the two groups while also controlling for SES. Table 4 provides descriptive statistics for all assessments administered comparing DLI to Mainstream children and distinguishing between socioeconomic status. Comparing mean scores across all language and

literacy assessments, children from higher socioeconomic classes scored higher than those

from low income households. Mean scores from children in mainstream classrooms were also

slightly higher than those in DLI. Results from the ANCOVA however, comparing the two

groups and controlling for SES revealed there were no statistically significant interactions, p =

.242, or main effects, F =.000, df = 1, and *p* = .997 for the WJ-III Test 9; no significant

interactions, p =.293, or main effects, F =.069, df = 1, p =.795 for WJ-III Test 17; and no

interaction, p = .376, or main effects, F = .269, df = 1, *p* = .607 were found for the English

Aimsweb.

Table 4

Descriptive Results for All English Language and Literacy Assessments

SES	Group	Mean (SD) WJ-9	Mean (SD) WJ-17	Mean (SD) Aimsweb	N
Middle/ High	Mainstream DLI Total	32.29 (4.33) 30.21 (5.72) 31.09 (5.21)	36.07 (8.51) 33.63 (8.83) 34.67 (8.65)	142.36 (44.28) 125.52 (54.35) 132.67 (50.29)	14 19 33
Low	Mainstream DLI Total	27.60 (7.77) 25.54 (7.29) 26.11 (7.25)	27.40 (13.85) 23.38 (9.71) 24.50 (10.73)	116.00 (40.42) 114.46 (37.42) 114.89 (37.06)	5 13 18
Total	Mainstream DLI Total	31.05 (5.61) 28.31 (6.71) 29.33 (6.41)	33.79 (10.50) 29.47 (10.39) 31.08 (10.54)	135.42 (43.83) 121.03 (47.83) 126.39 (46.46)	19 32 51

Research Question 3. Are there differences in language and literacy scores of African

American, Multi-raced, and Latinx youth in DLI compared to White youth in DLI?

The purpose of the third research question was to investigate whether there exist

differences in the language and literacy outcomes of children of underrepresented minority

races in DLI programs, namely, African Americans and Multi-raced children, compared to White children. Based on past literature on racial disproportionality in schools, regardless of program type, it was predicted that children from the focal minority backgrounds groups (African American and Multi-raced children) that have never before been closely examined in DLI outcome literature, would have lower scores than White children. Consistent with some literature on the outcomes of Latinx youth in comparison to White peers in DLI, it was also predicted that Latinx children may have lower scores than their White peers on English assessments, but have higher scores compared to their White peers on Spanish assessments. Due to distributional departures from normality, a Mann-Whitney Test was used for the analysis of the racial groupings. First, in comparing English and Spanish language and literacy assessment data between African American and children who are biracial and part African American ($N = 4$) with that of White children ($N = 15$), significant differences in performance were found on the Spanish WJ-9 ($p = .045$) and Spanish WJ-17 ($p = .045$) assessments (not matched for income), with White children scoring higher than African American children (Table 5). Second, African American and all Multi-raced children in DLI combined were found to have significantly lower scores on the Spanish WJ-9 assessment compared to White students ($p = .035$). Descriptive statistics for comparisons between racial groups are reported in Tables 6 and 7 below.

Table 5

Language and Literacy Comparisons between African American and African American Biracial Children and White Children

| Test | Mann-Whitney U | Z | Sig. (2-tailed) |

WJ 9 English	21.0	-.903	.366
WJ 17 English	13.0	-1.704	.088
Aimsweb English	30.0	.000	1.00
WJ 9 Spanish	10.0	-2.004	.045
WJ 17 Spanish	10.0	-2.006	.045
Aimsweb Spanish	22.5	-.751	.453

Table 6

Descriptive Statistics- African American and Part African American vs. White Student Literacy

Outcomes in DLI

Race	African American/ Part African American	White	Total
WJ-9 Eng. Mean Std. Median	27.50 8.66 28.5	31.33 5.07 32.0	30.53 5.92
WJ-17 Eng. Mean Std. Median	26.50 8.35 27.5	34.47 8.41 36.0	32.79 8.82
Aimsweb Eng. Mean Std. Median	128.50 68.76 154.0	134.47 49.98 147.0	133.21 52.32
WJ-9 Span. Mean Std. Median	15.0 5.48 13.0	21.80 5.76 21.0	20.37 6.24
WJ-17 Span. Mean Std. Median	7.50 8.43 4.0	16.20 6.73 16.0	14.37 7.78
Aimsweb Span. Mean	60.25	70.93	68.68

Std.	21.11	21.0	20.91
Median	67.0	75.0	
N	4	15	19

Table 7

Descriptive Statistics- African American and Multiracial vs. White Student Literacy Outcomes in DLI

Race	African American/ Multiracial	White	Total
WJ-9 Eng.			
Mean	26.0	31.33	29.20
Std.	12.10	5.07	7.05
Median	30.5	32.0	
WJ-17 Eng.			
Mean	26.90	34.47	31.44
Std.	12.10	8.41	10.51
Median	30.5	36.0	
Aimsweb Eng.			
Mean	115.80	134.47	127.0
Std.	54.38	49.98	51.51
Median	113.5	147.0	
WJ-9 Span.			
Mean	16.0	21.80	19.48
Std.	6.39	5.76	6.56
Median	15.5	21.0	
WJ-17 Span.			
Mean	11.10	16.20	14.16
Std.	8.50	6.73	7.75
Median	11.0	16.0	
Aimsweb Span.			
Mean	61.20	70.93	67.04
Std.	31.94	21.0	25.76
Median	62.0	75.0	
N	10	15	25

Finally, to explore consistency with prior studies, the scores of Spanish and English language and literacy assessment of Latinx youth in DLI were compared to the scores of White

students in DLI utilizing the Mann-Whitney Test. White students scored significantly higher on

the English WJ-9 (Mdn = 32; p= .012) and WJ-17 (Mdn = 36; p= .003) assessments, not

matched for income. Comparing across groups, the median score for native Spanish speaking

Latinx students were slightly higher on all Spanish assessments, while native English speaking

White students earned higher scores on all English assessments.

Research Question 4. Are there language and literacy differences comparing native English

speaking African American and Multi-raced children of low SES to those of middle/upper SES

native English speaking African American and Multi-raced children in DLI programs?"

To explore the possible differences in learning that are associated with socioeconomic

status among the focal underrepresented group, a Mann-Whitney showed that higher income

African American and Multi-raced youth earned statistically significant scores on the Spanish

WJ-9 (p = .02) and Spanish WJ- 17 (p = .02) assessments than low income youth. Table 8

displays the descriptive statistics and means among groups for each assessment administered in

both languages.

Table 8

Descriptive Statistics and Mean Scores of African American and Multi-Raced Children of

Different SES

Income		WJ-9 Eng.	WJ-17 Eng	Aimsweb Eng.	WJ-9 Sp.	WJ-17 Sp.	Aimsweb Sp.
Low	Mean	28.00	22.33	135.67	17.67	10.67	59.67
	N	3	3	3	3	3	3
	Std.	9	13.58	57.83	4.73	8.14	18.61
	Mean Rank	4.67	3.33	5.67	2.0	2.0	4.83

Middle/Upper	Mean	27.83	32.17	111.83	69.83	69.83	69.83
	N	6	6	6	6	6	6
	Std.	6.01	8.93	58.93	34.07	34.07	34.07
	Mean Rank	5.17	5.83	4.67	6.50	6.50	5.08
Total	Mean	27.89	28.89	119.78	52.44	50.11	66.44
	N	9	9	9	9	9	9
	Std.	6.55	10.96	56.11	37.57	40.22	28.95

Research Question 5. Are there differences in executive function between children who are bilingual and children that are monolingual after controlling for SES?

Flanker task.

The mean reaction times (RT) for the flanker task are graphed in Figure 1. The mean accuracy for both the bilingual and monolingual groups was 95%. Students who scored at an accuracy rate of 60% percent and below were excluded to ensure that only the data of students who fully comprehended the task was analyzed. The mean RTs for the congruent and incongruent trials of the Flanker task, presented in Graph 1, were analyzed with an independent samples t-test since there was a more normal distribution. No significant difference was found between groups for the congruent trials, $F(1,47)= 3.403$, p = .160, or the incongruent trials, $F(1, 47)= 1.070$, p = .591, at the significance level of $p=.05$, although bilingual children displayed an overall faster mean RT in the congruent (M = 790.94, SD = 224.33), and incongruent (M = 1111.80, SD = 403.74) trials than monolingual children in the congruent (M = 978.19, SD = 483.44) and incongruent (M= 1194.91, SD = 528.88) trials. After running an ANCOVA to compare the two groups and control for SES, no statistically significant interactions were found for the congruent (p = .430), or incongruent (p = .113) trials.

Table 9

Descriptive Statistics of EF Data

	Group	N
Language	Monolingual Bilingual	34 15
SES	Middle/Upper Low	31 18

Figure 1

EF Data Bilingual vs. Monolingual

EF Data Bilingual vs. Monolingual
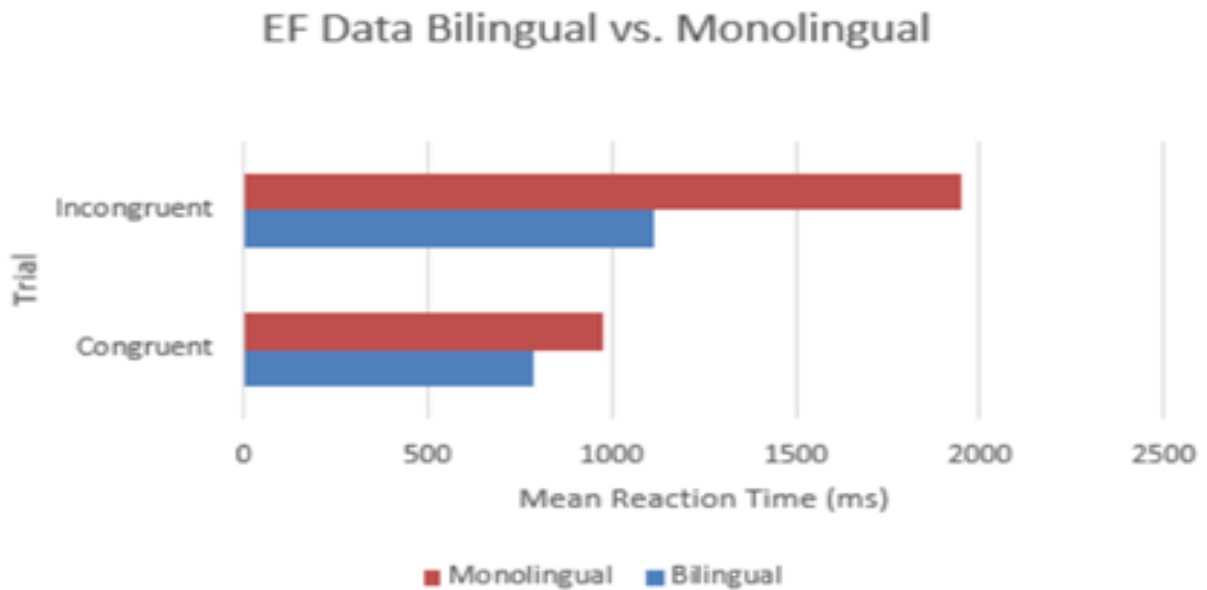
Research Question 6. "How do the English language and literacy skills of native Spanish

speaking Latinx youth in DLI compare to those in Mainstream English classrooms?

To address this question, the language and literacy assessment scores of native Spanish speaking Latinx youth in DLI and ELI Classrooms were compared using the Mann-Whitney test. The sample of students in the DLI classrooms consisted of 7 students and the sample of Mainstream students was 2. In analyzing the English data for significance at the p=.05 level, statistical significance was found for the WJ-III Test 17 (p = .039) with Latinx children in Mainstream scoring higher than those in DLI. No statistical significance was detected for any other subtests. In Table 10 the mean scores for both groups are reported. Overall, scores were higher for children in Mainstream classrooms than for children in bilingual classroom.

Table 10

Descriptive Statistics and Mean Scores of Latinx Youth in DLI vs. Mainstream

		Language Outcomes		
Group	Statistic	WJ-9 Eng.	WJ-17 Eng	Aimsweb Eng.
Mainstream	Mean N Std. Mean Rank	32.50 2 2.12 8.0	36.00 2 .000 8.50	129.50 2 10.61 7.50
DLI	Mean N Std. Mean Rank	25.14 7 4.30 4.14	22.43 7 6.78 4.0	99.71 7 22.98 4.29
Total	Mean N Std.	26.78 9 5.00	25.44 9 8.20	106.33 9 24.14

Qualitative Findings

This section provides the findings of the qualitative data in this study for the research question: "What are parents' perceptions of the social and cultural environment within DLI

programs and what do parents believe is the impact of DLI programming on their children's social, emotional, and academic growth?" The first part provides an overview of the participant demographics. The second part discusses the specific questions that participants were asked, and the specific themes that emerged from data analysis. The second section will also provide specific examples in response to the outlined themes discovered and connections will be drawn to the findings from the quantitative analysis. A few sample quotes are provided within this section to delineate the major findings and additional sample quotes can be found in Appendix K. Lastly, the section concludes with a summary of key findings from the qualitative analysis.

Participant Demographics. Interview participants included a diverse range of parents with respect to family backgrounds. Included in the sample were a White low income single parent, an African American parent, two parents who are members of an LGBTQ community, a White parent who adopted an African American child, parents in interracial relationships with biracial children, and parents with children with mental health challenges and/or are enrolled in special education services. All parents were mothers. Some parents had more than one child enrolled in DLI (some of which had started middle school), and so they talked about more than one of their children's experiences during the interview. In some cases, it was more relevant for the parents to discuss the elementary school experiences of their older child enrolled in middle school when answering questions about their family's initial encounter with and impressions of DLI programs. All participants were native English speakers, as were their children. There were 7 interviews in total. Table 11 displays the demographic characteristics of interviewed participants and their children.

Table 11

Interview Participant Demographics

ID #	Parent Race	Child Race*	SES
104	African American	Biracial (AA and White)	Middle
100	White	African American	Middle
164	White	Biracial (AA and White)	Working
132	White	White	Middle
160	White	White	Middle
148	White	White	Middle
155	White	White	Middle

Themes and findings. Conducting a content analysis resulted in the identification of 10 different themes. The interview questions that the participants responded to are listed below. Given the semi-structured nature of the interview that was used, several follow-up questions were also asked in relation to topics that interviewees would bring up.

Table 12

DLI Parent Interview Questions

Interview Questions
How did you hear about the DLI program?
Why did you choose to enroll your child in the DLI program? What do you find appealing about it? What, if any, reservations did you have about enrolling your child in the DLI program?
Part of the DLI program involves your child interacting with native Spanish/English speaking children—what are your thoughts or feelings about that component of the DLI program? Do you see advantages with this? Any disadvantages?
Do you have concerns or questions about the program model generally?
How important is it for your child to be bilingual?

In the past, DLI programs have mostly enrolled middle to upper income students, what barriers do you think there might be for low income students to enroll in DLI programs? ...be a student in a DLI program?
What additional academic or social demands, if any, do you believe your child has in the DLI classrooms in comparison to if your child had been enrolled in mainstream English classrooms?
Along with the language instruction, DLI programs often include some cultural exposure, to what extent do you feel that your child's DLI program exposes them to new cultures? How do you feel about the cultural components of DLI programs?
In your opinion, do you believe your child's race, ethnicity, or culture influence his/her performance in class?
Do you have any concerns about the complexity of your child learning another language? Why or why not?
Do you feel your child's teacher creates a welcoming climate in your child's classroom? Why or why not?

