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What Effect Does A Spanish Vocabulary-Through-Music Instructional Intervention Have On The Development Of Early Literacy Skills Of Preschool Students In A Bilingual Setting?

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WHAT EFFECT DOES A SPANISH VOCABULARY-THROUGH-MUSIC INSTRUCTIONAL INTERVENTION HAVE ON THE DEVELOPMENT OF EARLY LITERACY SKILLS OF PRESCHOOL STUDENTS IN A BILINGUAL SETTING?

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To the amazing teachers in my life, those who have taught in classrooms and those for whom the world is a classroom. Thank you for inspiring me to choose this career. To the women in my life who have believed in me, lifted me up, and paved the way. Onward!

TABLE OF CONTENTS

CHAPTER ONE

Introduction

Music and language development

Music is a promising instructional tool to promote the development of early literacy skills in preschool children. For children who are learning a second language, music may be an even more powerful tool; Legg studied the impact of a song-based intervention on adolescent students in a foreign language classroom and found it to be more effective than non-musical methods for the memorization of vocabulary (2009). Similarly, a study in Spain of preschool-aged children learning English as a foreign language supported the idea that teaching language through song promotes receptive vocabulary knowledge (Coyle & Gomez Gracia, 2014). However, little to no data exists on the effect of song-based language instruction in dual immersion classrooms at the preschool level. I propose to study the effectiveness of Spanish song to teach Spanish vocabulary and literacy skills, and how this instructional method impacts the assessment scores of Spanish and English speaking preschool students who are developing literacy in both languages. My research question is: What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?

Journey toward the research question

In this chapter, I will describe my personal, professional, and academic journey along which I came to be invested in this topic, as well as the guiding factors which helped me form my specific research question. I will explore how this study may be significant for

different stakeholders, including students, parents, teachers, and policy makers, and I will also review current educational challenges such as effectively teaching diverse, multilingual learners and finding strategies to close the achievement gap as part of the rationale and context for this research.

When I was a child, I was part of a group of students who received Spanish instruction starting in kindergarten, while other students in my district started studying a foreign language in 7th grade. Even though much of the early years of Spanish instruction that I received was based on rote memorization, I still feel it gave me a jumpstart on others who started studying the language later. Perhaps the most impacted part of my Spanish language acquisition was related to my pronunciation; hearing and practicing Spanish as a five-year-old, when I was still learning to pronounce words in my native tongue, English, allowed me to develop more accurate pronunciation in Spanish with less of an accent. People who learn second languages as teens or adults often struggle to achieve accurate pronunciation; the younger the language learner, the more accurate their pronunciation (Piske, MacKay, & Flege, 2001).

I enjoyed learning Spanish on a more rigorous level in high school and was inspired to become a teacher myself, having had a positive school experience. It's hard for me to explain why Spanish became so important to me so early on, but I do remember feeling as though I had discovered a new power once I was able to communicate complex ideas in the language, and once I stopped translating everything I heard in Spanish into English in order to understand it. I even caught myself thinking in Spanish at times, and when this happened, felt both surprised and a little bit proud. A new world opened up to me, and it

included people, experiences, literature, and music which were all new to me, all undiscovered. I thought about becoming a Spanish teacher and explored this idea as an undergraduate student at the University of Iowa beginning in 2005. In college, I became fascinated by the literary genre of magical realism, the post-Franco youth culture in Spain, and sociolinguistics. While studying abroad in Buenos Aires in 2009, I focused on Argentinean literature, and started thinking about what I would do after graduation. A logical and practical career path seemed to point to teaching. I had had wonderful teachers of Spanish, kindergarten through twelfth grade, and amazing professors of Spanish in my undergraduate studies. I wanted to be able to open doors for others, as my teachers had done for me, but I didn't know where to start. Little did I know that someone in my own family would lead me into a career I would have never imagined myself.

Meanwhile, my 4-year-old cousin was enrolled at a Spanish-English dual immersion preschool at this time, and my uncle noticed that an AmeriCorps*VISTA position in curriculum development and volunteer management had been posted at the school. Knowing I was interested in Spanish and education, he encouraged me to apply. For two years, I served in the AmeriCorps volunteer position, then I applied for and was offered a position as a lead teacher at the preschool. I was proficient in Spanish, however, I taught as the English lead on a three person teaching team with two native Spanish-speaking teachers. The dual immersion model of this school promoted enrollment of equal (or nearly equal) numbers of Spanish-speaking and English-speaking students, and provided a balanced delivery of instruction in both languages from native-speaking

teachers. During these years at the preschool, I decided to start my teaching licensure process and enrolled in the Master of Arts in Teaching program at Hamline University.

After four years at the dual immersion preschool, I applied for a Bilingual Music Specialist position at a charter school in Minneapolis, where a majority of the students were Latino and spoke Spanish in their homes. In my second year at the charter school, I altered my curriculum slightly to focus more on the development of the Spanish language through music, rather than teaching music as a subject through bilingual instruction as I did in my first year. I loved singing the goofy songs with students and having them help me develop actions and gestures to help us remember the lyrics and vocabulary. It felt natural to me to build lessons around these songs, similarly to how a language arts teacher may build lessons around a book or story. I found myself dissecting each song to maximize the type of learning that could happen based on that song. For example, one song that focused on colors also contained a lot of animal vocabulary, and another that helped teach clothing vocabulary also included some sequential vocabulary (such as first, second, later, last, etc.).

In addition to my role as a Spanish/Music specialist, I was also a kindergarten partner teacher and used the a phonics-based curriculum to teach literacy skills. Most of my students were more proficient in Spanish than they were in English, and I noticed that many of them who were thriving in Spanish class were struggling with English phonics. Sometimes I would give instructions in Spanish, such as “Remember, in English, this letter makes the sound ___.” Sometimes, this type of explanation, provided in Spanish about an English literacy concept, helped the students connect the dots more quickly. Sometimes they remained confused. There were two other literacy teachers who worked with the other

kindergarten classes, but they did not use this strategy of providing conceptual information in Spanish, so school-wide, our delivery of literacy instruction was somewhat inconsistent. As I continued to observe learning and development happening both in Spanish class and in the English phonics reading sessions, I became more and more convinced that if children were being supported more in their native languages to develop vocabulary, letter sounds, and other early literacy skills, that they would more easily be able to learn to read in their second language, English.

After teaching for two years at the charter school, I found my way back to the dual immersion preschool, this time as the program manager, supervising the teaching staff of about 12 teachers (five lead teachers, six assistant teachers, and one literacy coach). Now with a new perspective as supervisor, I quickly learned that our Spanish-speaking teachers felt that they lacked adequate resources (i.e. high quality books, published curricular resources, etc.) to be able to teach Spanish language and literacy skills with the same degree of intentionality that the English-speaking teachers found themselves equipped to do. I found myself reflecting on my career, beginning as a curriculum developer, transitioning to preschool teacher, then kindergarten teacher, and now as a teacher supervisor. As a curriculum developer, I spent my time formalizing and documenting the lessons that teachers had written to support Spanish and English language learning. As a preschool teacher, I put those lessons into practice, and worked to refine them to fit the needs of my students. My first experience using outside, published curricula was as a kindergarten teacher at the charter school; in my particular position, I had the ability to compare English and Spanish literacy development among the students, where English

instruction was direct, phonics and skills-based, and Spanish instruction was more contextualized (learning through song, play, etc.) As a supervisor of preschool teachers, I listened to feedback about the lack of access to high quality curricular support materials, which confirmed the importance of not only adoption or development of high quality curriculum, but careful implementation of that curriculum supported through consistency across teaching teams and coaching, as well as adaptation of the curriculum to the specific needs of the population, based on age, language background, etc. I wanted to help the preschool teachers figure out, and I wanted to know myself, what really worked to help Spanish and English-speaking students develop Spanish language and literacy skills? We explored different resources, attended trainings, adopted new Spanish assessment tools, and continued to refine our practices in order to specifically support Spanish language and literacy learning, as that type of learning seemed to happen more easily in English (and was perhaps supported more intentionally through curricular support materials which were more widely accessible to the teachers). From time to time, I would pop into a preschool class, share a Spanish song with them, including picture cards and props, and remembered my days as a language teacher at the charter school, where I used a song-based curriculum.

During the spring semester of 2016, I completed my student teaching requirement, including 12 weeks teaching high school Spanish in a north metro suburb, and three weeks teaching in a fifth grade dual immersion classroom in a south metro suburb. It was quite a transition for me to start teaching older students. At first, I thought the playfulness that I had so enjoyed in early elementary was gone. Then I found other ways to make my lessons fun and engaging, often by using celebrity musicians as examples for our study of subject-verb

conjugation, or by having students listen to a Spanish-language music video and demonstrate listening comprehension by completing a fill-in-the-blank lyric worksheet. In my fifth grade dual immersion placement, I learned that certain subjects were taught in Spanish (math), others in English (science), and that some subjects rotated between both languages (communication arts). There was a music specialist who didn't use Spanish in her instruction at the school, which I thought was a missed opportunity. Again, I found myself remembering the songs I used to sing to my kindergartners when I taught at the charter school, becoming more and more convinced that the song-based instructional style was truly helpful to their vocabulary acquisition and retention.

After just three short weeks in the fifth grade classroom, I returned to my role as program manager at the dual immersion preschool. Here, I have been able to learn from Reading Corps tutors and coaches who provide support, training, and evaluation to preschools on instructional strategies for the development and assessment of early literacy skills. Reading Corps has brought more intentionality to our teaching and assessing of literacy skills at the preschool and has introduced several teaching strategies, including songs and chants to practice concepts such as letter names, letter sounds, rhyming, and alliteration.