If you have had the opportunity to visit your child's classroom, what has been your impression of the classroom?
     ...impression of the classroom social climate?
     ...impressions of the learning atmosphere of the classroom?

How satisfied are you with your decision to enroll your child in the DLI program? Why?

The 10 core topic areas that emerged are summarized in Table 13. These were topics that came up across most participants regardless of whether a specific interview question was asked about it or not. Within each topic area, several themes emerged which will be further discussed in the following paragraphs and supporting tables.

Table 13

Emergent Interview Topic Areas

Topic Area

How they heard about DLI
Reasons for enrolling their child in DLI
Whether Spanish is spoken at home and exposure/practice opportunities outside of school
Predicted challenges for low SES families in DLI
Observations of racial disproportionality and discrimination/bullying and predicted reasons for disproportionate demographics in DLI
Exposure to cultural diversity before/after DLI enrollment
Perceived benefits of DLI and child's skill level in Spanish and English
Areas of growth for DLI
Parental advocacy and involvement/ leadership
Level of satisfaction with DLI

Theme 1. The first theme revolved around understanding how parents initially heard about the DLI program. All participants responded to the corresponding question and four main sources emerged. Table 14 below outlines the responses and frequencies. Sources included both formal methods from schools and informal methods from the community. Overall, most parents gained exposure to DLI from either direct mail that they received from the school, or a combination of mail from the school and conversations with friends, neighbors and other family members that may have gone through the program. Other methods included learning about the program through a tour of the school, and attending informational sessions led by school district officials.

Table 14

How Parents Learned About DLI

Method	Number of Parents Who Learned About the Program in this Way
Neighbors, friends, or family	3
Mail from school	4
Tour of school	2
Informational meeting at a public library	2

Theme 2. The second topic area provides information on why parents chose to enroll their child/children in DLI classrooms as opposed to ELI classrooms. All participants directly respond to this question. Parents shared a variety of different reasons, however a few key themes were frequently mentioned. Table 14.1 outlines all the major themes and frequencies of parents reporting the stated reason. Most parents directly stated their interest in helping their child broaden their group of friends and meet children from diverse backgrounds. Additionally, some parents noted that they thought enrolling their child in DLI would even be beneficial for expanding their own friend circles. The following selected comments reveal parents' opinions around diversity and cultural group expansion (see Appendix K for additional quotes).

We lived in the neighborhood that we did at the time hoping to make lots of cross-cultural friends and found it not as easy to do so as we had hoped and we thought this [enrollment in DLI] would be a great opportunity for that...it [enrollment in DLI] definitely has increased our involvement in the community and our number of friends who don't speak English as their first language. I think even more so for our son. Some of his closest friends at school are people who speak Spanish in their home. (P148)

We chose this district because we knew it was a diverse district and that our kids would be growing up with more of a representation of what it would be like in the majority of other cities and everyday life and that not only is today a mixed bag of races and cultures, but it's also a mixed bag of economic statuses for families, so the kids are more aware of their world around them than being in a bubble. (P160)

My circle of friends and acquaintances, people I interact with, it's very homogeneous to myself which is White[...] there's not a lot of social economic diversity in my group which is something that takes quite a bit of effort to shift, and I've not had a lot of

success. I feel like being a part of the school and the community that the school is in and the kids my kids are friends with has been just a real benefit for us for expanding the circle of people who we care about and are friends with. (P132)

Table 14.1

Reasons Parents Enroll Their Children in DLI

Theme	Frequency
Diversity	6
Broader array of friends	4
Job opportunities	3
Broader opportunities in life	3
Parents past language learning experience	3
Brain development	2
Quality of teacher support	1
To provide academic challenge to AL student	1
Personality match (creative child) who would benefit from learning another language	1
Prevent competition among siblings	1

Table Note: Each parent could report more than one reason.

Among some of the other common kinds of reasoning offered were expanded job opportunities, become global citizens and broader opportunities in life. A couple parents also cited their knowledge of brain development and language as one of the reasons for enrolling their child.

In the world we live in, it's better to speak multiple languages, so this is a great opportunity to do DLI staring at a young age. We have done research and knew that young brains can pick up languages a lot faster than when we get older. (P160).

A few parents also referenced their own language learning experiences as a reason for why they chose to provide the opportunity for their children:

> *I had taken Spanish staring in like 6th grade and took it through conversational Spanish in college, but I lost it all because I didn't have a job that I needed to practice it in, and so we thought it would help our daughter just advance herself going forward being able to do both parts. (P160)*

Other noted, albeit less common, reasons were related to the perceived quality of teacher support, the perception that that learning a second language would provide a more appropriate challenge for an accelerated learner (AL), that the creative and language aspects of DLI just better fit the personality of the child, and, in the case of one parent, the selection was made to separate two siblings and prevent academic competition between them.

Theme 3. The third topic area, *whether Spanish is spoken at home and exposure/practice opportunities outside of school,* shed light on linguistic practices in each family's home and other locations outside of school. Parents shared important information regarding the opportunities they directly created for their children to practice Spanish and further engage in Hispanic culture. All seven parents shared that they do not speak any Spanish in their homes, although two parents were making an effort to learn more Spanish themselves so they could learn *with* their children at home. They explained that their child's school and a local organization offered Spanish classes for parents which they found greatly beneficial. Below is a quote from one of the parents describing her experience:

> *They've [child's school] offered Spanish and English classes for parents off and on over the last years. So I've taken it three different times, like an eight week evening course...They offer classes in Spanish and English [separately] then the two sets of people get together for the last half hour in a conversation where they talk which has actually been the places where I've really connected with Spanish speaking parents from all over because...it's been a nice way to go beyond just the niceties and be more like,"Ok, I feel like we know each other a little bit". (P132)*

A few other parents shared that they notice their children practicing Spanish when given opportunities to do so in community settings such at restaurants (e.g., Mexican restaurants) and grocery stores with native Spanish speaking workers. The parents did however, share that their child/children did not practice Spanish at home very much other than to complete Spanish homework assignments.

> *If we were out and about and ran into someone that was a primary Spanish speaker, she would have a simple conversation in Spanish with them, staring in Kindergarten... It's just that once she got out of the school setting, and she came to her home, then she just completely seemed to unplug from being able to do Spanish. (P160)*

> *There's days like Taco Tuesdays, so we go to the Latino market, and there's the **Spanish words** and all that talk so, she does use it. If there's some worker at a restaurant who speaks Spanish, or if there's a family speaking Spanish and someone would open the door for someone and she knows that they're Spanish speaking, she'll speak in Spanish to them. She tries to put it into use outside of school. (P104)*

Socioeconomic status also seemed to be associated with the types of language exposure activities that parents involved their children in outside of school. For example, some parents could afford to travel to Spanish speaking countries to provide their children with opportunities to practice using Spanish more often. One parent, noted that through their family vacation to Mexico, her children made friends with whom they still remain in touch as pen pals communicating in Spanish. She attributed much of the success of this cross-cultural exchange to her children's involvement in the DLI program and the skill they gained in speaking Spanish and better understanding Mexican culture.

> *We had the opportunity to go to Mexico to this little pottery village and the kids made friends. When we got them [their children] back here, there was some cultural exchange that I don't think we would have done it all in that way if the kids hadn't learned Spanish. (P132)*

Another parent discussed her son's fluency in Spanish when they went on a family trip to Chile. She felt that the travel opportunity provided her son with confidence and greater understanding about just how much Spanish he attained from DLI and its utility in the world.

> *We've traveled a little bit, we went to Chile when my older son was seven, to visit relatives that were working over there. That was a good experience for them to see "Wow, I can actually communicate." He [son] helped me out quite a bit in translating and just coming up with things to say that was at the tip of his head. This obviously doesn't come to an adult learner that quickly. (P155)*

All of the parents that traveled to Spanish speaking countries were from middle to upper middle class backgrounds, as were the parents who took Spanish classes. One parent acknowledged that although she thought the Spanish classes offered by the school were "affordable", not every parent may be able to financially afford it and that could be a barrier to access. The one parent coming from a working class background did not mention any knowledge of opportunities for her child's continued practice of Spanish within the community, or otherwise. Although none of the families practiced speaking Spanish at home, all parents expressed how important they believed it was for their child to continue practicing a second language and many encouraged and/or provided opportunities for their children to practice Spanish outside of the home and school settings.

Theme 4. The fourth emergent topic area explored the crucial question of what challenges or barriers parents perceived low income families in DLI may face. When this question was raised in the interview, many parents began to also discuss the racial disproportionalities they noticed as well within their child's school at large, or within the DLI classroom. The specific racial disproportionalities are further discussed in the sixth topic area. In the paragraphs that follow, the most commonly perceived barriers for specifically low-income families in DLI are discussed.

Several parents described a range of barriers that they believed children from low socioeconomic status faced in DLI. All of the barriers listed were factors that parents believed were not unique to DLI. Table 14.2 outlines the common themes that respondents shared.

Table 14.2

Parental Perceptions of Barriers/Challenges for Children of Low SES in DLI

Themes
Lack of resources/access to out of school tutors
Limited involvement in after-school activities
Time poverty
Transportation
Daycare
Parent sense of isolation
Home-life financial stressors (sleep, hunger, shelter)

Six out of the seven respondents indicated at least one of the following challenges/barriers for low income families in DLI: lack of resources/access to out of school tutors; involvement in after-school activities; transportation, time poverty, daycare, parent sense of isolation, and home life financial stressors. Each theme is described below along with selected illustrative quotes. Many of the parent responses also showed awareness of privilege.

The first and most common challenge that parents noted was "lack of resources/access to out of school tutors". One parent, reflected openly on her ability to financially provide her child with private tutoring for Spanish and English in whichever academic topic her child may

struggle. She also acknowledged that she was well networked and could easily find support for her child when she needed it, but that this may not be the case for others.

> *So maybe that's another challenge for the lower income families is that math can be a problem, maybe they don't have the resources to get tutors, or English is not their primary language, information on that could get additional help. I had some friends that are teachers and they suggested somebody who was a good fit and that was also bilingual, so they [tutor and child] could go through some things in Spanish. (P104)*

Parents also mentioned how involvement in after-school activities was sometimes mediated by money. After-school clubs, lessons, and sport team memberships often require fees and the purchasing of equipment that low income families may not be able to afford. Additionally, "time poverty", the need to work long hours and having no choice to do otherwise, may prevent low income parents from adding to their child's social involvements after school. Additionally, the transportation needed to send children to after school activities or to be picked up from school right away to attend after school events may be unavailable, thus causing additional barriers. Some parents also noted unfair advantage from many middle/upper class children due to attendance at daycare centers where they already have a "jump start" to learning and adapting to school rules. One parent, captured all of these barriers by stating:

> *If you're able to be carted all over, you could pay for piano lessons. Your parents take you to piano lessons because they only work part-time. They can take you on a Monday afternoon to piano lesson school. [On the other hand, if] your mom is cleaning houses 18 hours a day, she can't take you or pay however much it is...A lot of people with more money have had opportunities to go to daycare before they start school. They automatically come in with like peer groups and having a lot of formal play. They come in knowing their numbers and come in knowing their letters. (P155)*

Interestingly, the interview questions revolving around socioeconomic status opened up opportunities for some parents to reflect deeply on their own privilege and acts of discrimination that they may even unconsciously perpetuate. One White parent noted the

"sense of isolation" that low-income parents may face at her school during events and the role she may have played in contributing to others' isolation. The parent acknowledged the social class groupings that existed, her sense of embarrassment for not being able to speak Spanish to better engage with a more diverse community, yet made no mention of making an effort to expand her social group, although she also noted her value of diversity and how important it was for her child to have a diverse friend group.

> *When we're at school events, we are hanging with the White parents. I'm essentially being with the middle-class parents. So I think it could be isolating for parents, um, working class parents. (P100)*

Additionally, some parents acknowledged how for some low-income families, basic living needs may not always be met due to financial stressors and complicated home-life situations. These stressors may cause frustration at school and deter children's focus from learning. Such needs include stable shelter, food, and adequate sleep.

> *It may be a little bit more frustrating for the [low income] students because they are already dealing with other things in life like home life, tiredness, from not sleeping, and probably hunger, so it kind of digs into them learning-wise...and is maybe a little frustrating when they can't understand what somebody is saying. (164C)*

While most parents mentioned at least one of the predicted challenges for low-income families in DLI listed above, one parent who did not feel that there were any challenges for low-income youth in DLI that could impact academics. She shared that because of the limited need to use technology for homework assignments, she did not feel that low SES students were in any way at a disadvantage in DLI classrooms.

> *The families that I have interacted with, it doesn't seem like there are financial barriers that would make it less feasible to be in the DLI program than the ELI program. We haven't been required to have any electronic devices or internet technology connects at home that are any different than what I would have. There's nothing economic-wise that we've been required to use or have on hand. Just getting the information maybe*

it's more difficult to see when you aren't connected by the internet, getting all the school news, weather. (P148)

When probed further about what tools/resources her child used at home to complete homework, she shared:

My son uses google translate a lot actually. Does he need to? No. Does he prefer to? Yes. Once in a while they research topics here and there, but I think in the 5th grade level at his school they are still not required to be doing anything online that I can think of. I think he would have been able to do things without. In the middle school, that's a different story. (P148)

As illustrated from the themes above, most parents predicted a multitude of ways in which low socioeconomic status could pose challenges to student learning and a family's sense of belonging in DLI in which most native English speaking families are often from higher socioeconomic backgrounds and possess more privilege. These findings are consistent with the observed trends in the quantitative data that low income children in DLI have overall lower scores on language and literacy assessments than their middle/upper class peers.

Theme 5. The fifth related, and perhaps most critical theme was regarding observations of racial disproportionality and discrimination in DLI and parents' predicted reasons for the clear disproportionate racial demographics in all of their children's DLI schools. Within the topic of disproportionality, four major thematic areas were constructed based on frequency of occurrence: 1) experiences or observations of racial discrimination and/or bullying in DLI, 2) parental conversations with children about race and privilege, 3) predictions about the reasonings for disproportionate racial demographics, and 4) exposure to a diverse range of cultures in DLI. Below, I will break down each major theme and provide specific findings from this critical topic area.

Sub-Theme 1. Experiences or observations of racial discrimination and/or bullying in DLI.

The first theme within this topic area, experiences or observations of racial discrimination and/or bullying in DLI, brought up many compelling stories from parents sharing about either the racial experiences of their own children or racial differences that they noticed in the treatment of White children in comparison to children of racial minority status in DLI. All parents of children who identified as racial minorities shared stories of times their children were bullied or struggled with a deep sense of difference at school. One parent, shared that her daughter was called the "N" word once by a group of boys in her class.

> *I know that she got called the "N" word, There's a group of boys in her class that are kind of constantly bullying and creating a lot of problems, not just for her, but for others too. [...] I think the school is dealing with it appropriately. I know that as soon as it's brought to the teacher's attention, they handle it. They have a conversation with the class and there's a whole lesson that goes into it, so it's not just something that happens in the principal's office. They try and work that back into the classroom, so that they realize words really can hurt. So I think that's been good...racial slurs and things like that, I don't think they're just isolated to the DLI program at all. (P104)*

Although the parent noted the incident was a major problem that did make her child uncomfortable, she did, along with all other parents who shared their child's racial discrimination stories, also believe that the schools handle it well and that such incidents are not only restricted to DLI schools, but could occur anywhere. A White parent of a minority student elaborated most on her child's sense of difference at school. As one of the only African American children in her grade level in DLI, the child's parent voiced that she felt that her daughter was very "shy" and "sensitive" about not only her different skin tone and hair texture, but also about being adopted from an African country and the sense of difference she notices even in her family. Her parent noted the family's effort to keep her in touch with her native culture through friendships and playdates with others from her cultural background, but also

noted that dialogues about African American history and trips to museums that don't always include her specific African culture, don't always "pertain to her" so helping her figure out and understand exactly how she can be in a world that does not reflect her as much as it reflects her peers can sometimes be challenging and is something the child herself struggles with.

The parent of this child, along with the parent of another child of racial minority background both noted that their children experienced racism and bullying at school, however it occurred from children from different minority backgrounds. One parent of an African American child expressed that the conflicts she noticed between African American children and Latinx children date back to a history of hostility between the two racial groups and may also have more to do with social class than race.

> *She's a sensitive kid and sometimes she does experience some racism on the playground. Latino boys, and I attribute this more to class background. Some to class and some to recent immigrant culture and values coming from elsewhere. And so, I think sometimes she does experience that and it weighs on her a bit...I just sometimes think it's some of the more traditional hostility that existed between Latino and African American [people] and I don't think that comes from the school. I think of it as being sort of an old fashioned way of being, but anyway, I do know that she picks up on that. (P100)*

Similarly, a parent of a multiracial child shared that her daughter was bullied by African American girls in her class because her hair looked different from theirs.

> *They [African American students] always tell her that she's White, and they say that they're gonna cut her hair cause it's long and stuff like that, but I tell her don't listen to that, like no matter what race you are, you're pretty and that's all that matters. (P164)*

The parent did also share that she felt other students in the class were sometimes hearing those things as well. Similar to the other parents with children from racial minority backgrounds, this mother also expressed that the school did have some system in place to try to

address these challenges, such as groups where children are taught how to handle difficult situations.

Overall, all parents who were interviewed about their children's racial experiences as minority children, were able to easily point to examples when their young children had experienced bullying, discrimination, and a sense of difference at school. All parents, however, also felt that the schools were making an effort to resolve those conflicts when they are brought to their attention so that they could help all students feel more welcome. Given that such incidents occur quite often not only in DLI classrooms, but in all types of classrooms in general, as one parent mentioned, and that it takes time for children to heal from racial incidents and bullying, such incidents may also impact children's sense of belonging and academics at school which may also help explain some of findings from the quantitative data. As the parents also noted, school staff do take action when acts of racism or bullying are brought to their attention, but such action requires that the students advocate for themselves to receive help from an adult (e.g., parent, teacher, staff member) in order to see action occur, thus not every incident may be addressed and some children may still endure these hurtful experiences and the emotional load that comes with them.

Many White parents perceived a difference in the level of behavior problems in English language instruction (ELI) classrooms which include more African American and low income children, in comparison to DLI classrooms.

> *I think an unintended consequence [of DLI] is, it has created more of a segregated school than it has been I think prior. We haven't experienced anything different, but I think it has gotten really pronounced within the school, in that there's a lot more behavioral problems, perceived at least, in the English instruction classes for whatever reason. I think it probably impacts maybe the lack of challenge that some kids in the English language instruction classrooms face. I know several people that left the school*

after giving it a good chance for multiple years. Several people said, "We can't do this anymore, our kid is not learning as much as he should be learning. There's too many behavioral problems." (P155)

...the families who select DLI seem to be those who speak Spanish as their first language at home. Then some of the families maybe even have more education. There has been some concern about why it isn't a more diverse group of Spanish language learners who are selecting DLI. Sometimes it seems that the ELI classrooms end up saying that there are more behavioral concerns. (P148)

Additionally, there was a general belief that children, even as young as in Kindergarten, were noticing these racial differences as well, especially in regards to behaviors. One parent shared that her child, when in Kindergarten, said:

Mom, all the dark skins are bad or naughty. Why are all the dark skins naughty? (P155)

As seen from the selected quotes above, behavioral challenges in ELI classrooms seem so discrepant from those in DLI classrooms, that some parents have chosen to transfer their children to other schools. Many parents have taken clear notice of the racial and socioeconomic divide between DLI and ELI classrooms and felt that it is an area that school administrators need to continue to work on.

Another parent, with White children in DLI, felt that White children were actually "the "minority" at the racially diverse DLI school that her children attend and that incidents of bullying and harassment are more often committed by African American children targeting White children regardless of which program they were enrolled in. She shared stories about her children being "pushed around" and physically hurt by African American students at the school.

In general, at [School], African American students, and this is every year, every class, regardless of DLI or ELI, African American students tend to push whoever they feel like, whenever they feel like. My kids are pushed daily multiple times. Not just hard shoving into a wall, or just pushing out of the way, and the teachers don't correct that

behavior. This is the disparity they have in discipline. They set a bar here, but if you're White you are set at a much higher bar so if you step out of line, you are quickly disciplined more so than somebody that's not. (P160)

Surprisingly, this same parent who discussed disparity in her school's discipline practices, and who initially stated that she thought there was a "higher bar" set for White students and that White students were disciplined more often, went on to share multiple stories of the disproportionality in discipline of African American children, which seem to contradict her earlier contention. In several instances, the mother shared that her son was involved in a conflict with a peer where he also made bad choices and was physical with an African American student, but that her son did not get reprimanded or written up for his actions, but the African American student did. Below is one shared example.

There was a full on physical interaction, of a punch thrown by our son, and a punch thrown back at our son, so both individuals were harmed...We were just kind of amazed that he did not get written up as well, but the kid that punched our son ended up with a swollen ear and was sent home from school...The behavior support individual called me to let me know and so I asked that person, "well, is my son being written up? Is this being dealt with?", because obviously my son threw a punch, he harmed another human being. This is not acceptable, but they did not write him up. We didn't speak to the teacher directly about it since we thought they'd let us know, but nothing. The week prior, our son was annoyed at recess and so he'd actually gotten written up for taking a kid and driving him by the arm and moving them out of the way from a piece of equipment...we assumed he would be written up for this particular one and he was not. We looked at the [city] school system policy ...[and] expected potentially an in-school expulsion. Nothing came of it, so...it's not consistent discipline in many realms. (P160)

Given the noticed sentiments of disproportionality, racism, and bullying that many parents shared about, it was important to further understand both how and if parents chose to follow-up with their children about their observations at school and the children's direct experiences as well as predictions and suggestions the parents may have about the racial disproportionalities in DLI. A thorough analysis of the interviews explored responses to these

specific areas and the following sections outline findings from these two additional emergent themes.

Sub-theme 2. Parental conversations with children about race and privilege.

Every single parent who was interviewed made note of their own privileges and shared that they have had some discussions with their children about privilege and how privilege may impact learning. One White mother shared about the general privilege of her daughter's White race:

> *You come in through the door with advantages and that affects her performance in class. (P132)*

Most parents shared that their children oftentimes initiated conversations about privilege by talking about the disproportionality they observe between different students at their school, or what they notice regarding widely advertised political events involving racial and class topics. For example, one parent noted how observant her child was about racial and class differences and would often bring things up with her at home:

> *She definitely experiences [social] class differences and talks about them when she gets home. She'll say, so and so's mom just got a job, or so and so doesn't have enough good food to eat because her mom doesn't have enough money, you know, she'll talk pretty openly about those differences that she notices and we talk about them...She's been very interested in the way that people responded to the election...and you know, "why would a Latino vote for Trump?" She would ask me that. She's asked me those types of things based on immigration. I would say that her conversations about class and identity, they're pretty interesting and pretty complex. (P100)*

Similarly, another parent shared that her child shared a story with her about his friend with his parent and their concern of deportation. She acknowledged that due to their privilege, her children do not have to worry about such things, but they are worried about their friends and don't seem to quite understand the politics following the 2016 election. Additionally, she

noted that such stressors really impact student learning, but her children do not have to worry about it as much.

> *We have friends whose parents are, the dad from Mexico, the mom from Wisconsin. Their kids are all American citizens. The dad is an American citizen now...Their oldest son, who is in my son's class came home [to his parents] one day and was like, "Mom I need to take my passport with me. I need my papers at school just in case they come for me so that I could prove that I'm a citizen"...I think that impacts what people are learning and I don't think our[White] kids have to worry about that, but at the same time I think they are worried for their friends and don't really quite understand the whole thing. (P155)*

Many parents also directly addressed their children's questions about racial and socioeconomic disproportionalities. In some cases, the parents chose to step in and educate their children when they noticed them directly using discriminatory language. One parent, in noticing her child and her 'clique' of friends use such discriminatory language towards students of a different race than theirs, chose to challenge her child's assumptions. She shared that she asked her daughter questions and provided her with information about what a "good" friend group looks like to encourage her to veer away from the crowd of children she was following.

> *My daughter would come home and say, "we (her friend group) don't hang out with the Mexicans. We only hang out with our friends. We have a group of people that we hang out with", and I say, "well, why don't you try and make some new friends because the friends that you have right now, maybe aren't treating you the best". [and she would say] "No, we don't hang out with…", and I said, "well, where did you learn this?" And she said "well in school, mom"...And you can't really tell your kid who and who not to hang with, and who to be friends with and who not to, but you kind of maybe give them an idea of what good friends are and what good friends aren't. (P164)*

The parent did ultimately decide to pull her child from the school she was in where she was learning such discriminatory behaviors and moving her to the school with the DLI program she is enrolled in. She spoke highly of the new social interactions that her daughter was having and shared that:

You just don't see kids cliquing up. You don't see kids hanging out with one certain type of person or picking on one race of people, and at the other school, I felt like that's all it was. (P164)

Similarly, another parent (discussed above) expressed that her young son observed that it was mainly Black children that had "behavioral problems" and asked his mother why all of the "dark skinned" children were so naughty. The parent chose to respond to her child's question by first complimenting his discrimination between what is "good" and "bad" behavior, and then sharing that the "bad" behavior he noticed from the African American students did not having anything to do with skin tone. Below is an excerpt from the parent describing her direct response to her child:

We've just had to say, "we're really glad that you're realizing what isn't good behavior. We don't want you to act like that. We don't want you to repeat those words. It doesn't have anything to do with the color of their skin or how dark or light their skin is." We try to simply leave it at that and repeat it. My [older son] gets it now or gets it more. My younger son isn't even quite there yet. (P155)

Another parent shared how she discussed privilege with her White child when he wondered about why his African American peer, who happened to be in special education, in class "acted up" so much:

We explained to him that maybe he (the African American child) comes from a home where he doesn't have a mom or dad. He may never hear the words "I love you". He may never be hugged. He might not have a bed to sleep on. Maybe he's only getting food at school. Maybe there's all these differences. We just explained to him how if he would just be more patient for this other child, it might make things improve [...] Three weeks after we had this conversation with him, his teacher met up with me when I was picking up the kids from school and said, "I don't know what the change was, but all of a sudden now your son is helping this other child. It's been very helpful in class because he's helping the child understand what we're asking him to do, instructions on whatever the work is. Things have been very good between the two of them and it's been amazing"...He's been in our son's class every year since. There's a lot of things that you can do as a parent to make your child adjust better to the [school] dynamic, but not all parents are at a point where they can do that. (P160)

While all the parents recognized the importance of having these conversations with their children, some shared that they felt it was sometimes very difficult to do so because they were not sure how to approach the topic or if they were using the right words, or explain things properly. In fact, the parent who responded to her child asking her about why "dark skinned" children were naughty, shared that a part of the difficulty in discussing the topic with her child is that she feels that her child is also, as she put it, *"just noticing what's there"* (P155). There was a general sentiment that African American children in the schools, especially those that were in ELI classrooms in the schools, had more challenging behaviors.

When parents were asked if they had received any resources from the school or PTO about how to have conversations about race and privilege with their children, many said they had not, but believed that it was something their school leadership teams were likely working on. These shared observations imply that while many parents do understand their own privilege and can easily point to racial and social class factors that have helped support their children's education and learning, some may still struggle to discuss such topics with their children in the absence of the children initiating the conversation through sharing a specific social interaction with someone different from them with their parents. Parents expressed that these racial discrepancies, especially in regards to poor behaviors, are something their schools are still actively working on finding solutions to.

Sub-theme 3. Predictions about the reasonings for disproportionate racial demographics.

Almost all participants, some without any prompting, brought up their concerns about disproportionate demographics in DLI classrooms and made note of the different environments in DLI classrooms in comparison to English only classrooms. Many parents noted that there

are far fewer African American, Asian, and mixed- raced students in DLI and that the primary

demographic was native English speaking White students and native Spanish speaking

Hispanic students. Although not every parent had comments or predictions for why the

demographics are the way that they are, some did share interesting predictions and ideas for

promoting the recruitment of more underrepresented racial groups in DLI. A few parents

believed that if recruitment of underrepresented populations was chaired and headed by

representatives of those racial groups, the schools may have greater success in increasing their

numbers of students from those racial groups. For example, one parent believed that the staff at

the school are not very racially diverse and so there wasn't anyone who looked like the people

they were trying to recruit to chair the effort.

> *I don't know that I've seen anyone who is Asian or African American champion the cause. I don't know that there are any teachers or administrators who say "I actually know and feel like I identify with the Asian community or the African American community and I know how to help build trust with that". (P148)*

This view was also supported by parents, some of whom where assisting their school's

DLI recruitment, who felt that although the numbers of the underrepresented racial groups

were not very high, they were progressively growing due to the advocacy and recruitment

efforts of African American parents of enrolled students in DLI. There was a general sentiment

that this strategy for recruitment could help increase racial diversity in the long run.

> *We have been pretty successful when we worked with our African American families to recruit more African American families by going to churches with community groups and other kinds of events or gatherings of people and had African American families lead the way and say "Hey, you know about this program? It's great!" (P132)*

Similarly, parents emphasized the impact of having people who looks like you more

prominently represented in the DLI program. It was hypothesized that Black families may be

discouraged from enrolling their child in a DLI when they notice that no other Black children

are currently enrolled, or there may be very few. One mother shared that this "trend" could easily spiral and seems to be evident in other opt-in programs as well such as in magnet programs, where African American students are not very well represented.

> *If you have a Black family just looking at the schools and I look at the school and say, "Oh, that's for them, that's not my people, I don't see myself in that group anywhere." I can see how that would just start out as a split and then continues. It seems from what I've heard it's a consistent trend not just amongst our dual language, but amongst opt-in programs that you don't see especially African Americans signing up to be a part of magnet programs in the same rates as they do. (P132)*

Parents may worry about their child's sense of belonging, as might the children themselves. This sense of belonging may also impact academic performance for underrepresented groups in the DLI program. Other predicted reasons included the sentiment that perhaps due to some challenges related to socioeconomic status (e.g., time poverty, transportation), some underrepresented groups may have trouble accessing the recruitment and informational meetings that take place either at the school after hours, or within the community. All of these comments, help support the data from the quantitative findings that indeed, children from African American and multiracial backgrounds were not very well represented in the sample size due to there existing a very small number of these children to begin with. Additionally, given that sense of belonging has been noted in literature to affect student academic outcomes, these comments help suggest possible reasons for the significant finding that African American and multiracial youth did have lower language and literacy scores in comparison to their White peers.