The journey to my research question, regarding the effect a Spanish vocabulary-through-music instructional intervention has on the development of early literacy skills of preschool students in a bilingual setting, started when I was having a conversation with my husband, whose native language is Spanish. A friend of ours had asked us what language we speak when we are at home. The answer is complicated; we

often switch back and forth between Spanish and English, sometimes even mid-sentence. In certain situations, we find ourselves using exclusively Spanish, such as during phone calls with each other, when grocery shopping, or when out in public. Other times we find ourselves using English for a certain topic because the conversation feels more comfortable in that language, such as when talking about the appliances in our home and the tools we need to fix them. I realized that I use both languages at home, had focused equally on both languages in my studies (I double-majored in Spanish and English), and at work in the dual immersion preschool serving Spanish- and English-speaking families and with Spanish- and English-speaking staff members. Originally, I was interested in figuring out why sometimes a native English speaker like me will unconsciously insert a Spanish word into an English sentence while speaking or writing, sometimes not noticing until the person I am speaking to points it out. I am very interested in contexts where all speakers are bilingual, and where both languages are used without an established structure. The more I thought about the code-switching phenomenon, however, the more I realized that it may be more of a research question for a linguist rather than an educator, so I started thinking about the preschoolers in the school where I work.

Most of the preschoolers display stronger proficiency in either Spanish or English and are beginning to develop their skills in the other language, depending on the language spoken at home. They are in the earliest stages of developing language and literacy and becoming part of the bilingual context which so interests me. I wondered if my own bilingualism and that of the adults in my life (my coworkers, the parents of students at my school, and my husband, for example), had anything to do with our first language and

literacy acquisition from an early age. I had heard about transfer of skills in bilingual learners (Royer & Carlo, 1991) and had developed a question: if children could learn to read in their first language, would learning to read in their second language come more easily?

Several studies support educating in the native language before and during the acquisition of the second language. Ball argues that literacy and fluency in the native language are critical building blocks in second language learning, and argues that formal instruction in the native language allows students to learn second languages more quickly (2011). In a study of undergraduate students, Halasa and Al-Manaseer advocate a method which incorporates the use of the first language in second language learning situations, arguing that the first language must play an active role in class to assist with second language cognition (2012). Brooks and Donato also recognize that the use of the first language is a normal part of the process in second language learning and actually facilitates the production of the second language (1994).

I also knew of the importance of vocabulary in children's literacy development (Christ & Wang, 2010), and started putting the ideas of vocabulary acquisition, dual language learning, and literacy development together. So my research focus shifted to the four-year-old preschoolers whose laughter and art projects filled our little school with joy and hope every day. I thought back to the feedback the teachers that I supervise had given me about the (seeming) lack of quality curricular resources to teach Spanish to preschoolers, as well as the role that early literacy plays in kindergarten readiness and success in school (Denti & Guerin, 1999). I remembered my days as a Bilingual Music

Specialist, then a Spanish teacher using music as an instructional strategy, and I decided to explore this cross-section of ideas.

Stakeholders in this research

Students are the most important stakeholders in educational research, and their best interests should be held at the center of each step of the research process. Even very young students ask their teachers why they have to do certain activities at school. Older students may get more skeptical or critical of certain learning tasks, asking, “When will I ever use this in real life?” I think teachers should be prepared to answer those types of questions, in fact, teachers should ask themselves “Why am I teaching this content? Why am I using these strategies?” and the answer should never be, “Because that’s the way it has always been done.” Sometimes the answer to the “Why are we doing this?” question is as simple as, “We need to learn how to do this first, so that we can do this more complicated task next.” And sometimes, the answer may be more philosophical, challenging students to find value in exploring new ideas, in conducting experiments, and in constructing their own understanding and knowledge surrounding a task or series of tasks. My own kindergarten and first grade students sometimes asked me why I introduced new vocabulary words by using picture cards before teaching them a new song using this same vocabulary. I told them that I wanted them to be listening for the keywords and visualizing the pictures they had just seen when they first heard the song so that they could better understand the lyrics and the “story” of the song. Music used as a first and second language teaching strategy accomplishes two important goals. First, it acts as a powerful device to remember and recall vocabulary through song (Li & Brand, 2009; Ludke et al., 2014), and secondly, it provides

an additional context through which to acquire vocabulary, inviting creative movement, dramatic play and use of props, and a narrative opportunity in which the child, by singing, actively takes part in the telling of the story. So when a student asks me, “Why do we have to sing this song?” I would tell the child that we learn through song because the story in the song and its melody help us remember the words better so that we can use them in different situations.

Families are also stakeholders in this study, as they advocate for what they believe is best for their children. In some districts, funding for arts education and “specialist” classes is being cut, and not all families are in agreement with this as they want their children to receive a well-rounded education. One way to creatively tackle this issue is to integrate the arts into the “core” content classes, or combine two specialist classes into one. For example, combining foreign language with music is one possibility which would achieve the preservation of two specialist content areas when facing budget cuts. Additionally, parents who are speakers of the target language may be able to support learning in the classroom and at home by sharing their own experiences and may help shape the curriculum, advocating for a teaching and learning experience that is reflective and representative of the children in the classroom. For these reasons, parents should be invested in a study such as this one which looks at the impact of a specific teaching strategy on language acquisition and early literacy skills.

Teachers are an additional group of stakeholders in this study. Just as there is evidence showing that literacy skills transfer from the first language to the second, this study presents an opportunity for duplication to find out whether or not an instructional

strategy (teaching content through music) is transferable to other content areas. For example, a math teacher may be interested to know whether or not it is more effective to teach multiplication tables and formulas through song, or a teacher of English language learners may benefit from a similar study on the effects of using song to teach English vocabulary. As teachers continue to feel pressure to raise test scores, close the achievement gap, and demonstrate progress in their individual teaching performance due to performance-based pay, as well as holding the best interests of children at the center of everything they do, they need to know what the most effective strategies are. Therefore, if teachers are using song and music in their lessons, they need to know whether or not it is truly effective. And if they are not using music, but learn that it is effective, then they may choose to incorporate it into their teaching.

Policy makers influencing many different areas of education may also be interested in the results of this study. For example, those working to expand access to pre-k programming, including advocates for universal preschool and advocates for early learning scholarships, may be interested in learning about the effectiveness of a strategy to teach early literacy skills, which help to determine kindergarten readiness. Other policymakers invested in the fair and accurate assessment of bilingual and multilingual students may also be interested in how using one teaching strategy in a mixed-language group of students may impact the assessment of those children. Furthermore, policymakers working specifically on literacy, including the potential links between literacy and health/wellbeing, as well as those who view literacy as one of the building blocks for long term life success are likely interested in knowing which strategies teachers should or should not be using in

order to have the greatest impact on a child's developing literacy; therefore legislators who work to create policies determining classroom reading instruction may also be interested in the results of this study. Lastly, policymakers who believe in the potential economic impact or return on investment that early childhood education has on society could also be invested in the results of a study like this one which analyzes a specific teaching strategy and its impact on the development of literacy skills.

Significance of this research project for the teaching profession

I want to study the effect a Spanish vocabulary-through-music instructional intervention has on the development of early literacy skills of preschool students in a bilingual setting. Specifically, I want to work with an experimental group and a control group of preschool students who are enrolled in a dual immersion program, where a significant percentage of the students are native Spanish speakers, a significant percentage are native English speakers, and some students are bilingual. Additionally, the students receive instruction in both English and Spanish from their bilingual teachers. All students are developing literacy skills in Spanish and English, which means they are developing literacy skills in their first language and their second language. Currently, the students do have exposure to different songs, and in some specific situations music is used intentionally as a tool to help students understand literacy concepts. The purpose of this study is to boost up the presence of music in the literacy curriculum, and measure whether or not and/or how Spanish instruction through music has an effect on the acquisition of vocabulary in first and second language learners, and in turn how this acquisition of vocabulary impacts the students' developing literacy skills.

Whether or not a teacher chooses to teach in a bilingual school, it is likely that the teacher will encounter a population of students with different language backgrounds. For teachers whose content area is world language, it is important to consider that some students enrolled in the class may actually already have a relationship with the target language, speaking it at home with their families or having been exposed to it as a heritage speaker. Teachers of language arts courses, early childhood and elementary teachers, and those teaching English as a second language are interested in the development of language and literacy skills in students, and need to know what works. This study offers many opportunities for duplication or variation in a variety of specific teaching settings to measure the effect that instruction through music has on learning language, literacy, and other skills. Furthermore, we are still working to close the vocabulary gap, which in turn affects the achievement gap, and other issues later in life, as evidenced by initiatives such as Minneapolis's Talking is Teaching campaign. Mayor Hodges of Minneapolis said, regarding the campaign, "We have to go upstream to make sure we are solving problems before they start so that downstream we have fewer problems," (Golden, 2016). Early childhood may be the most effective and advantageous time to intervene and catch students up to their peers before they fall even further behind during the grade school years when the student-teacher ratio can doubles from about ten-to-one in preschool to more than twenty-to-one in kindergarten.

Having personally used music as a teaching tool, I am curious to know more about its effectiveness in other settings. I hope to analyze the effectiveness of music and song as a language and literacy teaching strategy. Is the use of Spanish song effective for Spanish

speakers learning English? For English speakers learning Spanish? For both groups? Are their literacy outcomes in both languages affected, or in just one of the languages? Is there evidence of a transfer of skill from one language to the other? If literacy skills are impacted by this strategy, how? Through increased vocabulary acquisition? Improved phonological awareness (i.e. rhyming, alliteration, and letter sounds)? Assuming that literacy skills are one factor in determining a child's readiness for kindergarten, how does the intentional integration of Spanish music affect overall kindergarten readiness?

In this chapter, I proposed a study based on the research question: What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting? My academic, professional, and personal experiences have led me to this topic, including my own experience as a learner of Spanish, developing curriculum and teaching preschool, teaching kindergarten and first grade using music as an integral part of my curriculum, and supervising the teaching staff at a bilingual preschool. I outlined the significance this study may have for students, parents, teachers, and policy makers, with the central theme of finding strategies that work. Finally, I explained the context and rationale for the project, describing the setting where the study is to take place as well as the underlying challenges in our education system, namely the challenge of closing the vocabulary and achievement gaps and educating a diverse, multilingual classroom of students.

In chapter two, I will explore research studies on the vocabulary gap and the impact of vocabulary on literacy and school achievement, dual immersion classrooms and how first and second languages and literacy are developed there, how, in general, early literacy

skills are learned, and the impact of music on vocabulary acquisition and other language and literacy skills. The relationship between vocabulary acquisition and reading skills will be described, and effective instructional techniques for teaching vocabulary will be discussed. Vocabulary acquisition will be the central focus as a predictor of literacy ability, which is why effective strategies for teaching vocabulary will be analyzed.

CHAPTER TWO

Literature Review

Introduction

The achievement gap has been traditionally conceptualized as the difference in academic performance between white students and students of color, however, there are also important within-group differences which complicate the definition of the achievement gap (Carpenter, Ramirez, & Severn, 2006). The achievement gap has many possible contributing factors, one of which is the level of literacy preparedness, or level of pre-literacy skills, of incoming kindergartners. One factor in children's literacy is their personal vocabulary or knowledge of meaning of words. A young pre-reader's knowledge of word meaning will impact that child's progression toward reading and future academic learning (Christ & Wang, 2010). Furthermore, vocabulary acquisition, and educational equity when considering the achievement gap, can be boosted through an intentional incorporation of a variety of instructional strategies where children are seeing, hearing, and using the vocabulary words in different contexts such as song, story, and dramatic play (Christ & Wang, 2010). Literacy development and school readiness are further complicated when considering children who are fully bilingual and those who are influenced by a heritage language. This chapter will compile research on the vocabulary gap and the impact of preschool on children's learning, the unique teaching and learning circumstances in bilingual and dual immersion settings, the development of early literacy skills, and specifically, the impact of music or song-based instructional strategies on children's

vocabulary acquisition in their first and second languages in order to answer the question: What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?

This chapter provides a summary of research that has been done on the vocabulary gap and its impact on literacy and school achievement, dual immersion educational settings and implications for first and second language and literacy development, the general development of early literacy skills, and the impact of music as an instructional resource in the acquisition of vocabulary and other language and literacy skills. Links between vocabulary acquisition and reading skills are highlighted in many studies, and effective instructional techniques for the teaching of vocabulary are discussed. Throughout, vocabulary acquisition is a central focus as a predictor of literacy ability, therefore the most effective strategies for teaching vocabulary are analyzed.

The Vocabulary Gap

When children start preschool around age three, some know thousands of words, and others, especially those who come from low income families, know only hundreds of words, and as children move through elementary school, this vocabulary gap widens to approximately 4,000 words (Christ & Wang, 2010). Children from disadvantaged homes are exposed to only 25% of the vocabulary that their more advantaged peers hear, which has negative consequences for their language and literacy acquisition (Harris, Michnick Golinkoff, & Hirsh-Pasek, 2011). Furey reports that low-income children, ages 16 and 18 months, produced 83 and 115 unique words, respectively, while middle-income children of the same ages produced 115 and 179 unique words (2011). O'Brien, Paratore, Leighton,

Cassano, Krol-Sinclair, and Green similarly reported that children living in poverty and those learning English as a second language demonstrate significant gaps in their vocabulary in early childhood (2014). The problem with knowing fewer words is that it can affect reading and reading comprehension (Christ & Wang, 2010). A well-developed lexicon is an essential component for academic growth and successful communication skills (Schwartz, 2014), and early development of vocabulary and syntax is crucial for success in literacy development and school (Harris et al., 2011). Learning to read is a complex process; the child must recognize individual letters, know which sounds are associated with them (as well as the variations of sounds that letters such as “c” make), and must know how to connect the syllables to pronounce the entire word. This process of decoding is difficult and can be frustrating for students, especially for those who don’t necessarily respond well to step-by-step sequential and analytic learning, and for those who have auditory difficulties distinguishing between different sounds (Carbo, 1996). If the child is trying to read the word “pumpkin,” but has never learned the word pumpkin, the child may have difficulty not only pronouncing the word, but may also have difficulty connecting the word within the context of the story. A different child, who has previously learned the word “pumpkin” through activities such as walking through a pumpkin patch, carving a pumpkin for Halloween, and eating pumpkin pie, with the same phonetic preparation as the first child, may be able to read the word “pumpkin” for the first time with more fluency and higher comprehension for the pumpkin’s role in the story. There are entire instructional methods based on building vocabulary through experiential learning, such as the Language Experience Approach, as described by Jiuhan in a study about authentic experiences and

literacy skills (2013). The core of the Language Experience Approach involves building upon vocabulary gained by students during experiences such as field trips, films, interactive activities and cross-cultural experiences (Jiuhan 2013). Knowledge at the word level is likely the most important factor in the ability to read (Carter & McCarthy, 2013). In fact, building stronger connections between words such as “pumpkin,” “patch,” “pie,” and “carve,” or in other words, deepening the context of the vocabulary, supports even more vocabulary growth and better reading comprehension (Schwartz, 2014).

As discussed, the number of words in a child’s vocabulary may impact the ability to learn to read. Furthermore, an older child’s vocabulary may also impact the ability to read to learn. In fact, an older child’s ability to engage in higher order thinking skills such as inferencing while reading depends largely on vocabulary knowledge (Prior et al., 2014). A young child learning to read may be able to understand the sounds of every letter and may be able to sound out words accurately, but the comprehension of what is being read depends on that child’s pre-existing knowledge of vocabulary and ability to extract the meaning of unfamiliar words from contextual clues. So, in a paragraph of 50 words, an elementary student who knows 45 of the words will likely be able to understand the main idea of the paragraph, and may even be able to deduce the meaning of the remaining five words from the context. On the contrary, an elementary student who knows only 30 of the 50 words would likely have a much more difficult time understanding the paragraph as a whole, even if the child’s pronunciation and phonetic reading is accurate. The child’s vocabulary knowledge, then, when built up through keyword pre-teaching strategies before engaging in the act of reading, results in higher reading fluency and comprehension (Burns,

Dean, & Foley, 2004). The act of reading alone cannot increase a child's vocabulary; in fact children will tend to choose books for pleasurable reading that are at or below their reading level, where 0-1% of words are unknown, adding no new words to their vocabulary (Carver, 1994). Therefore, increasing a child's vocabulary is dependent upon non-reading activities such as oral storytelling, conversations, singing, pretend play, and narration of activities and objects.

The vocabulary gap issue increases in complexity when considering children whose home language is not English. Children whose parents speak Spanish at home, but who attend a school where English is the language of literacy instruction may demonstrate a lower English vocabulary and therefore may experience delays in learning to read. Goodrich, Lonigan and Farver argue that Spanish-speaking Latino children are at higher risk for developing literacy problems (2013). Furthermore, when Latino children perform poorly on reading assessments as compared to their Anglo peers, the gap in their performance can be attributed to insufficient vocabulary knowledge (Carlo, et al., 2008), and the vocabulary input at home for the first language, when not further developed in an educational setting, results in shallow vocabulary development (Schwartz, 2014). On the other hand, children whose school experiences have led them to develop a strong vocabulary base in their native language (i.e. Spanish-speaking students attending a bilingual program which first focuses on Spanish then later phases in English) do not demonstrate any delays in acquiring the second language as compared with same-language peers who attend a monolingual school (Schwartz, 2014). Specifically, Spanish-speaking students who know Spanish letter names and letter sounds demonstrate similar knowledge

in English (Cardenas-Hagan, Carlson, & Pollard-Durodola, 2007). Children who come from low income backgrounds are typically exposed only to a limited vocabulary set (Christ & Wang, 2010) and when these low-income children are also Spanish-speaking, they are faced with a double disadvantage (Goodrich, Lonigan, & Farver, 2013). Without the proper supports or strategies in place, the child will enter preschool at a significant disadvantage, and will continue to experience delays if the first language is not supported at home and at school.

The vocabulary gap issue becomes more complex as different models of education are considered along with family language background. Some families choose to enroll their children in single language immersion, two-way dual language immersion, or transitional or maintenance bilingual preschools or kindergartens. In a single immersion classroom, students learn solely in their second language, whereas a two-way immersion approach puts language-minority students and language-majority students together with the goal of learning and promoting both languages for both groups (Umansky & Reardon 2014, Cervantes-Soon 2014). A transitional bilingual model's goal is to use the home language to support comprehension and production in the majority language, while the goal of a maintenance bilingual program is full bilingualism in both languages (Umansky & Reardon 2014). Consider a Spanish-English dual language preschool where about half of the students are native Spanish-speakers and the other half are native English-speakers. Some of the children in each language group come from low income households. In fact, most of the students who speak Spanish come from low-income households. Teachers are tasked with helping children develop their language and literacy skills in both languages

and parents have differing expectations regarding bilingualism and pre-reading skills. Spanish-speaking students will likely demonstrate vocabulary deficits in English, and may also demonstrate limited vocabulary in their native languages due to the economic and educational circumstances of their families, and while they may gain conversational skills in their second language, they will continue to lag behind in literacy (Carlo, et al., 2008). The low-income, Spanish-speaking children begin with a vocabulary disadvantage, which, unless resolved during the preschool years, may result in years of low academic achievement.