An additional prediction for why there are few African American and other underrepresented racial groups in DLI was the use of a lottery system that is used in the school district in which children were recruited. In order to enroll, parents must complete applications

that are processed through a lottery system. The system cannot legally be manipulated to screen specifically by race, but they do look at the linguistic background of the child since having a certain number of native Spanish speakers enrolled is critical for the way in which the teaching system works in DLI. One parent noted the following about her school:

> *This last year, we had a fair number of people apply, but because our school is a lottery, a very small number of that randomly, a very small number of the African American families actually got into the lottery. That's one issue of really dealing with a smaller population, you can end up with issues with the randomized lottery not benefiting them like it could. I feel for the kindergarten class, there were seven or eight families who applied and two who got in or something. It was unfortunate. (132P)*

Finally, one parent, in reflecting on why other students from culturally diverse backgrounds (e.g., Asian), may not be involved in DLI, shared that some parents of children who speak a language other than Spanish and English at home, may not feel the need for their child to learn another language since they may already be bilingual in English and another language. She predicted that there may be a sentiment of learning and speaking three languages through the DLI program may be "too much".

> *I could see it going both ways just like, "Well why would I need to know another language because I already know English and whatever that Asian language is." There's my neighbors across the street are Russian and they're the ones that pulled their kids out and moved to a different school and they purposely didn't put their children in the dual language immersion because they were already English learners because they had spoken Russian at home the whole time that they were growing up until school. I could see people making that choice too. (P155)*

In sum, many predictions were offered for the clearly observed racial demographic disproportionalities in DLI. These included the use of lottery system; financial challenges that may impact access to information about DLI; parental hesitations about their ELL student enrolling to learn a third language, and the need to change up or continue to facilitate a recruitment strategy that emphasizes staff and parents of color representative of the underrepresented groups chairing the recruitment efforts. Parents believed that this may also

remedy the barrier of Black and mixed-raced parents not currently seeing many other families in DLI programs that they can relate to culturally and could increase sense of belonging for those cultural groups.

Sub-theme 4. Exposure to a diverse range of cultures in DLI.

The last component of the disproportionality theme explored was the representation of racially diverse cultures within DLI programming. Of particular interest was the level and frequency of exposure children had to cultures other than Latino culture in DLI classrooms. Interestingly, when asked about exposure to diverse cultures in DLI instruction, all parents shared that they felt their child was learning about "diverse" cultures and went on to explain about all of the units on Latin American culture and history only. Additionally, parents shared how the children were learning about different cultures within the Latino cultures such as differentiating between traditions in two separate countries and learning about dialectical differences in Spanish. A few parents shared that teachings of cultures other than American culture oftentimes reflected the cultures that the DLI teachers themselves identified with. The quotes below highlight these findings and the diversity in Latino culture that parents shared their children were exposed to (see Appendix K for additional quotes).

> *They've had a lot of [exposure to] different cultures that I wouldn't have had when I was growing up...they have a lot of focus on the Mexican holidays and Mexican traditions. (P155)*
>
> *They really got to know through their teachers usually a little bit more about specific countries and origins and it's usually been like if their teacher originally grew up in Chile, which his fourth-year teacher did, she spends a lot of time talking about it. "Well here are some things people do, here are some things in Chile's history and how this went". In third grade, (student's) teacher was an exchange teacher from the south of Spain. He spent a lot of time teaching them, this is Spain Spanish and this is Mexican Spanish. He gets some of the differences. I think my son really enjoyed that. (P148)*

When the parents were probed further about the representation and teachings of cultures other than Latino culture, like Black culture specifically, most parents admitted that they had not heard or seen much instruction or homework specifically related to Black culture. A few shared that they knew their school did a unit on Martin Luther King during Black history month, but oftentimes it was limited to that one month. The selected quotes below highlight this finding (see Appendix K for additional quotes).

> *[School1] does huge both in ELI and DLI and Martin Luther King. A huge conversation about that. I think the [City] School District as a whole stays away from religious things so you're not learning about Kawanza or anything of that nature. I know that in second grade our daughter would read books about whatever their social study was so she wrote about cities. The book was about Hong Kong. It was like maybe from reading they're giving then, but I don't ever remember her really coming home and talking about "This is a unique culture that we talk about." or anything like that.* **[Interviewer:** *You mentioned an MLK unit, do you know if that's specific to Black History Month or if they're learning about black culture outside of that month?]* It must be Black History Month, because it seems like it's the same time every year leading up to MLK Day that they do that.* **[Interviewer:** *Do you feel like that's the extent of black culture that they're learning though at the school?]* Yes. Actually, yes. (P160)*

> *I think her school does Black awareness month, I think that's kind of like all they learn about that month. I haven't heard too much about it, but I think she knows a lot...I think it's just in February, like a Black History month thing. I think the after school [program] should do something like that...[they] should maybe teach the kids a little bit more about diversity and how it's ok to be friends with other races. (P164)*

In summary, although parents clearly notice the teachings of diversity among cultures within the Latino culture, most teaching about other cultures, especially Black culture seems to be limited to Black history month and typical teachings and activities center around Martin Luther King. These findings highlight a disproportionality in the frequency and depth of exploration of a diverse range of cultures and may also further strain the sense of belonging African American and multiracial children experience at school. As noted before, sense of belonging has been linked to academic performance of students and this finding may also help

explain the quantitative findings of underrepresented racial groups in DLI underperforming in comparison to White peers.

Theme 6. The sixth theme involved families' exposure to cultural diversity before and after their involvement in a DLI program. The data revealed several parents feeling that they have had greater exposure to diverse communities as a result of DLI enrollment and that their children are making friends they may not have been friends with elsewhere. They attributed these friendships to the direct and frequent cultural exchange interactions children were involved in through DLI. For example, a parent with two children, one in DLI, and an older child who did not have an option to enroll in DLI, noted that her children have very different friend groups. She noticed that her child in DLI has a more diverse group of friends and appreciation for different cultures in comparison to her older child.

> *It seems that our younger son, the one in DLI has made more friends cross- culturally than our oldest son (not in DLI). Perhaps that's also something that I feel happy about with his DLI exposure. (P148)*

Some parents also noted that one reason for why they enrolled their children in DLI was to increase the cultural diversity of their friend group even as parents since they recognized most of their friends and other families they spent time with were from their same cultural/racial background. Many felt successful in their endeavors and have been involved in attending school events to intermingle with other families.

> *It (the DLI program) had definitely increased our involvement in the community and our number of friends who don't speak English as their first language. I think even more so for our son. Some of his closest friends at school are people who speak Spanish in their home. (P148)*
>
> *They've been exposed to diversity that they wouldn't have been exposed to otherwise. (P155)*

Overall, parents did notice a shift in their family's level of exposure to cultures different from their own and shared their satisfaction with their child attaining the goal of expanding their friend group to include more children from diverse backgrounds, a primary reason that most parents shared they enrolled their children into DLI classrooms to begin with. As an added benefit, some parents also expanded the racial diversity of their friend groups by engaging frequently with parents of other youth in the DLI program through school and community events that bring them together.

Theme 7. The seventh theme involves parents' perceptions about their children's skill level in Spanish and English. All parents noted that they observed progress in their children's language skills in both languages. Some parents did acknowledge that there were sometimes vocabulary gaps, but it didn't seem to be such a great barrier that it complicated their child's ability to understand language within context or serve as a major barrier to thier language expression. While some parents were initially hesitant about how learning in primarily the Spanish language may impact their children's English language growth, none shared that this was of concern for them once their child began their bilingual education in the DLI program. As their comments show (see Appendix K for additional quotes):

> *I am extremely satisfied because they both (children) are, I would say fluent in Spanish to the level that they should be. (P155)*

> *She's pretty much in alignment with her peers...I think she's doing really well. She is, I mean, almost fully bilingual. I mean there's a lot of vocabulary she hasn't been exposed to yet, that she still has to maybe reach to the dictionary for, but I think it has been a good experience for her, (P104)*

Not only was there satisfaction with their child's academic language and literacy growth, but some parents even expressed that involvement in the DLI program has encouraged their children to continue in their language learning. Some parents of older students shared that

their children do want to continue to attend a DLI middle school where they could continue to strengthen their bilingual skill. In describing options for middle school for her son, one parent shared the following:

> *My fifth grader is going to be in middle school next year and they're just starting the process of having to pick a couple electives. There's some choices being offered in terms of schools that you can enroll to and he made a comment that, "well, I was thinking of going to this school, mom." which he really-- that was going to be his choice, but,[he said] "I was thinking of going to this school, but I realized they don't have a DLI program there. I really want the DLI program." (P155)*

As the findings reveal, once enrolled, both parents and children experienced linguistic benefits from the DLI program. So much so, that it encouraged most parents and some children themselves to express interest in continuing to learn bilingually through a DLI middle school upon their transition from elementary school.

Theme 8. The eighth theme explored areas of growth for DLI. Although parents were not explicitly asked about areas of growth for DLI, enough parents made comments and suggestions for changes that it became a common theme. In general, three major areas of growth for DLI were expressed: 1) better meeting the needs of advanced learners (AL), 2) better recognizing symptoms of trauma, and 3) the needed recruitment of a more racially diverse and representative group of students in DLI classrooms.

The first area of growth mentioned, better meeting the needs of AL students, was expressed by a few parents who have children who take some AL classes (e.g., math, reading). Parents felt that not enough supports were in place for AL students at their school. The parents did not feel that this was a unique challenge to children in DLI, but instead, was a current challenge in the whole school district. The scarce support was attributed to a combination of a shortage of resources, available teachers, and the higher demand of needs for other students that are struggling academically. As one parent shared:

I think there's not enough money and focus on advanced learning, there's so many kids who are struggling academically, really seriously struggling, so much and it's so severe to not be able to read or do basic math [so] they're really putting effort into trying to help bring some of the kids who are not moving forward up to proficiency level…because there's also not the resources-- there hasn't always been as much focus or effort in helping kids with challenges who are doing well [...]Kind of help provide challenges for kids who are already meeting the bar or above the bar sort of like, "You're doing great, we'd love to help you more," but, over here we have some fires to go to put out, we'll be with you when we can". I know that that's not unique to [School] or Spanish, I don't think it has to do with the dual language. I think it's more across the school district, (P132)

Another parent also noted some these challenges and was concerned that advanced learning supports were not being offered in Spanish, only in English as far as she was aware.

DLI does not recognize how to promote advanced learning, like in a Spanish setting. They could easily do the English, now that they have the right kind of staffing, but my husband I recognized, because of the force of (School), the overcrowding, the lack of, just not enough time or teachers, that we as parents have to really step in and meet with the teachers as best we can and try to do what we can at home and continue to have meetings with teachers in order to advance our children with their learning, in whatever process that they need help in. (P160)

Another parent also noted not being sure if Spanish AL supports were offered:

I don't even know if they give advance learning in Spanish. He always tested at the top on Spanish language, but they really actually get into any support in English advanced learning. There's only really Math. ... don't even know if they were identifying kids needs in advanced Spanish. (P132)

Parents also shared that they have had to vigorously advocate for their child's needs at school and have had to put in additional work to provide their child with what they need at home. The parents who did have AL students, all of whom were White, also spoke regarding the disproportionality they noticed within students receiving AL services. Parents shared that most students in AL classes were middle class and White and that all of the parents that they would run into at the schools at the advocacy meetings for advancing AL supports were usually privileged White parents. Those that were not, did not seem to have their voices heard. This

was something they believed should change as well to expand and create a more inclusive and

representative AL community.

> *I especially worried, and I know the principal was worried about it not being something that there's resources for, it's the -- kids who don't have a parent who's advocating especially like disadvantaged kids or kids who might be advanced in Spanish or something that isn't as like -- I feel like massive straightforward... I feel like there's probably kids who are falling through the cracks and could benefit from advanced learning (P132)*

> *You as a parent need to do a better job than wait around for three years and then go and complain [about AL services] and blame it on the teacher them being an incorrect advocate. We just kind of didn't go to the third [AL advocacy] meeting after that because we thought that that was just ridiculous [...] (School) is a mixed school. It's got the affluent parents that expect everything to be handed to them on a platter, and then you've got the families that are struggling just to get food on the table, and families that aren't even aware of the resources or the fact that they should be advocating for some of these things because they may just not be aware. And at those meetings, they recognized all the Caucasian individuals, but anybody that was not of a Caucasian race, were not. So the disparity between African American kids and Hispanic children in (School) that were advanced learners were not being recognized. (School)'s come leaps and bounds, it's getting better, but you know it's definitely got a lot more growth to go. (P160)*

Another area of growth that was mentioned was to better recognize symptoms of

trauma and incorporate trauma informed care practices within the school. Trauma informed

approaches include: *Realizing* the widespread impact of trauma and understands potential paths

for recovery; *Recognizing* the signs and symptoms of trauma in families, staff, and others

involved with the system; *responding* by fully integrating knowledge about trauma into

policies, procedures, and practices; and seeking to actively resist *re-traumatization* (Trauma-

Informed Approach and Trauma, 2015).

The quote below captures a parent's concern about the way in which behavior

management and teaching currently is implemented for children who may experience trauma.

Trauma may certainly also be a confounding variable in the study impacting the test

performance of children in the study.

They don't have enough behavior support. A lot of kids have IEPs. The school system needs to recognize that [School] is a unique school and they need to change how they structure things. They need to teach teachers how to deal with children coming from traumatic home life. In a way a lot of these kids have PTSD in some shape, way, or form and if they were taught in a different manner, I think that [School]'s kids would strive and they would thrive if they were taught a little differently and handled a little differently. (P160)

The final area of growth mentioned by the majority of the parents was to increase the representation of African American, multiracial, and other underrepresented racial groups in DLI programing. As aforementioned, parents clearly noticed the disparity and felt that greater recruitment efforts needed to be made in this area.

Theme 9. The ninth theme was parental advocacy, involvement, and leadership. Interestingly, the majority of the parents interviewed shared at least one instance of their advocacy for their child at school and active school leadership. School leadership opportunities included advocacy through involvement in a focus group, such as the AL parent group that noted meeting frequently to advocate for the advancement of their children's needs in AL classes. School leadership also included involvement in parent-staff organizations such as the Parent Faculty Organization (PFO) and Family-School Partnership meetings, and assisting with school recruitment, especially for the DLI program. The quotes below capture a few of the mentioned leadership commitments.

I was on the PFO, the Parent Faculty Organization board, for three years. When I left it was my third year on it. I was super involved. (P155)

I joined the board, since [School] is a charter and there's the school and family alliance just like the group that holds these monthly meeting. Then there's [School] incorporated which is the non-profit that holds the charter for the school. I joined the board for that three years ago. That's made up of mostly people, or like half and half people from the school or people in the community who are committed to dual language education. (P132)

Additionally, parental advocacy for their child's needs was a noticed theme. Parents made mention of the type and frequency of communication they directly asked for from their child's teachers, school staff, and other parents, as well as their direct advocacy with school administrators when conflicts arose involving their child. One parent even shared that she went directly to the principal's office without an appointment when her child was experiencing bullying that she felt was unresolved in order to fight for her child's needs. The parents shared the following:

> She [the teacher] always texts me when she's (daughter) doing good and she texts me when she's doing bad, but that's what I asked for at the beginning of the school year. My daughter was having a very hard time focusing at the other school, so I kind of informed her teacher that, that she was having some trouble with focus and frustration...and I feel like that really helped the teacher a lot. (P164)

> We went and talked to the teacher and we thought things were getting better, the teacher went and talked to the person overseeing the lunchroom recess. This went on for five weeks, because it seemed to get better then all of a sudden started back up again. I rolled up, like the mama bear that I am, went to the school unannounced and I basically said that I will be here all day till I could speak with the principal. At the time, one of the dads of the bullies ended up coming in to report something as well, and while we were waiting to speak with the principal he actually talked to me about it and said, well, I don't know the kids' name, but this is what I know is happening. And he goes, well that sounds like it could be my son and I just said, "Then what's going on in your home life that you're causing a five or six-year-old to be innately mean?" so I went off on him. I said, "If my son is causing problems I expect you to give me a call, let me know and I will take care if it immediately. Then I ended up speaking with the assistant principal...He sort of knew about the bullying and he quickly realized that he hadn't taken care of the problem, and I was not going to leave his office until I could have some guarantees. So, I called him out on his job, that he wasn't doing it, and saying things were fine. (P169)

It was also found that the parents making up leadership boards and groups at schools were primarily White middle class parents. Although all the parents that were interviewed mentioned advocating for their child at school, only White middle class parents from those interviewed mentioned being actively involved in a school leadership group of some kind.