Knowing fewer vocabulary words has a negative impact on literacy and long term school success. Often, the children who know less vocabulary come from low-income circumstances. The problem is complicated when considering dual-immersion settings where children from two language groups come together to learn as this type of setting likely contains students who are both low-income and who are learning English as a second language. While there are different perspectives on the best strategies for improving literacy learning in children's first and second languages, the prioritization of the acquisition of vocabulary is widely seen as one of the most important factors. The research reviewed here did not necessarily prove, however, that a stronger vocabulary base in the first language will result in improved literacy in first and second languages.

In the next section, dual-immersion educational settings will be reviewed in terms of their impact on the acquisition of first and second languages and the development of literacy skills in both languages. Language and literacy learning among first and second language learners in dual immersion settings is discussed. The value placed on preserving

and continuing to develop language and literacy skills in native languages of language minority students is questioned, and the benefits of bilingualism are presented.

Two-Way Dual Immersion Educational Settings

A two-way dual immersion classroom is an educational setting where students from different language backgrounds receive literacy and other academic instruction while immersed in a target language (for example, Spanish) for some portions of the day, and in the dominant societal language (English) for other portions of the day; instruction in the target language is provided for at least 50% of the day (Center for Applied Linguistics, n.d.). The goal is for students to gain proficiency in both their first language (L1) and their second language (L2); in a two-way dual immersion program, for some students the target language is their L1, and for others, the dominant language is their L1. Students who are educated in dual immersion settings achieve higher academic levels and become more proficient linguistically (Potowski, 2004). Dual immersion classrooms without language balance among enrolled students are not considered two-way immersion (Center for Applied Linguistics, n.d.).

There are different models of bilingual education, including a 50-50 model and a 90-10 model; where the 50-50 model divides instructional time in each language evenly, the 90-10 model includes instruction in the target language for 90% of the time, and in the dominant language for 10% of instructional time (Gomez, Freeman, & Freeman, 2005).

Studies have shown different results regarding whether literacy skills transfer from first to second languages and vice versa. In a study comparing two-way immersion and

monolingual English immersion programs, Barnett, Yarosz, Thomas, Jung, and Blanco did not find any significant evidence of literacy skill transfer from Spanish to English (2007).

Goodrich, Lonigan and Farver produced more nuanced results in their study of literacy skill transfer in preschool students (2013). In their study, print knowledge was specifically demonstrated as transferable across languages, showing "a limited role of transfer in the development of emergent literacy skills" (Goodrich, Lonigan, & Farver, 2013). Goodrich, et. al discussed the multitude of variables that could impact the development of literacy in both the L1 and the L2, such as length and quality of exposure to the language(s) either through residency in a country or participation in a classroom (2013).

In an older study, Cummins proposed that for language-minority children, the development of language and literacy skills in the second language depends upon the children's proficiency in those skills in their first language at the time of exposure to the L2 (Cummins, 1979).

The plethora of factors influencing language and literacy development make it challenging to state with complete confidence that literacy skills definitively transfer from L2 to L1 or vice versa. Regardless, there remains a question about the value of developing literacy in L1 when L1 is a minority language, even if these L1 literacy skills do not necessarily contribute to higher literacy proficiency in the L2. According to Gonzalez's ethnic educator approach, teachers must "incorporate socio-constructivist theoretical perspectives and pluralistic and progressive social justice ideologies that respect, value, and celebrate the cultural-linguistic diversity of bilingual/multilingual students" (2012). What

studies on cross-linguistic transfer have shown consistently is that knowledge and skill in the L1 does not negatively impact the development of language and literacy in the L2, and there is widespread agreement regarding the multiple benefits of bilingualism and dual immersion education such as achieving higher academic standards (Potowski, 2004), postponing the onset of dementia in later years (Bilingualism, 2011), and supporting long term learning and development (Barnett et al., 2007). Considering the social justice-oriented approach Gonzalez describes as well as the benefits of bilingualism, perhaps the focus of future research should be less focused on whether or not L1 skills support the development of L2 skills, and more focused on whether or not L1 skills for language minority students should be taught based on their inherent value.

There are unique challenges and benefits of learning two languages and developing literacy in two languages. While comparing two-way immersion and English-language immersion programs for English-language learners (ELLs), Barnett et al. suggested that two-way immersion had the potential to ameliorate the lack of progress in native languages for the ELL population as well as the lack of progress in native English speakers' acquisition of a second language, and that higher achievement in L1 and L2 skills could contribute to educational progress in other areas (2007).

In addition to benefiting brain function, there are social and cultural justifications for protecting and promoting the maintenance and development of language minority students' L1. In a study on assessment practices for bilingual and multilingual students, Gonzalez argued that critical factors related to cognitive function such as self-concept, self-esteem, cultural identity and learning style are inseparable from students' L1, and that therefore,

students' L1 should be used or at least considered when designing and administering assessments (2012). Given the growth of the language minority student population in the United States, Gonzalez argued that teacher training programs should promote a shift in mindset, away from an assimilation model and toward a pluralistic model, placing value on diverse identities (2012). This pluralistic model seems to align well with two-way dual immersion models in which students from two language backgrounds receive instruction in equal parts target language and dominant language.

Two-way dual immersion programs may benefit students academically, and also may provide a more equitable socio-cultural experience for students. One reason for this is that students who represent the language minority or target language in dual immersion settings often come from low income backgrounds. As previously discussed, children from low income backgrounds show smaller gains in vocabulary, which has a negative impact on developing literacy skills (Christ & Wang, 2010). However, preservation of minority languages is valued by parents and families who want their children to be able to communicate with older, monolingual generations, and is important for keeping cultures alive (Farruggio, 2010). While limited, if cross-linguistic transfer exists on any level, and if society is shifting to value minority languages and cultural traditions for their inherent worth, then more emphasis should be placed on helping language minority students develop vocabulary and literacy skills in their L1 which can be achieved via two-way dual immersion programs.

While language minority students often come from low-income backgrounds, English speakers in these dual immersion settings often come from higher income

households, and, according to Christ and Wang, likely have acquired more vocabulary words and therefore may have an easier time developing literacy skills (2010). L1 literacy skills for English speakers may transfer in a limited way to their L2 (Goodrich, Lonigan, & Farver, 2013), but if the L2 is not valued or if exposure to the L2 is not significant enough, English speakers may show resistance or difficulty making language and literacy gains in the L2. Therefore, two-way dual immersion settings are important for supporting both language minority students in their first language and literacy acquisition, and for supporting English speakers learning an L2 in an environment where the language is valued and where exposure is robust. Furthermore, literacy proficiency in the L1 can have a powerful impact on a student's personal identity and academic expression, and can be helpful in the development of L2 literacy skills. The strength of an L1, in terms of literacy and vocabulary breadth and depth, is important to consider because language minority students are often low-income, presenting challenges for their vocabulary and literacy development. These challenges may be due to limited resources and limited types of interactions with adults and more capable peers, including adults' limited awareness of strategies to develop vocabulary.

Therefore, the preservation and promotion of minority languages is important cognitively and socio-culturally for both L1 and L2 learners, and two-way dual immersion educational programs exist as an important option to reach the goal of preserving these languages and cultures. Contrarily, English-only immersion for Spanish-dominant students has been correlated to Spanish language loss, while Spanish-dominant students in a two-way immersion setting did not experience Spanish language loss and experienced the

same level of proficiency in English development (Barnett, et al., 2007). The benefits of two-way dual immersion programs seem to outweigh any potential risks while presenting a more equitable option for low-income, language minority students.

While two-way immersion programs have many benefits, there is still work to be done. Barnett et al., reported gains made in receptive vocabulary in the target language in two-way immersion programs, but not in expressive vocabulary (2007). This suggests that instructional strategies to promote expressive vocabulary should be explored. Hoskins studied the impact of music as an instructional strategy on children with developmental delays and found that it improved their expressive vocabulary skills (1988). The central question guiding this capstone asks what effect a Spanish vocabulary-through-music instructional intervention has on the development of early literacy skills of preschool students in a bilingual setting. In addition to its potential usefulness as a language learning tool, music is also a powerful cultural tool and could assist in the preservation of cultural traditions of language minority students (Li & Brand, 2009).

In the next section, the development of early literacy skills is discussed, including the advantages and disadvantages of phonics-based and whole-language reading programs. Previous information presented regarding the importance of vocabulary acquisition and the effectiveness of two-way dual immersion programs for first and second language learners has implications in the development of literacy in first and second languages.

Development of Early Literacy Skills

The development of literacy skills is a complex process requiring several levels of brain function: phonological (speech sounds), graphic (written and printed symbols), lexical

and semantic (word meaning and use), syntactic (word arrangement and sentence structure), communicative (verbal or written interactions), and cultural (anthropological variations in vocabulary, speech patterns, and etiquette) (Sousa, 2014). Teachers have adopted different strategies for teaching reading; two of the most widely used strategies are phonics-based programs and whole-language programs. While educators may disagree on the most effective methods for teaching reading, most will agree that a child's reading ability has implications for later success or challenges in learning.

Carbo discusses the advantages and disadvantages of phonics programs and whole-language programs, and ultimately argues for an instructional program that incorporates elements of both methods (1996). Learning to read is a high-stakes issue as it is important for later learning, and teachers and principals feel pressure to achieve high reading levels in schools (Carbo, 1996). Sometimes phonics-only programs fail, or falsely advertise how easy reading can be, such as the Hooked on Phonics product. However, some children do respond well to phonics-based programs, while others do not. Whole language programs produce similar results: some children respond well, while others do not. Carbo (1996) argues that schools need to incorporate the best of both phonics-based programs and whole-language programs into their instructional strategies for teaching reading.

Carbo recommends using more than one method in the classroom to teach reading rather than a single, strict approach. Children who are analytical and have strong auditory skills typically respond well to phonics while children who can easily recall words they've heard and seen in stories, children who are tactile, visual, and who have what Carbo (1996)

describes as global reading styles typically respond well to whole-language programs. For schools that use phonics programs, Carbo (1996) recommends infusing additional strategies, such as using recorded stories, choral reading, and reading in pairs. For schools that use whole-language programs, Carbo (1996) recommends providing sufficient structure and some sequential skill practice, and mini-phonics lessons for the analytical learners (these lessons can even be tape-recorded so students can learn and practice at their own pace). Teachers also need to model reading aloud before expecting students to read independently. For both types of programs, Carbo (1996) recommends plenty of auditory input from recordings, allowing children to receive the repetition they need as they look at the words and hear them pronounced. As discussed earlier, The act of reading alone cannot increase a child's vocabulary (Carver, 1994); children need many types of input in order to gain vocabulary and reading skills.

Manning and Kamii studied kindergarten students' reading and writing development in a longitudinal study comparing whole language instruction to isolated phonics instruction in 2000. Students who received contextualized phonics instruction from a teacher who identified herself as a whole language instructor experienced greater gains in reading and writing skills, and were less likely to regress or become confused than the students who received isolated phonics instruction from a teacher who identified as a phonics instructor (Manning & Kamii, 2000). The phonics teacher used worksheets and flashcards, practiced sounding out words and sound blending, and had children read to classroom visitors. Occasionally, students in the phonics classroom were read to by the teacher (Manning & Kamii, 2000). The whole language teacher spent an hour each day

reading aloud to children and taught phonics in context at opportune moments, such as asking students to help her write a note to the custodian or to a sick classmate, while journaling, or when focusing on sounds and words in popular songs like “The Itsy Bitsy Spider.” Additionally, Children wrote their own books and shared them with classroom visitors (Manning & Kamii, 2000).

Manning and Kamii (2000) explained that when preliterate children look at letters, they believe that they function in the same way that pictures function. If the example sentence “Daddy kicks the ball” were to be represented in pictures, the children would see Daddy kicking and they would see the ball, but the word “the” wouldn’t be represented in pictures (Manning & Kamii, 2000). This theory of representation from the child’s perspective seems to be consistent across languages, as do their developmental stages of language and literacy as Ferreiro confirmed in studying children in Argentina and Mexico (Manning & Kamii, 2000).

The students who received contextualized phonics instruction from the whole language teacher made greater gains in both reading and writing skills (Manning & Kamii, 2000). These findings bring into question the behavioristic perspective of children’s learning in that reading instruction which stresses sequential accumulation of specific pieces of print knowledge and sound knowledge is not the most effective method for the development of literacy. Rather, a Piagetian constructivist perspective on reading, where children’s framework of words, sounds, pictures, and letters is gradually expanded through contextualized phonics instruction, proved a more effective method for literacy development (Manning & Kamii, 2000).

Children's vocabulary knowledge is related to their ability to learn to read. Harris, Michnick Golinkoff and Hirsh-Pasek discuss, in the Handbook of Early Literacy Research edited by Dickinson and Neuman, how children learn vocabulary as well as the implications for the classroom (2011). Rather than teaching vocabulary via strategies such as scripted memorization, vocabulary should be taught to young children through natural conversations in the classroom and engaging play (Harris, Michnick Golinkoff & Hirsh-Pasek, 2011). Babies develop comprehension skills more quickly than production skills, which means that it is easier to remember words heard frequently than it is to produce these same words (Harris et al., 2011). Knowing the different contexts in which a word is used helps children understand how to use the word in new contexts (Harris et al., 2011). Furthermore, concrete nouns are easier to acquire than more abstract terms, however, all types of words are necessary components in a child's vocabulary in order to be able to understand and create complex sentences (Harris et al., 2011). Children learn vocabulary best not when words are presented in isolation, but through acquisition of concepts surrounding vocabulary words; this can be achieved through activities such as dialogic reading with adults, during which adults not only read the text on the page, but engage the child in questioning and in creating connections to real life experiences (Harris et al., 2011). Dialogic reading has also been shown to cause children to score higher on vocabulary assessments and improvement in their expressive language abilities (Harris et al., 2011).

Children first learn the words that they hear most frequently, then they learn words that are related to their interests, and the best learning happens in interactive, meaningful

contexts rather than passive activities (Harris et al., 2011). Furthermore, children are capable of learning words through a child-friendly presentation of definitions which incorporates their prior knowledge. Rather than sequential, the processes of learning vocabulary and learning grammar are reciprocal, again pointing to the importance of highly contextual and interactive rather than strictly sequential and analytical learning (Harris et al., 2011). Natural interactions are the source of vocabulary acquisition and the probability that certain words will become a permanent part of a child's vocabulary is increased when that child is experiencing high levels of engagement and motivation during the interaction involving those words (Harris et al., 2011). Lastly, teaching words in contexts that are significant to children while providing information about the meaning of the words allow children to learn difficult or rare words (Harris et al., 2011).

In 2012, Hansen and Milligan studied the intersection of music education and literacy skills, finding that skills developed in the music classroom helped children become better readers. Specifically, Hansen and Milligan looked at the development of aural skills in children as related to music instruction and reading ability (2012). Children's first exposure to music is usually aural, as is their first exposure to reading; in both activities, processing sound is critical (Hansen & Milligan, 2012). In the literacy world, this type of sound processing is known as phonological awareness, and includes word segmentation and distinguishing the beginning and ending sounds of words (Hansen & Milligan, 2012). Music training helps children with their auditory discrimination, which is important for being able to understand the different sound parts in words when learning to read and when developing their language skills (Hansen & Milligan, 2012). In fact, musicians have

differences in their brains, and their musical training impacts the way their brains function (Hansen & Milligan, 2012). A child's ability to read is related to pitch, volume, rhythm patterns, and tempo of speech, and a child's phonological awareness, which is a predictor of early literacy, is correlated with music instruction (Hansen & Milligan, 2012).

In a study of kindergartners, Gromko found that students who received music instruction demonstrated better development of phonemic segmentation than students who did not receive music instruction (Hansen & Milligan, 2012). In a separate study, a University of Hartford team found that kindergartners' tonal musical aptitude predicted their ability to rhyme (Hansen & Milligan, 2012). Music has a tendency of drawing children's attention to the differences between sounds, which is why Neuman, Copple, and Bredekamp encourage teachers to utilize chanting, singing, clapping and tapping to draw children's attention to syllables for word segmentation instruction (Hansen & Milligan, 2012). Music and language share cognitive links and are comparable domains because both are organized temporally and perceived aurally (Hansen & Milligan, 2012).

Sousa (2014) stressed that children must have a basic vocabulary knowledge in order to understand what they are reading, and that when learning the sounds that letters represent, it is best to avoid confusing the child by also introducing the letter names at the same time. Decoding skills, according to Sousa (2014) are essential for proficient reading, and these skills improve when children are shown many examples, supporting the contextualized/constructivist perspective promoted in the Manning and Kamii study from 2000. However, Sousa (2014) does argue for the systematic instruction of word recognition and decoding as well as a solid alphabetic foundation and explicit spelling instruction

which points to the behaviorist perspective. Sousa (2014) seems to be arguing for the contextualized phonics instruction that Carbo (1996) and Manning and Kamii (2000) also promote.

Children's familiarity with words, according to Sousa (2014), has a direct impact on their reading fluency; and even the fluency of children who are relatively proficient in reading worsens when coming across unfamiliar terms. Sousa's (2014) findings support the work of Harris et al. (2011), and Christ & Wang (2010) who argue that a child's vocabulary acquisition impacts their ability to learn to read and impacts later learning. Sousa (2014) also confirms that while some vocabulary should be taught directly, most vocabulary is learned indirectly in contextualized settings, rather than being taught directly through flashcards and other direct instructional methods. In addition to fluency, reading comprehension depends largely on a child's oral vocabulary, and the more frequently children interact with words in different contexts, the more solid their understanding becomes of their different meanings (Sousa, 2014). Sousa (2014) recommends teaching elementary school children five or fewer words per lesson and focusing on depth of comprehension rather than quantity of words.

In the last section, research on the impact of music on language learning in children and adult learners is reviewed, as well as the neurological relationships between music and language. Implications for the instruction of both first and second language learners regarding the use of music are suggested.

Music and Language Learning

Bygrave (1995) studied children who were having difficulty reading and who participated in listening interventions; one focusing on music activities, and the other focusing on storytelling. While the music program incorporated singing, playing musical instruments, movement, and listening activities, the storytelling program incorporated read-alouds by the classroom teacher on a daily basis accompanied with conversation to elicit skills such as listening, comprehension, and organization (Bygrave, 1995). Both programs focused on the development of listening skills and were implemented over the course of 30 weeks by the children's teachers (Bygrave, 1995). Children who participated in the music program showed an increase in receptive vocabulary, but this result was made apparent only at the end of the intervention, which indicates that a long time period was necessary for the music program to take effect (Bygrave, 1995). Bygrave (1995) also identifies the acquisition of vocabulary as an indicator for reading success, and concludes that music is an effective tool for developing language skills, especially for children who experience reading difficulties. The structure, sound patterns, and rhythms in music, along with the natural opportunities in music for analysis and reflection complement the processes found in learning language (Bygrave, 1995). In both music and reading education, educators stress the importance of listening to and learning about sound, and developing skills such as rhyming has been found to be beneficial to children who are struggling to learn to read (Bygrave, 1995). Additional studies by Kalmar (1982, 1989), and McMahon (1982) demonstrated the ways in which music education assists preschool children in their language and reading skills (Bygrave, 1995).