Those parents also discussed the racial disproportionality they noticed in the representation of those heading and attending parent or parent-staff leadership groups and events. Some made note of the efforts their school team has made to increase diverse representation in leadership meetings, but such accommodations seemed to be focused on recruitment of more native Spanish speaking parents and not so much on parents of other racial backgrounds. When one parent made predictions about the current racial representation of the parent leadership boards, she spoke only about Mexican culture and the potential cultural differences in expectations about the role of a school versus the role of parents on their involvement.

> *It seems like the leadership tends to be more Anglo and White which having been part of that group, we tried to figure how to shift that and it seems – and like the group, the people who are setting meetings and organizing fundraising things. I think that there's some amount of free time and availability to [be able to] come to things like that, but even with childcare and food being provided, there's not as much attendance, or participation from not White Spanish speakers...it seems like from what we've heard there's some amount of cultural difference and expectations. I think that especially in Mexico, there's a sense that the school runs the school and parents aren't as involved, especially being involved in a leadership way where you're setting the agenda to make change. It seems like perhaps one of the reasons we're not seeing quite as much participation in the leadership side of things is it's not as much a familiar way to participate in the school as it is here in the U.S. (P132)*

> *The Parent Faculty Organization, the last meeting they've gotten a lot more Spanish families to attend, which is always a challenge and they actually held the meeting in Spanish and then English speakers had on the headphone to hear the interpreters. That was a really good experience for everybody. (P155)*

Overall, data revealed that although student advocacy in schools was something frequently done by parents of all backgrounds, those that were involved in the school leadership groups that plan for systematic school-wide changes were mainly headed by White middle class parents. Predicted reasons for this could be culturally different perceptions about school leadership and parental roles, and could also involve financial barriers. For example, parents involved in parent-staff leadership boards such as the PTO or PFO may engage in

events where they raise money for the school and may feel obligated to make financial contributions themselves. Fundraising and recruitment events also often require a lot of extra time and access to transportation. A certain amount of flexibility in scheduling is also often required for both school leadership involvement and at school child advocacy. As one mother shared, when her child was having a conflict with another peer at school, she was able to drive to the school mid-day and wait as long as may be necessary in order to speak with the administration to have her objective met. Parents who work full time or may work multiple jobs to sustain their family's living style and education may not have the privilege of advocating in the same ways which may sometimes leave some children's needs unmet. In effect, such circumstances may also impact student learning. These findings thus also lend another possible explanation for the trend in quantitative data that children from low income households earned lower scores in the academic assessments and the finding that the underrepresented racial groups of focus scored lower than White peers. The parents of children from the more privileged groups may have easier access, more time, or a greater voice in the school by nature of being involved in school leadership groups with staff that afford them greater resources for their children to meet needs.

Theme 10. The final theme was the level of satisfaction parents felt with the DLI program and their decision to enroll their child in it. There was consistency in all responders feeling extremely satisfied with their decision to enroll their children in the DLI program. Parents shared that they felt the classroom environments in DLI were extremely welcoming and were very impressed by the level of teamwork and collaboration among students and the level of kindness and respect they observed the teachers and students sharing with one another.

Parents felt that the DLI teachers were inspiring their children and expanding their

understanding of diverse cultural values and learning concepts and really challenging students

to work towards their full potential. The selected quotes below highlight parents' level of

satisfaction with the DLI program and a few of the comments the children shared with their

parents as they have grown more motivated to learn new languages and appreciate bilingualism

and diversity (see Appendix K for additional quotes).

>*[I'm] completely satisfied. (P160).*

>*She's begging me to buy Rosetta Stone in Arabic...It's (the DLI program) sparked an interest, and when people say, "what do you want to do when you grow up?" she's like, "I want to learn as many languages as I can." (P104)*

>*I would say [I'm] extremely satisfied because they both are, I would say fluent in Spanish to the level that they should be. I mean for the age of the child, I feel like academically they're doing great, they have wonderful teachers, they've been exposed to diversity that they wouldn't have been exposed to otherwise. (P155)*

>*Each classroom that she's been in, it's very like a family, community-based. If it were not a DLI school, I would love it just as much in terms of just sort of the overall climate which is just very sort of, I don't know how to describe it other than loving. Very loving. (P100)*

Summary

Findings from the quantitative data supported many of the initial hypotheses regarding

the performance of different groups within the DLI program and Mainstream English

classrooms. In comparison to lower income children in DLI classrooms, students from middle

and upper income households had higher mean scores on most assessments, although not

significantly so. Comparing children's assessment outcomes between DLI and Mainstream, no

significant differences were found although there was also a trend in higher income students

(regardless of program model) scoring higher on average than those of lower income status. In

exploring the outcomes of the focal racial groups (African American and multiracial children),

in comparison to White peers in DLI, children from the underrepresented racial groups scored

significantly lower on some, but not all, assessments in comparison to White children.

Interestingly, significant score differences existed for the Spanish assessments, but not English

assessments. Comparing the outcomes of native Spanish speaking Latinx youth to native

English speaking White children in DLI, Latinx youth scored significantly lower on some of

the English assessments in comparison to White children. Trends also indicated that Latinx

youth scored higher on all Spanish assessments while White youth scored higher overall in

English assessments. The English language and literacy outcomes of Latinx youth in DLI were

compared to students in Mainstream classrooms and it was discovered that students in

Mainstream classrooms had significantly higher literacy comprehension skills in English than

those in DLI, but reading fluency and vocabulary knowledge in English were comparable

between groups. When further exploring the impact of socioeconomic status on

underrepresented groups' academic performance, African American and multiracial students

scored significantly higher on most Spanish assessments in comparison to low income children

from the same racial backgrounds. In contrast to many previously noted studies on the

enhanced executive function skills of bilingual individuals in comparison to monolingual

individuals, this study found no significant differences between groups, although bilingual

children showed overall faster reaction times between both trials. Similar to previous studies,

mean reaction time for incongruent trials was longer than for congruent trials.

Many findings from the qualitative data helped explain some of the economic class and

racial differences demonstrated among different groups of students in DLI and Mainstream

classrooms. Most notably, every interviewed parent shared multiple barriers that they believed

existed for families of low income status and racial minority status that could impact their

access to and gains from the DLI program. Parents noticed very disproportionate demographics with regards to the underrepresentation of African American and multiracial children in DLI and voiced that this was an area needing significant work in their schools. The lack of more proportionate racial representation was also linked to sentiments of families from underrepresented groups feeling like DLI may not be a program designed for their children and questioning how their child may benefit when their sense of belonging may be threatened. Many parents also discussed the discrepancy in the level of behavioral problems between DLI and ELI classrooms with greater behavioral concerns noticed in non-DLI classrooms. Some parents even shared about instances of bullying and discrimination that their children experienced. A couple parents even observed and noted tension and bullying behaviors between children of different racial groups (e.g., African American and Latinx children). While parents noted areas of growth for DLI programing and their school in general, including increasing recruitment efforts of underrepresented groups, and better supporting the needs of AL students, all parents expressed very high satisfaction with their child's involvement in the program, noting growth in areas of expanded cultural awareness, more diversified friend groups, and excellent achievement in their child's development of a second language.

Chapter Five

Discussion and Conclusions

Introduction

This chapter first provides a discussion and interpretation of the main findings outlined in the previous chapter. Following, the chapter provides practice implications for further improving DLI programs and the role school psychologists can serve, based on these findings. The chapter concludes by sharing limitations and possible future directions within this line of research.

Discussion of the Results

The primary purpose of this study was to examine how dual language immersion programs serve underrepresented populations such as African American, multiracial, and low income youth. Both academic outcomes, such as biliteracy skill development, and the cultural environments within DLI were explored. In the following discussion, I focus on interpreting the six primary findings.

Overall, this study found evidence suggesting greater academic challenges for native English speaking students of lower socioeconomic background and from underrepresented groups in DLI than for White and higher income students in DLI[1]. Although no prior studies have focused specifically on the target populations for this study (low income native English speakers and African American and/or multiracial youth in DLI), this finding is consistent with broader literature in English instruction classrooms that explores the connections between socioeconomic status and minority status on students' academic outcomes. For example,

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[1] Although not all findings were statistically significant, all trends in the data showed that students from lower SES and underrepresented groups had lower scores on language and literacy assessments than White and higher income students.

research on the racial disparities in reading achievement assessed by the National Assessment of Educational Progress (NAEP) in 2017 which reveal wide literacy discrepancies between African American and White students, is consistent with this study's findings.

National data on socioeconomic achievement gaps has consistently found that students from lower socioeconomic status as a whole, earn much lower scores on national standardized reading assessments than higher income students (Duncan and Magnuson, 2007). Sirin's (2005) comprehensive meta-analysis of research involving over 6,000 school and 128 school districts also supports a strong SES-achievement connection.

In particular, this study found that African American and multiracial youth in DLI programs show a trend in lower mean scores on all language and literacy assessments when compared to White students, with significant differences between the focal group DLI students and White students for some of the Spanish assessments evaluating reading comprehension and vocabulary in Spanish. The minority focal groups scored significantly lower in these areas than White students. There are a few possible reasons for the significant difference in Spanish scores for the African American and multiracial students. One reason may be that African American and multiracial students in DLI may not interact in Spanish as often with Spanish speaking students in or outside of school as White students. Prior studies have found that frequent exchanges with native speakers of an immersion language outside of the school setting can help language learners more quickly acquire a new language (Ryan & Lafford, 1992). Such opportunities for minority group students to connect with one another may also be hindered due to socioeconomic reasons such as parents' ability to financially support after-school activity involvement or even travels to Spanish speaking countries. As revealed in this study, DLI parents did perceive low socioeconomic status as a significant barrier to student

learning opportunities. Another possible reason for this finding may also involve the quality of interaction between African American, multiracial, and Latinx students. As demonstrated in the qualitative data, many students experience inter-ethnic conflicts. Poor social interactions among student racial groups can also hinder language growth as it limits opportunities for cross-language practice and peer learning supports. The significantly lower Spanish scores for the focal minority group students from those of White students is also important in that it may suggest that greater support for interventions may be needed in Spanish in particular for students of these racial groups in DLI.

Additionally, comparing English literacy outcomes of the focal racial groups across program models (African American and multiracial native English speakers in Mainstream vs. African American and multiracial native English speakers in DLI), no significant differences on English literacy were found. Although firm conclusions cannot be drawn by failing to reject the null hypotheses, these results seem to suggest, nonetheless, that whether African American and multiracial students learn in English through a DLI program model, or a mainstream program model does not seem to matter. The trend in similar mean English literacy scores between the DLI minority focal group and White DLI students further supports this possibility. Moreover, there may be added benefits for parents from these underrepresented racial groups to enroll their children in DLI: children seem to acquire English literacy skills at a rate similar to those in mainstream, but with the added advantage of acquiring a second language, and potentially reaping benefits associated with being bilingual such as having broader experiences of diversity and greater opportunities for future careers.

Comments from DLI parents about predicted barriers and challenges for low SES and the underrepresented DLI groups, supported the trends in lower literacy attainment among

these focal populations. Parents noted accessibility and financial barriers to resources, such as Spanish or English tutors and ability to engage in enriching after school programs, as challenges that may create discrepancies in the learning outcomes of lower income youth. Indeed, the research literature supports these parents' perceptions in that social class disparities are associated with student' absences from extracurricular and after-school enrichment programs that could enhance learning (Peters & Gentry, 2012).

Additionally, all parents recognized the stark underrepresentation of the focal racial groups of this study and shared sentiments that African American parents may perceive that DLI is not a welcoming place for their children. Although all parents shared that there are some recruitment efforts to try to increase racial representation, systems, such as the lottery system used to enroll families into DLI can serve as a barrier. In addition, although efforts may be made to increase recruitment of underrepresented racial groups, the small proportion of students representing these racial groups in DLI may serve as a further deterrent for families as they may question their child's 'sense of belonging' and this may create a reciprocal cycle of failed efforts in recruitment. This signals a need for a critical mass sufficient for underrepresented groups to feel comfortable with enrollment.

Indeed, studies have found that schools that facilitate positive relationships among peers, a child's sense of belonging, and fair discipline practices are associated with positive perceptions of school connectedness, which in turn is associated with positive academic outcomes (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Shochet et al. (2006) also found that students experiencing a low sense of connectedness to school may also experience mental health symptoms such as emotional distress, anxiety, and depressive symptoms which can also impact learning. Parents' comments about underrepresented students' lack of

representation in DLI and their potential perceptions of "difference" and belonging in these environments are thus consistent with literature indicating relationships between sense of connectedness at school and academic outcomes, and is especially important to consider among underrepresented youth. These findings thus also signal the need for assessment of school and program climate and DLI students' sense of belongingness in their classrooms, as well as interventions targeted at increasing underrepresented students' recruitment and sense of belonging in DLI programs.

Another major finding of the present study is that bilingual children appeared to have overall faster mean reaction times on the executive function task than monolingual children. This also may mean that bilinguals had lower conflict effects than monolinguals as created through incongruent trials on the flanker task. The elevated mean scores and trends were consistent with findings from previous studies (Bialystok et al., 2004; Costa et al., 2008), however, the lack of significant differences aligns more closely with more recent literature challenging the existence of a true bilingual advantage (e.g., Paap & Liu, 2014).

Bialystok (2015) suggests that reasons why there may be inconsistency or a lack of statistical significance for bilinguals showing faster reaction times and accuracy rates in the executive function task in comparison to monolinguals, could be due to differences in populations studied, criteria used to define "bilingualism", and variations in the executive function task that is used. Although the current study utilized a very common experimental task of executive function, the flanker task, the task used in this study may still look different from flanker tasks that were administered in other studies that found more significant differences between child language groups. For example, the pause time between presented items in the Flanker test may differ, as could the number of trials, possibly explaining discrepancies in

findings among different studies. Additionally, how bilingualism was measured in this study relied on parents' ratings of their children's bilingualism and self-report data from parent questionnaires which may have been overly broad. For example, if a parent stated on the questionnaire that their child is a native English speaker and emergent bilingual in a 5th grade DLI program using Spanish 30% of the time or higher outside of school, then they were classified as bilingual. Similarly, if a native Spanish speaking ELL student in a DLI program was reported to be using 30% English outside of school (most often this was reported as English use among siblings at home), then they also were qualified as bilingual. The perceived frequency of language use was subjective and other studies which found statistically significant differences may have used more restrictive standards to delineate "monolingual" from "bilingual". Although SES was one factor controlled for in this study, researchers who challenge the existence of a bilingual advantage, such as Paap and Liu (2014), offer that there are many possible confounding factors (e.g., immigrant status, culture) that may impact group differences in executive function. Additional research controlling for a greater number of factors may thus be useful in continuing to explore the impact of bilingualism on executive function among children who are emergent bilinguals in DLI.