In a study on adult English language learners, Li and Brand (2009) studied the use of songs in terms of their effect on vocabulary acquisition, language usage and comprehension. The study specifically examined the degree to which songs were used in instruction in order to determine the most effective amount of song instruction (Li & Brand, 2009). Li and Brand (2009) found that the students who received the most instruction through song achieved higher posttest scores. The brain processes music and language in the same area, and neurologists have confirmed that musical and linguistic syntax are processed similarly (Li & Brand, 2009). While other studies have focused on the development of listening skills as a benefit of musical instruction, Li and Brand (2009) also argue that the inclusion of song lyrics additionally teaches cultural concepts, which is important for second language learners. The vocabulary level in most pop music is relatively easy (around that of a native-language-speaking 11-year-old); this difficulty level along with the repetitive nature of songs make them an ideal teaching tool for second language learners (Li & Brand, 2009). Furthermore, the beat and fluid nature of songs helps learners advance from single-word utterances to more conversational speech (Li & Brand, 2009). Li and Brand (2009) also discussed the impact that music has on memory, and implications for language learning; the repeated lyrics and rhythms in songs may enhance the ability to grasp grammar concepts and reproduce accurate pronunciation among second language learners. Li & Brand (2009) also studied student attitudes and found that the group receiving the most musical instruction demonstrated the most positive attitudes and highest levels of confidence toward learning English, which complements the findings of Harris et al., (2011) who suggest that highly motivated students absorb

language best. Depending on the specific language background of students and the language(s) being studied in different contexts, music could have varying effects on the vocabulary acquisition and language and literacy development of learners. Li & Brand (2009) recommend future studies examining the effectiveness of music on different language groups in addition to the Chinese students studying English as a second language in order to determine whether music has a greater or lesser impact on students from different cultural and ethnic backgrounds.

In another study involving adult students learning Hungarian, Ludke, Ferreira and Overy (2014) concluded that singing supports foreign language learning. The group assigned to the singing intervention outperformed the rhythmic speaking intervention group as well as the speaking intervention group on language tests which asked participants to recall and produce Hungarian words and phrases (Ludke et al., 2014). The findings from this study suggest that a listen-and-sing instructional strategy can support students' second language expressive language skills (Ludke et al., 2014). Ludke et al., (2014) discuss links between musical ability and foreign language ability, including learners' ability to speak, pronounce, and imitate foreign language phrases (Ludke et al., 2014). Furthermore, pitch perception is related to accurate pronunciation in the second language (Ludke et al., 2014). Ludke et al., (2014) also notes that songs may be especially helpful to beginning second language learners as the change in pitch of the melody often corresponds to the transitions between syllables, aiding learners in understanding word segmentation. There has been more research done on the impact of song on native language than on second languages; studies by Calvert & Tart (1993) and Rainey & Larsen (2002) suggest that music improves

memory and recall when information is learned through song, while other studies showed support for music's role in developing phonological awareness and literacy skills in students' native languages (Ludke et al, 2014). As the Ludke et al., (2014) study included rhythmic speaking groups and speaking groups, they were able to conclude that, contrary to previous research, rhythm alone is not as effective as rhythm and melody used together in language learning. Rather, pitch and melody were found to play a significant role in the second language expressive skills (Ludke et al., 2014). This study specifically examined the speaking mode of communication, rather than reading, writing, or listening, demonstrating that learning through singing is transferred directly to speaking ability (Ludke et al., 2014).

Patel (2010) stated that "Language and music define us as human" in his study of the relationships in the brain between language and music, including the elements in language and music of pitch and timbre, rhythm, melody, syntax, meaning and evolution. While the mind interacts with pitch when listening to music, and with timbre when listening to speech, the brain mechanisms that categorize learned sounds are common to both domains, which suggests implications for the study of the development of communication (Patel, 2010). Deep connections between speech and music are discussed, such as the similarities between speech intonation and melody in music; pitch patterns in a musical composition are reflective of the composer's native language, suggesting that intonation and melody are deeply related (Patel, 2010). Patel also discussed overlap in processing of syntax structures of song and speech, finding that the brain activates similar resources in order to process both types of syntax (2010).

Rationale for Future Research

Considering the previous research on the vocabulary gap, dual immersion education, the development of early literacy skills, and the impact of music on language and literacy learning, I found that there are still questions about specific age groups and learner types with regard to developing vocabulary through a music based intervention and the impact of the acquired vocabulary on literacy skills. Specifically, what impact does a music-based Spanish language curriculum have on the vocabulary acquisition of first and second language learners in a Spanish-English two-way dual immersion setting? And what are the implications for literacy development connected to the vocabulary acquired through the music-based curriculum?

Summary

In this chapter, the crucial nature of vocabulary acquisition of young children in their development of literacy and for the success of later learning was emphasized; children from low-income families are typically exposed to fewer words and therefore start preschool and kindergarten at a disadvantage. Furthermore, many immigrant populations, such as the Latino and Hispanic population in the United States, are also low-income, which further problematizes their acquisition of first and second language vocabulary. Two-way dual immersion programs have emerged as a potential model for preserving and developing native languages while introducing and developing second languages. In these programs, children demonstrate long term benefits of bilingualism such as improved academic achievement, and no ill effects on the learning of the second language have been observed as compared to monolingual immersion programs. The way in which children

develop early literacy skills was explored, including the popular, though often at odds strategies of phonics-based and whole-language reading programs. Ultimately, multiple studies point to the importance of contextualized, rather than isolated, phonics instruction through highly engaging activities, of which song and music are almost always included. Finally, music as an instructional strategy for children and adult language learners was explored and found to be highly effective for both first and second language learners. Music was found to facilitate learning of facts and information in native language learners, and facilitated children's abilities to segment words into syllables. Furthermore, music was found to be an effective strategy for learning vocabulary for foreign language learners.

In the next chapter, a methodology and rationale for a study to explore the question, "What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?" will be presented. The proposed study will be described, including the potential participants, the school and classroom setting, the method through which a musical instructional intervention will be tested, and how data from the intervention will be analyzed to determine effectiveness.

CHAPTER THREE

Methods

Overview

Considering research conducted previously on the vocabulary gap, dual immersion educational settings, the development of early literacy skills, and the relationship between music and language learning, this chapter will present methodology and rationale for a study to answer the question, "What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?" The nature of the study will be described, including the participants, the educational setting, my relationship as a researcher to the students and the setting, the strategies and tools to gather information from participants, and the duration of the study including nature and frequency of instructional intervention sessions. Additionally, an explanation of how data will be analyzed will be included in this chapter, as well as rationale for the methods chosen to answer the research question.

Research Paradigm

The purpose of this study is to determine the effectiveness of song-based instructional strategies on the vocabulary development and early literacy skill development of preschool students of different language backgrounds. The study will involve a quantitative research methodology to test the effectiveness of a musical intervention for teaching Spanish vocabulary; both receptive vocabulary and expressive vocabulary acquisition will be measured. This will be accomplished by randomly assigning students to

a control group (non-musical) or experimental group (musical). Both groups of students will receive Spanish vocabulary instruction, but the delivery of the instruction will be in song form for the experimental group and in spoken form for the control group. I will determine the effectiveness of each intervention by administering a Pretest-Posttest Control Group Design as described by Creswell (2014) to measure the Spanish vocabulary acquisition as a result of the interventions. The goal of this research is to identify an effective method for vocabulary acquisition, which, as discussed in chapter two, has an impact on a child's overall literacy and long term success in school. To accomplish this, I will compare the pre-test and post-test data from the students in the control group to that of the students in the experimental group. I will be acting in a role that is a mix between an active participant observer and a privileged, active observer. According to Mills (2007), teachers who are actively engaged in their own classrooms, observing the outcomes of their teaching and making adjustments according to the effects observed are active participant observers. Privileged, active observers, on the other hand, observe their students when they are not the primary person responsible for providing instruction, such as during a specialist class (Mills 2007). My particular role in the study will be to provide the instructional interventions for the control group and experimental group, however, I am not one of the teachers at the school. My role at the school is as program manager, in which I supervise and support the teaching staff. This research model will allow me to focus on the specific strategy being studied with minimum interruption to the other learning activities that the teachers will have planned.

Rationale

There are many reasons to explore effective strategies for vocabulary development. Children from low income backgrounds typically start preschool and kindergarten knowing fewer words than their higher income peers, which puts them at a disadvantage for developing literacy skills and other academic skills (Christ & Wang, 2010). This study will specifically address students who not only come from a range of economic backgrounds, but who also have different language backgrounds. This is important because as our classrooms continue to diversify (Klein, 2015) teachers will be looking for instructional strategies which are effective for most or all of their very different students. Furthermore, Latino children, many of whom come from low-income backgrounds, are less proficient in language, literacy, and other skills when they enter kindergarten (Ansari & López, 2015). This study will take place in a setting where a significant portion of the students are Latino and/or Spanish-speaking, while most of the remaining students are English-speaking; a few students come from bilingual or trilingual backgrounds which include languages other than English and Spanish. Additionally, approximately 45% of the students come from low-income families. This research will allow me to study the effectiveness of a music-based Spanish vocabulary intervention on the vocabulary acquisition of Spanish-speaking children and English-speaking children from a range of economic backgrounds while measuring the effect of the intervention on their early literacy skills in both languages. In order to pinpoint which group this intervention impacts most powerfully, the students will be randomly assigned into a control group (non-musical Spanish vocabulary intervention) and experimental group (musical vocabulary intervention) and their pretest and posttest data will be analyzed by language background and income

background. Furthermore, in order to focus the analysis on the effect that the musical intervention has on vocabulary acquisition, a true experimental design, as described by Creswell (2014) will be used, specifically a Pretest-Posttest Control-Group Design. This method will allow me to first gather baseline vocabulary data in the pretest, then measure any growth or change that happens during the intervention period by administering the same test again in the posttest. The pretest-posttest gathering of data will facilitate the analysis of the musical intervention on the direct impact that this intervention has on the acquisition of the Spanish vocabulary present in the intervention. Furthermore, pretest and posttest data on other literacy measures administered on a regular basis by the students' classroom teachers can be analyzed to determine whether or not the musical intervention had an impact on other developing literacy skills such as rhyming and alliteration.

Participants

The participants in this study are four- and five-year-old preschool students. In a class of 20 students, 11 are English-speaking, 5 are Spanish-speaking, and 4 are bilingual. 11 of the students qualify as low-income and receive need-based scholarships. Additionally, 12 of the students attend 4 days per week while 8 of the students attend 2 days per week. These students were selected because they are in their last year of preschool and will be going to kindergarten next school year, therefore, much attention is paid to the development of their vocabulary and literacy skills in order to best prepare them for success in school.

Setting

The study will take place in a private, nonprofit preschool with a student population of 108. The school has two classrooms serving 3- and 4-year-old students, one classroom serving 3- to 5-year-old students, and two classrooms serving 4- and 5-year-old students. The mixed age classroom (3- to 5-year-olds) is a satellite classroom located within a public elementary school. Of the 108 total students, approximately 40% are Spanish-speaking, 53% are English-speaking, 7% are bilingual. 45% of students qualify as low-income and receive a scholarship to attend preschool.

The preschool is located in a large city in the upper midwest United States. The preschool is a private, nonprofit program unaffiliated with the city's public schools, however, the majority of the preschool graduates will attend one of the city's district schools. In fall 2016, this school district reported an enrollment total of about 35,000 students, of which 3.6% were Native American, 37.6% were African American, 6.1% were Asian American, 18.4% were Hispanic American, 34.2% were White American, and 0.1% were Pacific Islander.

This urban community has a significant achievement gap problem. The graduation rate for the district as a whole in 2015 was only 64.3% (Office of Research Assessment & Accountability, 2016). White students graduated at a rate of 81.6% while Hispanic students graduated at a rate of only 57%, despite surpassing the attendance rate goal of 90%. Additionally, the district reported that students of color demonstrated slower growth than white students in reading and math, and that students receiving support via special education, English language learning services, or free and reduced lunch also demonstrated slower growth than students who did not receive such services.

The city where the preschool is located is home to a large population of Hispanic and Latino people. The city's total population is 10.5% Hispanic or Latino (United States Census Bureau, 2010). This state also supports Hispanic and Latino people via the DREAM act, to provide in-state tuition rates to undocumented students, and through a Drivers' Licences for All program, in which undocumented people can obtain licenses to drive motor vehicles legally. Furthermore, in 2015 the city council resolved to support President Obama's policies regarding comprehensive immigration reform.

Some would say that Hispanic and Latino people are thriving in this community, while others would say that the community has failed Hispanic and Latino people. As the Hispanic and Latino population continues to grow, programs such as the city's Drivers' Licenses for All may represent at least a limited level of support, but do not adequately address the needs of this disadvantaged group (Hartzler, 2014). Boosting the educational efforts for Hispanic and Latino children, beginning in preschool, may set them on a better academic and career path, leading to success for them as individuals and for the community as a whole (Berger & Fisher, 2013).

Methods

In order to answer the question, "What effect does a Spanish vocabulary-through -music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?" a quantitative study in the form of a true experimental design, as according to Creswell (2014) will be conducted. Specifically, a Pretest-Posttest Control-Group Design will be implemented (Creswell 2014). Students will

be randomly assigned to either an experimental group or a control group using a tool such as Randomizer.org.

First, students' baseline vocabulary knowledge will be evaluated using a teacher-made test (in this case, the test will be created by me, the teacher-researcher), described by Mills (2011) as a very common data collection tool used by educators. The test will consist of a set of picture cards published by Sing 'n Speak Spanish and a data recording sheet created specifically for this study. The teacher-researcher will administer the expressive vocabulary pretest and the receptive vocabulary individually with each student. The student will be shown one picture card at a time and will be asked to name the object pictured on the card in Spanish for the expressive part of the test. Then, the student will be shown the set of cards facing up, and will be asked to identify specific picture cards (i.e. "Point to the picture of the pencil") for the receptive vocabulary test. The responses given during the expressive portion will be recorded, and the responses given during the receptive portion will be marked as correct or incorrect. The expressive portion of the pretest will be timed for two minutes, and the receptive portion of the pretest will also be timed for two minutes. Responses will be documented on a recording sheet. Students will be given a small prize (sticker, pencil, etc.) to reward their participation.

After the baseline data is gathered, the instructional interventions will begin. The control group will receive a non-musical Spanish vocabulary instructional intervention using an expanded set of vocabulary from the Sing 'n Speak Spanish curriculum. The non-musical intervention will consist of vocabulary instruction and practice using picture cards and conversation about the objects featured on the picture cards. The experimental

group will receive a musical Spanish vocabulary instructional intervention using the same expanded set of vocabulary and songs featuring the items on the picture cards. The musical intervention will consist of instruction using picture cards and songs which students will listen to and will be encouraged to sing. Both the control group and experimental group will receive instructional interventions which deliver a mixture of direct instruction (picture cards) and contextualized instruction (conversation or singing). This mixed delivery method is important because it intentionally exposes children to vocabulary words they may not have otherwise acquired through highly interactive, engaging and child-friendly activities (Christ & Wang, 2010; Harris et al., 2011).

After the intervention period, the students will be evaluated through the posttest, which will have the same format and content as the pretest; students will be presented with picture vocabulary cards from the Sing ‘n Speak Spanish set and will be asked to name, in Spanish, the object on the card, for the expressive portion of the test. For the receptive vocabulary post-test, the students will be shown several picture cards at once, and will be prompted to identify a specific item by pointing; for example, the teacher-researcher will say, “Point to the picture of the book.” The expressive responses given by the student during the two-minute expressive post-test will be recorded, as well as the number of correct and incorrect responses that students give during the receptive post-test, and again students will be given a small prize (sticker, pencil, etc.) for their participation.

Sing ‘n Speak Spanish is a curricular product owned and developed by Julia Burnier, a teacher and researcher. In this study, Year 1 of the curriculum will be used, whose topics include greetings, classroom, numbers, colors, body parts, adjectives,

feelings, weekdays, weather, months, family, clothing, furniture and household items, fruits, foods, verbs, and the alphabet. In order to ensure that the vocabulary is studied and practiced with sufficient depth and repetition, only four of the topics will be used during the intervention period: classroom, clothing, furniture and household items, and fruits.

The data will be analyzed by comparing correct and incorrect answers from the pretest and posttest. Did the control group experience change or growth in their expressive and receptive vocabulary acquisition? Did the experimental group experience change or growth? Which group demonstrated more progress? The data will be analyzed at the individual and group levels, and will be separated by language background and economic background in order to identify trends. Other factors may be considered, such as student attendance rates. Families have the option to enroll their children either two days per week or four days per week. Additionally, students may not attend all of the days on which they are scheduled to attend due to illness, family commitments, or transportation issues.

For triangulation purposes, additional data may be analyzed in order to measure the impact of the musical and non-musical vocabulary interventions on students' other developing literacy skills (rhyming, alliteration, letter naming, letter sound identification, etc.). This data will be collected as part of the routine assessments that the classroom teachers conduct each fall, winter, and spring. The fall and winter data will have been collected before the intervention period, and the spring data will be collected following the intervention period. This data is collected in English by the classroom Reading Corps tutor using an instrument called IGDIs (Individual Growth and Development Indicators), and in Spanish by the classroom teachers using the Spanish IGDIs. Both assessment tools were

developed by Early Learning Labs of the University of Minnesota. In both English and Spanish versions of the assessment, students will be evaluated on picture naming/vocabulary (not the same set of vocabulary as taught in the Sing ‘n Speak Spanish curriculum), sound identification (letter sounds), letter names, and alliteration. All children (English-speaking and Spanish-speaking) will be assessed in both languages.

In order to conduct this study, I will first obtain permission from the executive director of the preschool. I will then communicate with the teachers whose classrooms I will be working in and explain the study while answering any questions they may have. I will also offer to hold an information session for staff and parents to attend should they have questions or want to learn more about the study. I will develop and distribute a consent form, available in Spanish and English, to the parents of the students in the class chosen to participate in the study, and based on the responses I receive, will determine student eligibility for the study. After this step is completed, I will randomly assign students to either the control group or the experimental group using a tool such as Randomizer.org. Upon completion of the study and this capstone paper, I will make the results available to the staff and parents.

Duration and Frequency

The study will take place during the spring months of the 2016-17 school year. The consent forms will be distributed and collected over a one week period, during which an information session, tabling, and/or individual conversations explaining the study will be offered so that parents who prefer to receive information verbally or in a presentational format will be accommodated. The pretests will be administered the following week,

followed by an instructional intervention period. During the intervention period, the control group and experimental group will receive several instructional interventions lasting approximately 20 minutes. The interventions will include vocabulary based on the following topics: classroom, clothing, household items, and fruits. Following the interventions, the children will take a posttest, and data will subsequently be analyzed. The entire study, starting with the distribution of the consent forms and ending with the comparison and analysis of the pretest and posttest results, will last approximately 6 weeks.