Another interesting finding of the present study is that Latinx youth in mainstream classrooms were found to have higher English literacy outcomes than those in DLI. Prior research studies have shown learning a language can require up to seven years (Conger, 2009), so those in elementary-level DLI classrooms may be slightly behind in English literacy before catching up to peers in mainstream classrooms. Given the young grade level of participants assessed, it may be the case that they are not yet sufficiently "bilingual" to reap the academic benefits in two languages as research shows for bilinguals. Some research also supports that

vocabulary is more limited in each language for bilinguals (Allman, 2005; Ben-Zeev, 1977; Bialystok, 2001). This limited vocabulary could be due to a lower frequency of words in each language to which bilinguals are exposed (Zeev, 1977) or due to limitations on the breadth of information that can be stored in accessible memory when bilinguals are developing their cognitive capacities (Bialystok, 2001). Latinx youth in mainstream education may focus more on learning English and may not be reading or writing in Spanish at home due to all homework being in English, thus influencing their higher growth in English vocabulary compared to those in DLI.

Surprisingly, the mean scores in English reading fluency and comprehension were comparable between the Latinx youth in DLI and in mainstream classrooms. Some confounding factors may be at play. For example, both groups of Latinx children may orally hear a comparable amount of English from after-school programs and English-speaking friends which could explain comprehension growth being similar for those in DLI and ELI. Assessment tools and instructional methods for teaching English reading fluency in DLI may also be a strength of the DLI program that may help explain these similar group scores.

Another important finding in the present study is that DLI programs appear to privilege Latinx and White cultures. When interviewed about the diversity of their child's DLI classrooms, all parents shared that they believed their child's classroom to be "very diverse" and described instances of their children learning about cultures other than White American culture. Surprisingly, most descriptions of the cultural "diversity" related to Latinx culture. For example, parents shared how their children were involved in Mexican cultural celebrations at school and how children were learning about differences in Spanish language dialects from DLI teachers from various Spanish speaking countries. The examples of exposure to cultural

diversity were overwhelmingly limited to Latinx cultures and revealed that diverse cultural discussions often aligned with the cultural backgrounds of DLI teachers who were native Spanish speakers. Most DLI teachers who were native English speakers were reported to be White. The DLI programs thus mirror Latinx and White culture by nature of the racial representation of both teachers and students within DLI. As many parents noted, DLI programs primarily consist of students from Latinx and White backgrounds. Given the racial demographic trends in DLI, Latinx and White students may not feel that their sense of belonging is threatened or experience the same challenges that youth who are underrepresented in DLI, such as African American students, may experience from their noticing that their peers and teachers do not look like them or that the programs do not spend much time integrating their rich cultural histories as well.

The parents' usage of the word "diversity" also did not seem to extend much beyond race and Latinx culture. Parents did not mention their children having more friends of different religions, ability levels, or different gender identities. This implies that parents, staff, children, and administrators may all benefit from expanding their diversity discussions and learning. A couple specific programs successfully promoting diversity in schools are noted below, in the study and practice implications section.

Although interethnic conflicts were not a primary area of focus in discussing DLI culture with interviewed parents, it was interesting that many parents spontaneously raised this topic and provided many detailed examples of their children's inter-racial experiences. This study found that interethnic conflicts existed not only within students in DLI, but also among non-DLI students and between DLI and non-DLI students. Parents of racial minority children shared that although their children experienced some discrimination from peers of a different

race than theirs in the DLI program, they did not feel the situation was unique or that their children may have experienced any less discrimination in a different school, thus suggesting inter-ethnic conflicts are not unique to DLI settings and could occur among children of all different racial backgrounds. Indeed, Skutnabb-Kangas (1988) suggests that inter-ethnic conflicts among students in educational settings are rooted in ethnic conflicts and power struggles within our society at large and that conflicts are a manifestation of institutionalized racism. In particular, Tajfel's (1979) social identity theory can be useful for explaining racial conflicts and racism. Tajfel (1979) proposed that people aim to boost their self-image and by enhancing their status of the groups to which they belong (their "in-group"). Self-image can also be increased by discriminating against and holding prejudiced views towards people in the "outgroup" (groups to which the individual does not belong). This aim to maintain positive self-image and status, thus perpetuates an "us versus them" mentality and may contribute to increased racism and discrimination among students of different ethnic and racial groups in schools. I believe active efforts must be made in schools to counteract these interpersonal dynamics and suggestions are made in the implications section of this study.

Parent interviews also revealed that White parents struggle to discuss race with their children, especially as it related to explaining evident "behavior" differences their children may observe between racial groups and between DLI and ELI classrooms. In response to their children inquiring about their noticing of more behavioral discipline towards African American students for example, some parents shared quite simple responses (e.g., "it doesn't have to do with race"). In effect, even if unintentional, overly simplistic responses, to student inquiries about race could validate White children's beliefs about their cultural/racial behavioral standards standing superior to those of "different" manifestations of behaviors from

marginalized groups. Further discussion regarding institutionalized racism and cultural differences in "acceptable" behaviors did not follow in the parents' responses about how they handled race conversations. Many White parents shared that it was difficult for them to find the right words to discuss racial topics with their children. This gap indicates a need for greater resources for parents and school staff to support and encourage productive race and equity conversations in addition to lessons broadening their definition of "diversity" that should be taught in schools.

The last major finding was that all parents reported high levels of satisfaction with their child's DLI program and decision to enroll their child in the DLI program instead of an ELI program. Parents did not share any sentiment of their child being "behind" in either the Spanish or English language skills in comparison to peers in mainstream classrooms, and all parents noted the added benefit they felt the DLI program provided their child to become bilingual. This sentiment is consistent with the lack of statistical significance in the literacy data comparing those in DLI overall with those in Mainstream classrooms. This finding suggests that although DLI programs have areas of improvement including: expanding upon their teaching of diversity areas and various racial cultures; diversifying demographics; supporting underrepresented minority and low income youth sense of belonging by providing more resources and initiatives to decrease inter-ethnic conflicts; and increasing literacy intervention supports in the area of Spanish for underrepresented youth, African American, low income, and multiracial youth, do not seem to encounter challenges significantly different from those in ELI and also reap the benefit of becoming fluently bilingual and biliterate in the long run. These possible benefits make these underrepresented groups strong candidates for DLI

programing and could provide them with greater educational, occupational, and relational opportunities with diverse populations in their futures.

Practice/Study Implications

Results from this study provide information regarding the possible impact dual language immersion programming has on students, particularly students from underrepresented groups. Findings suggest that greater Spanish interventions may be needed to support African American and multiracial students in these programs as their outcomes in Spanish growth significantly lags behind that of their White and Latinx majority population peers.

The significant qualitative findings were that (a) references to "diversity" curriculum and cultural exposure appear limited to Latinx cultures; (b) there remain inter-ethnic conflicts and disproportionate discipline practices in DLI; (c) families appear to need support discussing race with their children; and (d) children from low income homes may face significant challenges in education and access in comparison to higher income children. These findings also suggest that dual language immersion programs could benefit from curricular and practice models that help educators, staff, students, and parents expand on their knowledge of additional marginalized cultures and sources of diversity such as gender, religion, and socioeconomic status. Implementing such curricular and practice models which expand on discussions of equity and diversity in schools and develop a more restorative approach to conflict resolution, can help increase underrepresented students' sense of belonging in DLI programs. Two suggested approaches that I believe could meet these goals and the embedded curricular, recruitment, and socioeconomic challenges, and support dual language immersion programs are restorative justice practices school-wide and use of diversity dialogues.

Educational restorative justice is not just program to be implemented, but rather a mindset composed of three primary components: building and maintaining healthy relationships, creating just and equitable learning environments, and repairing harm and transforming conflict (Evans & Vaandering, 2016). The core belief that drives these components is the philosophy that all people are worthy and relational (Evans & Vaandering, 2016). The core values of restorative justice are respect, dignity, and mutual concern. Importantly, restorative justice practice is not to be used as only a disciplinary tool as that has the potential to perpetuate harm, but rather, should be utilized as a preventative measure that can help people build meaningful relationships and respect for one another that may universally prevent and reduce conflict and harm.

First, in schools, building and maintaining healthy relationships involves acknowledging that social and emotional health are critical for learning and living (Evans & Vaandering, 2016). Both students and educators thrive when they experience respect and acceptance by those around them (Evans & Vaandering, 2016). Working actively and intentionally towards building positive relationships among all, thus may have the potential to increase positive school culture climate and increase sense of belonging among minority students. Second, creating equitable learning environments involves educators and staff exploring their own bias and critically and intentionally analyzing how their classroom may perpetuate bias or favor some cultures over others. Restorative justice in education involves using culturally responsive pedagogy and curriculum, diverse instructional approaches, as well as social interactions that embody justice and equity in meeting student needs (Evans & Vaandering, 2016). DLI programs can address the curricular issues found in this study through this restorative justice model by making a cultural assessment of how many truly culturally

diverse books, posters, and activities are present as well as assessing and continually reflecting on culturally sensitive teaching styles. Black history, for example, should be taught throughout the year and not just during Black history month so as to encourage students and staff to notice it as a culture just as important and valuable as Latinx cultures. The history and traditions of cultures not even represented in the DLI demographics or even the school demographics should also be explored. For example, even though there may not be a single Hmong child in a DLI, it expands children's cultural competency and cultural diversity awareness to learn about Hmong culture regardless. When children go home to their parents and share about cultures that may not even be represented in the classroom, parents as well, expand on their definition of their child gaining a truly "culturally diverse" experience in DLI rather than one that is limited to Latinx culture. Creating equitable learning environments also entails assessing which students are called on to participate and serve as leaders in school most often, whose voices are heard, and whose faces are most commonly represented in distributed school materials. More diversified representation in classrooms of the cultures of under-represented groups in DLI may also help with recruitment of more underrepresented student populations.

An important quantitative finding from this study which was further supported by quantitative data was that low income children struggle more academically than higher income children. This may also be due to low income students' lack of access to financial resources to increase opportunities for success (e.g., private tutoring, social activities to expand language growth with peers). The educational equity component of the restorative justice model would encourage that school supports should be implemented to reduce low-income children's sense of otherness and access to academic supports (e.g., free tutoring, free after-school programs, waivers/ financial support plans for sport equipment/ instruments and equipment that may be

needed to engage in after-school activities). Such accommodations may greatly reduce financial stressors for all low-income families in DLI and bolster children's academic success. Approaching school equity with intentionality and considering the impact bias practice has on underrepresented students academically, socially, and emotionally may thus significantly improve the culture within DLI programs and schools universally at the Tier 1 level of school intervention.

The third component of restorative justice, repairing harm and transforming conflict, involves utilizing an approach where students involved in a conflict learn to take responsibility for their behavior by understanding how their action affected others, learn from the incident, and take what action is required to repair the harm. In schools, this may involve use of restorative circles, and using non-accusatory language to assess and support conflict situations (e.g., "What happened? What has been harmed? What needs to be done to repair the harm") rather than accusatory language (e.g., "What rule has been broken? Who is to blame? What punishment/sanction is deserved?"). This strategy could play a critical role in reducing inter-ethnic conflicts and supporting schools in creating more equitable discipline practices that focus on repairing relationships and building understanding over assigning blame and dispensing punishment. Findings from the present study revealed that disproportionate discipline practices and inter-cultural conflicts existed in DLI schools among both DLI and non-DLI students. Implementing a restorative justice approach thus may support schools and parents greatly, even as a starting strategy of proactive discussions and initial action towards resolving observed inequities and academic and social discrepancies in schools.
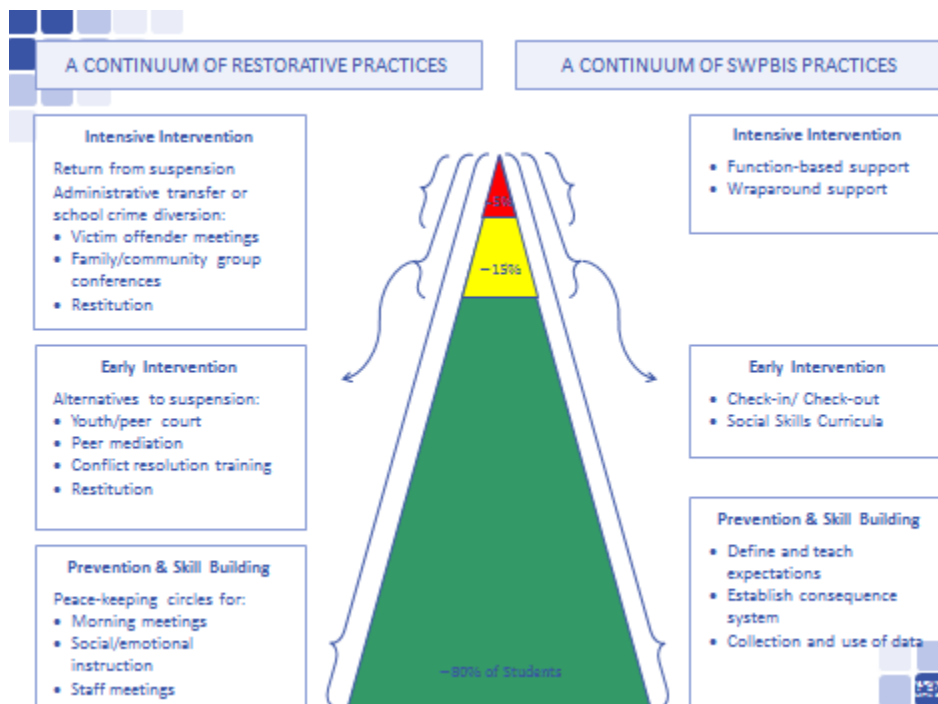
Intergroup dialogue is another approach for teaching diversity topics and justice within schools. Dialogues are face-to-face meeting that take place among students of different

racial/ethnic groups and can be facilitated either by peers or adults. Dialogues provide a space

for students to explore diversity topics and justice issues such as social group membership,

identity, and oppression, through dialogue and individual and small group reflection activities

(Nagda et al., 1999). Similar to restorative justice circles, dialogues allow students to share

personal narratives about their cultures and experiences "in the context of systems of

oppression and privilege" (Nadga et al., 1999, p. 437). Intergroup dialogues have been found to

produce positive effects in intergroup understanding, relationships, and collaboration and

engagement (Nagda et al., 2009). Both approaches, restorative justice, and intergroup

dialogues, could thus serve as effective interventions in reducing intergroup conflict, fostering

greater cultural understanding, and increasing student sense of belonging.

School psychologists can play a critical role with their responsibility to support and

establish effective multi-tiered systems of supports in schools and serve as diversity advocates.

Similar to the well-known response to intervention (RTI) system implemented in most schools

nationwide, the RTI framework is also applicable when considering restorative justice and

interracial relations improvement practices at schools at multiple tiers of support (Morrison,

2013; Vincent et al., 2016). At the universal level, school psychologists can support with

prevention and skill building practices which strengthen relationships (e.g., classroom morning

meetings, social-emotional instruction). At the tier two early intervention stage, school

psychologists may develop and help sustain peer mediation programs, train students in conflict

resolution skills, and facilitate restorative small group circles. At the more intensive tier three

stage, school psychologists may facilitate more intensive circles that involve detailed support

plans and facilitate family/community/group conferences (see Figure 2).

Figure 2

RTI Model for Restorative Justice Practices

A CONTINUUM OF RESTORATIVE PRACTICES

A CONTINUUM OF SWPBIS PRACTICES

Intensive Intervention

Return from suspension
Administrative transfer or
school crime diversion:
- Victim offender meetings
- Family/community group
  conferences
- Restitution

Early Intervention

Alternatives to suspension:
- Youth/peer court
- Peer mediation
- Conflict resolution training
- Restitution

Prevention & Skill Building

Peace-keeping circles for:
- Morning meetings
- Social/emotional
  instruction
- Staff meetings

Intensive Intervention
- Function-based support
- Wraparound support

Early Intervention
- Check-in/ Check-out
- Social Skills Curricula

Prevention & Skill Building
- Define and teach
  expectations
- Establish consequence
  system
- Collection and use of data

Vincent et al., 2016

Additionally, as school psychologists often serve as data coordinators by generating and interpreting useful student and school outcome data, DLI school administrators may benefit from working with school psychologists to consistently collect and review school climate data to evaluate underrepresented groups' sense of belonging. Such data could also support the assessment of the effectiveness of welcoming climate and discrimination reduction interventions such as restorative justice practices and intergroup dialogues, on the academic and social growth of focal underrepresented students in DLI. Sharing diversity initiatives and positive outcome data from the initiatives with African American, multiracial, and low income native English speaking families, may also support schools in improving recruitment efforts. Findings of less positive data after attempts to implement diversity initiatives, could help

schools better determine areas of need and encourage administrators to seek out greater

supports to meet goals towards a true academic equity vision. This study found parent voices in

direct interviews to be invaluable in shedding light on critical aspects of student experiences in

DLI programs that may not have otherwise been discovered through mailed survey data or

interviews with school staff. These findings highlight the need to engage parents in their

students' learning and to connect frequently with them about their perspectives on their

children's academic and social-emotional needs at school. Schools may thus also benefit from

creating parent focal groups, especially for parents from groups underrepresented in DLI to

receive direct feedback on changes that could be made to make schools more inviting for their

children, and to gain greater multicultural awareness of different effective methods of learning

from and teaching diverse groups of students. Focal groups for White parents could also focus

on providing parents with resources on how to speak with their children about race and

differences they may notice as this was found to be an area of need.

Lastly, this study found there to be challenges with recruitment of under-represented

youth groups (e.g., native English speaking low income and African American children) in

DLI. African American and low income parents who were interviewed shared similar reasons

for involvement in DLI as majority groups (e.g., greater diversity awareness and friend groups

for their children, perceived benefits for bilingual development for job opportunities) so there

may not be other unique reasons for why under-represented groups in particular would want to

apply. However, given the finding that cultural curriculums are limited to Latinx culture, this

challenge may be a reason for recruitment challenges. Greater emphasis should thus be placed

on expanding diversity representation. In addition to creating a more welcoming environments

through restorative justice models and curriculums that are more reflective of under-

represented children's cultures, at a school district-wide level, administrators may want to re-think the use of a lottery system since it does limit the participation of under-represented youth. As was discovered from parent interviews, even when seven or eight African American families apply to enroll in the DLI program, the use of a lottery system limits participation to only one or two of the families who apply. When under-represented families apply and are denied, this rejection may further isolate and hinder future applications from these groups. While certain policies may prohibit selective admission based on race and socioeconomic status, the disproportionate demographics in DLI urge a greater discussion around this topic.

Limitations

One limitation of this study was the size of the sample that was gathered both for the qualitative and quantitative research questions which limits statistical and external validity. The small sample was due to working within a school district that provides very limited and restricted access to conducting research with students in schools. A larger and more diverse sample of students may have been represented if the district had not called a moratorium on research being conducted with its DLI program. The selected school district included very few African American and multiracial children in DLI classrooms and it was the only available school district within many miles accessible to the researcher that had a reasonable number of target group students to recruit within DLI programs. With greater funding, data from more DLI schools across different school districts could have been collected, which may have provided findings with greater statistical power and significance. A future direction in a follow- up study is to collect more data from multiple school districts and cities across the country with more racially diverse DLI classrooms. Additionally, with the development of bilingual programs across the country teaching in languages other than English and Spanish

(e.g., English and Mandarin Chinese DLI programs), a future study may expand recruitment to include underrepresented children within different bilingual programs as well.

Another methodological limitation involved the use of self and parent report data. Self-report data is rarely verified independently in research studies. Both the qualitative interview, and self and parent report questionnaires which were administered to determine demographic information and language exposure at home, were measures subject to potential sources of bias. Response biases may occur due to misunderstanding of the proper measurement or social desirability bias (van de Mortel, 2008). Johnson and Fendrich (2005) described how research participants tend to respond to questions in a way that presents themselves in a more favorable image. In other words, a participant may want to 'look good' in a survey to conform to socially acceptable values, avoid criticism, or gain social approval even when surveys are anonymous (Huang et al. 1998; King & Brunner, 2000;). Although confidentiality was offered, it is possible that some participants may have exaggerated or embellished reports about their child's linguistic development and language exposure, or even their own language experience and perceptions of their DLI school culture. There may also exist bias due to motivated cognition and selective memory. Indeed during interviews and when completing questionnaires, some participants acknowledged that they could not recall the exact time when an event had happened (e.g., when they as adults began reading, or when their family traveled abroad for a greater language immersion experience). Due to limited access to the schools and school data records, observations could not take place to confirm or disconfirm some of the shared information, so self-report bias may exist.

The current study also explored a specific underrepresented group within dual language immersion programs that has yet to be studied, thus making the current study exploratory in

nature. Without prior studies examining the same focal group of native English speakers of low income in DLI and African American and multiracial youth, connecting the quantitative findings to prior research on biliteracy development of the focal group was not possible. The study's quantitative research findings could only be compared to prior studies examining the academic outcomes of minority youth in general education classrooms and studies exploring the biliteracy development of DLI programs with predominantly Latinx and White students. This study, however, identified an important gap in literature and encourages further exploration of this topic area within dual language immersion.

Areas for Future Research

While this study helped shed some light on the question, "*Is DLI helping ALL children succeed academically?*", many questions remain. First, due to the limited number of students from the specified focal group (native English speaking low income children, African American children, and multiracial children) in the school district from which data was collected, it is difficult to know exactly how generalizable these findings may be to other school districts, especially ones around the nation that may hold a higher percentage of students from the focal group. Research suggests that while the numbers of African American students in particular, enrolled in DLI programs nationally is very small, the number is steadily increasing. Thus, if this study were to be replicated in the future, a greater sample of the focal group students may be recruited and this may provide more statistically significant data.

This study focused on African American and multiracial raced students. Other underrepresented groups in DLI include first and second generation African students, Asian students, and Native American students. Such students may also enter into DLI already bilingual in English and a native language, thus making Spanish a third language to add to their

repertoire. Future studies could examine the outcomes of these additional groups and further explore the relationship between multilingual development and Spanish and English language and literacy outcomes within Spanish and English DLI programs.

Additionally, this study focused on only Spanish-English DLI programs because they were the only DLI programs available at the school district studied. Some school districts across the country have developed DLI programs in other languages such as Mandarin Chinese, French, and Arabic. It would be interesting to explore the language and literacy outcomes of native English speaking low income youth, and underrepresented racial groups such as African American and multiracial youth in these settings as well. Consistent findings across a range of DLI program types could provide insights on further instructional supports for underrepresented youth.

Last, a future study may also be longitudinal in nature and include older students. Given that second language acquisition takes time, it may be helpful to track the literacy and language outcome in DLI for the same focal population compared to peers in mainstream English classrooms from K-7 and including additional classroom-based and statewide assessment data for literacy. Very few DLI middle schools and high schools within the current school district existed, which limited this study's focal recruitment population to upper elementary. Assessing the language and literacy development of older students may thus serve as a more accurate predictor of children's bilingual development gains through DLI.

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Appendix A

Parent Cover Letter

Dear Parent,

Reading is a very important aspect of a child's academic growth. Strong reading skills have been linked to a greater likelihood of children succeeding in school. In schools, children can develop their reading skills in a variety of different ways and through different settings, including dual language immersion (DLI) programs.

The primary goal of this study is to examine how children develop their language and reading skills in DLI programs compared to mainstream English classrooms. Your participation in this study would help us learn about the best ways to develop all children's language and reading skills. Enclosed with this letter is a consent form that includes more detail about the study.

To participate in this study, please sign the attached consent form and return it to the address in the provided prepaid envelope as soon possible. We hope to begin working with your child right away.

Thank you very much for your consideration and we are looking forward to working with you and your child.

Best,
Lana Mahgoub
PhD Student in School Psychology
Language Acquisition and Bilingualism Lab
(608) 263-5764
UWbilingualismlab@waisman.wisc.edu

Appendix B
DLI and Mainstream Student Recruitment Flyers

DO YOU HAVE A CHILD BETWEEN AGES 7-11?

RESEARCHERS AT THE UW-MADISON ARE CONDUCTING A STUDY ON LANGAUGE LEARNING THAT YOU CAN BE A PART OF!

You will be compensated for participating and your child also earns a free GIFT!

Researchers in the Educational Psychology Department want to learn about your child's language and literacy progress in school

Your participation would include: the completion of questionnaires and language and literacy tasks. If you are interested in participating, please contact us! We'll work around your schedule to determine a convenient time and location to meet.

To learn more and sign up please contact us.

Lana Mahgoub
School Psychology Doctoral Student
University of Wisconsin-Madison
lmahgoub@wisc.edu
608-572-7385

Steve Quintana, Ph.D.
Educational Psychology and Counseling Professor
University of Wisconsin-Madison
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Madison Metropolitan School District Disclaimer: This is not a school-sponsored activity and the Madison Metropolitan School District does not approve, support, supervise or endorse this activity.

Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu	Language Acquisition Study 608-572-7385 or lmahgoub@wsic.edu

Appendix C

Parent Consent Form

UNIVERSITY OF WISCONSIN-MADISON
Research Participant Information and Consent Form

Title of the Study: Language Acquisition in the Context of Dual-Immersion Classrooms

Principal Investigator: Steve Quintana (email: stephen.quintana@wisc.edu)

Student Researcher: Lana Mahgoub (phone: 608-572-7385; email: lmahgoub@wisc.edu)

DESCRIPTION OF THE RESEARCH

You and your child are invited to participate in a research study about children's language and reading development. You have been asked to participate because your child is enrolled either in a Spanish and English dual language immersion program or a mainstream English only program in which your child only receives instruction in English.

WHAT WILL MY PARTICIPATION INVOLVE?

If you decide to participate in this research, you may be interviewed about your experiences with your child's education and will be asked to fill out two surveys about your background and your child. Completing the surveys will take approximately 10-15 minutes. Participation in an interview may take place over the phone and may take up to an additional 40 minutes. If you participate in an interview, we will audio record the interview for transcription purposes, but all data on the recording will be deleted once transcribed and will be kept confidential.

Your child's language and reading skills will be assessed in our lab during the time that you fill out paperwork and complete an interview with a member of our research team. Your child will complete a number of brief language and reading tasks. Their session should last approximately 1 hour.

Upon meeting with your child, we will collect a brief language sample which will be recorded with an audio recorder and will be transcribed for language analysis. We will test your child's cognitive skills, reading ability, language knowledge, and knowledge of sounds. If your child speaks or is learning to speak both English and Spanish, then he/she will be tested in both English and Spanish.

ARE THERE ANY RISKS TO ME?

The risks associated with this study are minimal. Risks to confidentiality are always possible, but we will minimize these by following strict protocols for safely storing and transferring any information you will provide. It is possible that you may feel mild stress when answering some of the questions in the questionnaires or during the interview. You are free to skip any questions that you would like. Risks to your child in the form of mild fatigue are possible. We have strict procedures in place to ensure that your child is not tired during the completion of our tasks. You and your child can withdraw from this study at any time without being made to feel uncomfortable.

ARE THERE ANY BENEFITS TO ME?

Although you and your child may not benefit directly from participation in this study, his/her participation will play a role in helping us understand how to best support children's language and reading development.

WILL I BE COMPENSATED FOR MY PARTICIPATION?

You will receive $10 for filling out the questionnaires and $15 if you are randomly selected to participate in an interview. Your child will receive a small gift (under $5) for participating. If you withdraw prior to the end of the study, you will receive no compensation. Your child will still receive the small gift.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

While there will probably be publications as a result of this study, neither your name, nor your child's name will be used. Only group characteristics will be published and all data will be completely destroyed after seven years.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about this research project you should contact the Principal Investigator Steve Quintana at 608-262-6987. You may also email or call the student researcher, Lana Mahgoub at lmahgoub@wisc.edu or 608-572-7385.

If you are not satisfied with the response of the research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on your child's grades in school.

Your signature indicates that you have read this consent form, had an opportunity to ask any questions about your participation and participation of your child in this research and voluntarily consent to participate. You will receive a copy of this form for your records.

I consent to participating and being audio recorded	**YES**	**NO**
I consent to my child participating	**YES**	**NO**
I consent to my child being audio recorded	**YES**	**NO**

Name of Child Participant (please print): _____

Name of Participant Guardian (please print):_____

_____   _____

Signature   Date

Phone Number: _____   Email: _____

Appendix D

Email to School Administrators

Dear......

I am a PhD student at the UW-Madison School Psychology program. I am writing to inform you about a research project that will be conducted with some of your school's students. The project involves learning more about the language and literacy outcomes of students in DLI classrooms and students in non-DLI classrooms.

Teachers have already been notified about the study and consent forms. I will be making a drop off with all of the forms to be distributed to teachers and their students on XXX (exact date to be filled in once we have the approval from MMSD).
We appreciate your cooperation with this project. Please let me know if you have any questions or concerns.

Thank you very much,

Lana Mahgoub
Language Acquisition and Bilingualism Lab
(608) 263-5764
UWbilingualismlab@waisman.wisc.edu

Appendix E

Cover Letter to Teachers

Dear.....

I am a PhD student at the UW-Madison School Psychology program. I am writing to inform you about a research opportunity that you can be a part of. I am interested in learning more about the literacy outcomes of students in the DLI classrooms compared to students enrolled in mainstream classrooms. In particular, I'm interested in how children in both types of classrooms develop their vocabulary knowledge, phonemic awareness, and reading fluency skills.

I would like to ask for your assistance with distributing the information about the study to your students. Consent forms with the description of the study will be placed in your mailbox for your students. I'd appreciate your assistance in distributing these materials to your students to take home to their families. Parents will be instructed to mail the materials back to our lab directly.

Please feel free to call or email if you have any questions. Thank you very much for your time and consideration.

Best,
Lana Mahgoub
Language Acquisition and Bilingualism Lab
(608) 263-5764
UWbilingualismlab@waisman.wisc.edu

Appendix F

Participant Assent Form

UNIVERSITY OF WISCONSIN-MADISON
Research Participant Information and Assent Script

Title of the Study: Language Acquisition in the Context of Dual-Immersion Classrooms

Principal Investigator: Steve Quintana (phone: 608-262-6987; email: stephen.quintana@wisc.edu)

Student Researcher: Lana Mahgoub (email: lmahgoub@wisc.edu)

_____

You are invited to be a part of a research study about how children learn to talk and to read. If you decide to be a part of our study, you will work with a researcher to do some language activities. The meeting will last about one hour.

If you agree to participate, the first thing I will do is record a short conversation that we have. Recording our conversation will help me learn more about how you use language. Then, you will do some language and reading activities. If you speak both English and Spanish, then you will be asked to do activities in both English and Spanish. The activities will take about 10 minutes each.

All of your information will be kept private with the researchers and we will remove all private information such as your name and birthday so that no one will be able to tell who you are.

You will receive a small gift, for participating in this study. We can stop at any time. If you choose to stop, you will still receive a small gift. You don't have to participate in this study unless you want to.

You may ask any questions about the research at any time.

Saying "yes" means that you have listened to this information, had an opportunity to ask me questions, agree to be recorded, and are choosing to participate. Being in this study is up to you, and no one will be upset if you don't agree to be a part of this study or if you change your mind later.

If you want to be in this study, say "Yes, I want to be in this study."

Signature of researcher gathering assent: _____

Date: _____

Appendix G

Parent Demographic Questionnaire

What is your gender:

What is your relationship to your child?
   A. Mother
   B. Father
   C. Step-mother
   D. Step-father
   E. Grandmother
   F. Grandfather
   G. Aunt
   H. Uncle
   I. Guardian
   J. Other_____

What is your child's gender:

Which race/ethnicity best describes you?
   A. African-American, Black
   B. Asian/Pacific Islander
   C. White Caucasian – Non Hispanic
   D. Hispanic or Latino (including Latino from the Caribbean)
   E. American Indian, Alaskan Native
   F. Middle Eastern
   G. More than one race. Please specify_____
   H. Unknown
   I. Other. Please specify_____
   J. Decline to answer

Which race/ethnicity best describes the child's other parent/guardian (if known):
   A. African-American, Black
   B. Asian/Pacific Islander
   C. White Caucasian – Non Hispanic
   D. Hispanic or Latino (including Latino from the Caribbean)
   E. American Indian, Alaskan Native
   F. Middle Eastern
   G. More than one race. Please specify_____
   H. Unknown
   I. Other. Please specify_____
   J. Decline to answer

Which race/ethnicity best describes your child?
   A. African-American, Black
   B. Asian/Pacific Islander

C. White Caucasian – Non Hispanic
D. Hispanic or Latino (including Latino from the Caribbean)
E. American Indian, Alaskan Native
F. Middle Eastern
G. More than one race. Please specify_____
H. Unknown
I. Other. Please specify_____
J. Decline to answer

Highest level of mother's education (if known)

A. No schooling completed
B. Nursery school to 8th grade
C. Some high school, no diploma
D. High school graduate, diploma or
   the equivalent (for example: GED)
E. Some college credit, no degree
F. Trade/technical/vocational training
G. Associate degree
H. Bachelor's degree
I. Master's degree
J. Professional degree (e.g., MD or JD)
K. Doctorate degree

Highest level of father's education (if known):

A. No schooling completed
B. Nursery school to 8th grade
C. Some high school, no diploma
D. High school graduate, diploma or
   the equivalent (for example: GED)
E. Some college credit, no degree
F. Trade/technical/vocational training
G. Associate degree
H. Bachelor's degree
I. Master's degree
L. Professional degree (e.g., MD or JD)
J. Doctorate degree

How would you classify your family's socioeconomic status?

A. Upper class
B. Upper-middle class
C. Middle class
D. Lower-middle class
E. Working class
F. Decline to answer

How many children do you have including the student we will work
   with?

A. 1
B. 2
C. 3
D. 4
E. 5
F. 6
G. 7
H. 8 or more

Has your child ever received any extra literacy services in school beyond what is offered in the general education curriculum? Please check all that apply.

A. No_____
B. Reading Mastery_____
C. Intensification of Core_____
D. Leveled Literacy_____
E. Six Minute Solution_____
F. Passport_____
G. Read 180_____
H. System 44_____
I. REWARDS_____
J. Reading Recovery_____
K. Other_____

Appendix H

Child Language Questions

Please describe your child's language exposure at home. What is the primary language that he/she speaks at home?

Is the child exposed to any other languages at home? Which ones?

On a scale of 1-10 with 1 representing "nearly none" and 10 representing "always", how much of the language(s) does the child hear?

Appendix I

LEAP-Q

http://www.bilingualism.northwestern.edu/leapq/

Language Experience and Proficiency Questionnaire (LEAP-Q)

Last Name		First Name		Today's Date	
Age		Date of Birth		Male ☐	Female ☐

(1) Please list all the languages you know **in order of dominance**:

1		2		3		4		5	

(2) Please list all the languages you know **in order of acquisition** (your native language first):

1		2		3		4		5	

(3) Please list what percentage of the time you are *currently* and *on average* exposed to each language.
(*Your percentages should add up to 100%*):

List language here:					
List percentage here:					

(4) When choosing to read a text available in all your languages, in what percentage of cases would you choose to read it in each of your languages? Assume that the original was written in another language, which is unknown to you.
(*Your percentages should add up to 100%*):

List language here					
List percentage here:					

(5) When choosing a language to speak with a person who is equally fluent in all your languages, what percentage of time would you choose to speak each language? Please report percent of total time.
(*Your percentages should add up to 100%*):

List language here					
List percentage here:					

(6) Please name the cultures with which you identify. On a scale from zero to ten, please rate the extent to which you identify with each culture. (Examples of possible cultures include US-American, Chinese, Jewish-Orthodox, etc):

List cultures here					
	(click here for scal	(click here for scal	(click here for scal	(click here for scal	(click here for scal

(7) How many years of formal education do you have? _____
Please check your highest education level (or the approximate US equivalent to a degree obtained in another country):

☐ Less than High School　　☐ Some College　　☐ Masters
☐ High School　　☐ College　　☐ Ph.D./M.D./J.D.
☐ Professional Training　　☐ Some Graduate School　　☐ Other: ▢

(8) Date of immigration to the USA, if applicable _____
If you have ever immigrated to another country, please provide name of country and date of immigration here.
_____

(9) Have you ever had a vision problem ▢, hearing impairment ▢, language disability ▢, or learning disability ▢ ? (Check all applicable). If yes, please explain (including any corrections):
_____

Language:

This is my Native language.

All questions below refer to your knowledge of   .

(1) Age when you…:

began acquiring :	*became fluent in :*	*began reading in :*	*became fluent reading in :*

(2) Please list the number of years and months you spent in each language environment:

	Years	Months
A country where is spoken		
A family where is spoken		
A school and/or working environment where is spoken		

(3) On a scale from zero to ten, please select your *level of **proficiency*** in speaking, understanding, and reading   from the scroll-down menus:

Speaking	(click here for scal	Understanding spoken language	(click here for scale)	Reading	(click here for scal

(4) On a scale from zero to ten, please select how much the following factors contributed to you learning   :

Interacting with friends	(click here for pull-down scal	Language tapes/self instruction	(click here for pull-down sca
Interacting with family	(click here for pull-down scal	Watching TV	(click here for pull-down sca
Reading	(click here for pull-down scal	Listening to the radio	(click here for pull-down sca

(5) Please rate to what extent you are currently exposed to   in the following contexts:

Interacting with friends	(click here for pull-down scal	Language tapes/self instruction	(click here for pull-down sca
Interacting with family	(click here for pull-down scal	Watching TV	(click here for pull-down sca
Reading	(click here for pull-down scal	Listening to the radio	(click here for pull-down sca

(6) In your perception, how much of a foreign accent do you have in   ?

(click here for pull-down scale)

(7) Please rate how frequently others identify you as a non-native speaker based on your accent in   :

(click here for pull-down scale)

Language: ▢

This is my **Second** language.

All questions below refer to your knowledge of   .

(1) Age when you...:

began acquiring	became fluent in	began reading in	became fluent reading in
:	:	:	:
▢	▢	▢	▢

(2) Please list the number of years and months you spent in each language environment:

	Years	Months
A country where is spoken	▢	▢
A family where is spoken	▢	▢
A school and/or working environment where is spoken	▢	▢

(3) On a scale from zero to ten please select your *level of __proficiency__* in speaking, understanding, and reading   from the scroll-down menus:

Speaking	(click here for scale)	Understanding spoken language	(click here for scale)	Reading	(click here for sca

(4) On a scale from zero to ten, please select how much the following factors contributed to you learning   :

Interacting with friends	(click here for pull-down scale	Language tapes/self instruction	(click here for pull-down sc
Interacting with family	(click here for pull-down scale	Watching TV	(click here for pull-down sc
Reading	(click here for pull-down scale	Listening to radio/music	(click here for pull-down sc

(5) Please rate to what extent you are currently exposed to   in the following contexts:

Interacting with friends	(click here for pull-down scale	Language tapes/self instruction	(click here for pull-down sc
Interacting with family	(click here for pull-down scale	Watching TV	(click here for pull-down sc
Reading	(click here for pull-down scale	Listening to radio/music	(click here for pull-down sc

(6) In your perception, how much of a foreign accent do you have in   ?

(click here for pull-down scale)

(7) Please rate how frequently others identify you as a non-native speaker based on your __accent__ in   :

(click here for pull-down scale)

Appendix J

DLI Parent Interview Questions

1. How did you hear about the DLI program?

2. Why did you choose to enroll your child in the DLI program? What do you find appealing about it? What, if any, reservations did you have about enrolling your child in the DLI program?

3. Part of the DLI program involves your child interacting with native Spanish/English speaking children—what are your thoughts or feelings about that component of the DLI program.? Do you see advantages with this? Any disadvantages?

4. Do you have concerns or questions about the program model generally?

5. How important is it for your child to be bilingual?

6. In the past, DLI programs have mostly enrolled middle to upper income students, what barriers do you think there might be for low income students to enroll in DLI programs? ...be a student in a DLI program?

7. What additional academic or social demands, if any, do you believe your child has in the DLI classrooms in comparison to if your child had been enrolled in mainstream English classrooms?

8. Along with the language instruction, DLI programs often include some cultural exposure, to what extent do you feel that your child's DLI program exposes them to new cultures? How do you feel about the cultural components of DLI programs?

9. In your opinion, do you believe your child's race, ethnicity, or culture influence his/her performance in class?

10. Do you have any concerns about the complexity of your child learning another language? Why or why not?

11. Do you feel your child's teacher creates a welcoming climate in your child's classroom? Why or why not?

12. If you have had the opportunity to visit your child's classroom, what has been your impression of the classroom?

- o …impression of the classroom social climate?
- o …impressions of the learning atmosphere of the classroom?

13. How satisfied are you with your decision to enroll your child in the DLI program? Why?

Appendix K

Supplementary Quotes Supporting Qualitative Findings

Additional Quotes for qualitative research theme #2 (pg. 84):

It seems that our younger son, the one in DLI has more friends cross-culturally than our oldest son [not in DLI]. Perhaps that's also something that I feel happy about with his DLI exposure. (P148)

Well, we both value diversity, quite a bit and we had a smart child and we wanted her to have the opportunity to learn another language, in particular Spanish, so that she could have a broader array of friends, and a broader opportunity in this life, you know, with people around her, and for job opportunities too. (P100)

A couple pieces. One of them was the diversity of these student population. That was important to us. And then just also knowing the positive benefits for the kids...as far as your brain development and learning more than one language, you know, being cognitively positive, that was another huge thing for us too. (P104)

Additional Quotes for qualitative research theme #5, sub-them #4 (pg. 108)

Teachers talk to her about Colombia and she thinks about the differences between Colombia and Nicaragua...she has a grasp of things being different from one country to the next. I think it's fantastic and it's very celebratory when we go to those kinds of functions. (P100)

Our daughter has one teacher that is from Puerto Rico and she does not speak English as well as one would think, so they've learned a lot about Puerto Rico because of their own teacher's experience. Our daughter's 1st grade teacher, she actually was Hispanic from L.A., so she brought some of that. I feel like whatever the teacher feels is important for culture to teach that, but I can't say I've seen any curriculum culture teaching.(P160)

pg. 109

There's a lot that they do about Martin Luther King and civil rights as well and that also starts in Kindergarten. I mean I think that kids know way more stuff than I do when I was that age... I'm sure they know more than I even have a clue about. It just hasn't come up. I'm sure because they're learning Spanish they probably get a majority of the cultural experience that happened to be related to Spanish. (P155)

They do 'read your heart out,' which I believe like focuses on African American families coming in and reading to the kids. I haven't heard about anything with African American history month in February. I feel like they tend to like color a picture of Martin Luther King or read a story. It doesn't tend to be a huge focus. There are no parades or those that photographers takes photos and other Madison schools and the kids from other schools and I'm like, this is big. Like the walls are covered with staff. It is a more notable thing than it is at [School1]. I'm not sure honestly what they do in

February in school. I can't say that they don't or I can't say they do. It is not something that has come home to us very much. (P132)

Additional Quotes for qualitative research theme #7 (pg. 112)

I feel like he's very comfortable in both Spanish and English. I do think the steps of the language in Spanish is not as deep as in English. I guess he doesn't get the extra reinforcement at home...I do think that he's quite fluent in Spanish, but there are vocabulary gaps here and there...there are certainly some places where I'm sure he's not as fluent as a first language learner. Although, he seems to be pretty comfortable at his grade level in general...I see in his Spanish language skills as well as the fact that his English understanding, reading, and writing is coming along beautifully. I don't have any regrets for investing in his education in that way. (P148)

She's reading alright, and she's reading in Spanish too...she's just applying the rules of literacy to a completely new language (Spanish) when she reads. I just was very impressed with that. (P100)

Additional Quotes for qualitative research theme #10 (pg. 120)

My daughter's teacher is like the most welcoming person I have ever met, so yes. Actually all the teachers— it's a very—I mean I don't have ton of experience in other schools, maybe it would be a similar thing in other schools, but I have just found both my kids' teachers to be so open hearted and welcoming and really committed and every time like every teacher we've had we've kind of stayed friends with, so I would say that, they feel very committed to all the kids and to really helping the kids who are struggling and to helping the kids who have I don't know, issues of all stripes, but also like creating a fun and interesting classroom... I'm super satisfied [about my decision to enroll my child in DLI] because I think that there a fewer ways to prepare kids for living in a global world than to know another language and to have relationship with people who are from a culture outside of our own. That's probably it in a nutshell. (P132)

I feel completely satisfied. It's been a learning experience. We didn't really know what to expect. It's hard to say whether its met expectations or not. I feel like it's been well resourced and that the school itself supports it, advocates for it. I haven't heard from or witnessed any teachers that seem to be struggling with "Ok, we have to do this but we don't know how." It seems that the implementation has been great. The teachers at that school whether they're ELI or DLI are super-invested in their jobs and in the kids. And all the teachers I've known, I feel amazed by their skill as well as their dedication so that's not specific to DLI I guess. (P148)

I just think that it's a really close community you know? For instance, we've improved our relationships with the teachers and the staff and, you know you walk in and you feel welcomed. It's just a little bit different feeling than, cuz my other daughter is not in a

DLI program, she's in a different school district, and maybe it's just district to district, but it doesn't feel that warm. So I don't know if, I know (School) is really small too, and that probably helps, but it's just a different feeling, you know it's a really good community school, in that they determine it a community school, it really is. (P104)

I would say that he really gets how it's a really cool thing that he's learning Spanish...My fifth grader going to be in middle school next year and they're just starting the process of having to pick a couple electives. There's some choice, not really a choice but there's some choices being offered in terms of school that you can open enroll to and he made a comment that, "Well, I was thinking of going to this school, mom." Which he really -- that wasn't going to be his choice but, "I was thinking of going to this school but I realized they don't have a DLI program there. I really want the DLI program. I really want that certificate [the bilingual seal], mom, that certificate you told me about." (P155)

I'm very satisfied because it's given my daughter an opportunity to learn a different language and that's going to help her skills when she gets older, and it's also going to help her skills now. And I feel like it can only get better. (P164)