Institutional Review Board Process

The parents or legal guardians of all students will need to read and sign consent forms in order to determine eligibility for participation in the study. Students will be assigned random ID numbers for data tracking purposes. The recording sheets used for the pretest and posttest will not contain student or teacher names or any identifying information. Any notes or observations that are recorded during the study will not contain the names or any identifying information of any students or teachers. Any identifying information from data gathered by classroom teachers from routine tests taken previous to the study (in the fall and winter of the same school year) and following the study (in the spring) will be removed and the data will be analyzed in terms of demographic groups (language background, income, etc.).

An Institutional Review Board Proposal Form will be submitted for review. As this study will involve children under the age of 18 and will involve the use of educational tests, it will be considered nonexempt and will go through a full review. This study will measure the effects of a musical Spanish vocabulary intervention on the receptive and expressive

Spanish vocabulary acquisition of students from different language backgrounds in a bilingual educational setting. The change in students' scores on a vocabulary pretest and posttest will be measured to determine effectiveness of the music-based intervention. The nature of the study and participation of students will be explained to parents in the consent form; additionally informational tabling or individual conversations will be offered as an additional support to parents. Once the Institutional Review Board Proposal Form is approved, consent forms will be distributed to parents and the study will proceed after student eligibility, based on parent response and consent, is determined. The Institutional Review Board process is intended to protect the privacy and interests of students, parents, and staff who may be directly or indirectly impacted by the study.

Conclusion

This chapter described how, through a research study involving preschoolers, I will attempt to answer the question, "What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?" I described the type of experiment (a Pretest-Posttest Control-Group Design) and provided information about the research subjects, their school setting, and the broader community, including its challenges with the academic achievement gap. The research paradigm (quantitative) and rationale for the study were described, explaining the need to find effective vocabulary instructional strategies to support young children from different language backgrounds for success in kindergarten and later grades. The methods of the experiment were described in detail, including the specific curriculum, Sing 'n Speak Spanish, to be used in the intervention, the nature of the

pretest and posttest, the types of activities to be included in the control group and experimental groups, and the manner in which the data will be measured and analyzed in order to determine the effect of the musical intervention. The duration of the study was described (six weeks of instructional intervention, two weeks of pretest and posttest evaluation, and one week to distribute and collect consent forms from parents or legal guardians), as well as the frequency of the instructional interventions (twenty-minute sessions twice per week for 6 weeks). Lastly, the Institutional Review Board process was described.

The next chapter quantifies and describes the data collected during the research study and analyzes these results according to demographics such as language background and income level. The data will be evaluated quantitatively by measuring the change in number of correct/incorrect Spanish vocabulary responses between the pretest and the posttest to determine the effect of the instructional interventions. The results of the study will be discussed in order to answer the research question, “What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?” The results will be connected and compared to previous research presented in the literature review of chapter two. Possible causation of the results will be discussed, as well as implications for teachers of preschool students.

CHAPTER FOUR

Results

Introduction

The objective of this study was to answer the question, What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting? This chapter discusses the results of the study, including the design and execution of the experiment, the description of participants and research setting, sample responses as well as an in-depth analysis of the expressive and receptive vocabulary test results by group (experimental or control) and subgroup (language background, scholarship status, and enrollment schedule). The statistical significance of the results is also discussed.

Description of the Study, Participants, and Research Setting

In order understand whether or not a Spanish vocabulary-through-music instructional intervention influences the development of early literacy skills, twenty preschool-aged students participated in the study, which consisted of a pre-test measuring Spanish receptive and expressive vocabulary, participation in either an experimental group receiving musical vocabulary instruction or a control group receiving non-musical vocabulary instruction, and a post-test measuring Spanish receptive and expressive vocabulary. The study took place over the course of four weeks during the spring of 2017. All participants were tested twice (pre- and post-instructional interventions) and participated in approximately five instructional intervention sessions between testing periods.

Of the twenty students that participated, five were Spanish speaking, four were bilingual, and eleven were English speaking. Eleven of the students received need-based scholarships to attend preschool. Twelve of the students attended preschool four days per week, and eight of the students attended preschool two days per week.

The educational setting where the study took place was a private, non-profit preschool utilizing a dual immersion instructional method. Students received daily instruction from their teachers in Spanish and in English, and the student population was balanced among native Spanish-speaking students and native English-speaking students.

The pre-test consisted of two parts, assessing the child's expressive vocabulary knowledge and receptive vocabulary knowledge prior to the instructional intervention. The expressive vocabulary assessment consisted of a set of sixteen Spanish vocabulary words. The pre-test was administered individually to each child. First, the test administrator tested the child participant's existing expressive vocabulary knowledge by showing the child the sixteen vocabulary picture cards one by one. Before seeing the cards, the child heard the following instructions, in Spanish or English, depending on the child's native language: "We are going to play a game! I'm going to show you a picture, and I want you to tell me what it is. If you don't know, you can say 'I don't know.'" The test administrator then showed the child participant the picture vocabulary cards, one by one. The test administrator wrote down the child's response to each picture card on a recording sheet. If the child failed to respond or say "I don't know" within ten seconds when shown a picture card, the test administrator moved on to the next picture card. After the expressive pre-test, the child participant was instructed to begin the receptive pre-test. The child participant

heard the following instructions, “Now we’re going to play a different game! I’m going to show you four pictures at a time. Then I’m going to tell you to touch a certain picture.” The test administrator proceeded to lay down four picture cards on a table, then, in a random order, asked the child to identify the vocabulary words by touching the corresponding picture. The test administrator recorded “correct” or “incorrect” on a corresponding recording sheet. Upon completing the expressive and receptive pre-tests, the child was given a sticker and returned to the normal activities in the class.

The instructional intervention for the experimental group consisted of five, twenty-minute instructional sessions. Ten of the twenty students were randomly selected to participate in the experimental group, and the other ten students participated in the control group. The experimental group’s instructional interventions included listening to Spanish songs containing the vocabulary words assessed in the pre-test while the teacher-researcher showed picture vocabulary cards which corresponded to the songs’ lyrics. The children participated as a group and were seated together on the floor. The teacher-researcher then gave the students the following instructions: “We are going to listen to a song! Your job is to listen to the words and look at the picture cards that I am going to show you. You can sing along if you know the words, or you can dance.” The students in the experimental group listened to a total of four songs with vocabulary from the following topics: fruits, clothing, classroom, and furniture/household items.

The instructional intervention for the control group also consisted of five, twenty-minute sessions, however it did not include any music. Instead, the teacher-researcher read the lyrics of the songs as a story in nonmusical, conversational tone.

Additionally, the children were shown the corresponding picture vocabulary cards. The children in the control group heard the following instructions: “We are going to listen to a story! Your job is to listen to the words and look at the picture cards that I am going to show you. You can say the words with me if you know them.” The students in the control group listened to a total of four “stories,” or nonmusical lyrics from the same four songs that the experimental group listened to.

The post-test was identical to the pre-test in format and was administered individually to all twenty participantes following the five instructional intervention sessions. First, the expressive vocabulary test was administered; participants were shown the same vocabulary picture cards they saw in the pre-test and during instructional interventions and were asked to name the item on the card while the test administrator recorded their answers. Following the expressive post-test, participants were given the receptive post-test during which the test administrator showed four picture cards and at random asked the participant to identify one at a time by pointing while the test administrator said the vocabulary word aloud. The participants’ responses for the receptive post-test were recorded as correct or incorrect. The participants received a sticker at the end of the post-test and then returned to normal class activities.

All twenty student participants both in the control group and in the experimental group were given the pre-test and the post-test, however, their participation in the instructional intervention sessions varied. Some students were enrolled two days per week, either Mondays and Wednesdays or Tuesdays and Thursdays, while other students were enrolled four days per week (Monday-Thursday). Additionally, some students were absent

for part or all of an instructional intervention session due to illness or other family circumstances.

This study involved preschool students in bilingual educational setting from different language and economic backgrounds. It measured receptive and expressive vocabulary acquisition using an initial test to measure baseline vocabulary, followed by a musical instructional intervention for the experimental group and a nonmusical instructional intervention for the control group, and finally a post-intervention vocabulary test to study growth or change. The instructional interventions were brief, approximately twenty minutes each, and took place approximately five times over the course of two week during the spring of 2017. The next section includes sample responses from students for the expressive vocabulary test and explains how and why responses were recorded as correct or incorrect.

Sample Responses and Interpretation

While recording the responses of the expressive pre- and post-test, some interpretation of pronunciation and vocabulary variation was required in order to code responses as correct or incorrect. Some children's responses included pronunciation errors; for example, when asked to identify the image of the clock, a few children pronounced "relok" instead of "reloj." This response was recorded as correct, assuming that the child knew the vocabulary word but was still developing pronunciation accuracy. Additional examples of responses containing pronunciation errors but still recorded as correct included "relot" and "leloj" for "reloj;" "pela" and "para" for "pera;" "jaqueta" for "chaqueta;" "fombra" for "alfombra;" and "pepel" for "papel." Additionally, some children offered

responses which varied from the official vocabulary words taught during the interventions, but which were still correct, according to interpretation of the picture and/or regional vocabulary usage. Examples of responses differing from the vocabulary taught in the instructional intervention but still recorded as correct include “papeles” and “páginas” instead of “papel;” “carpeta” and “tapete” instead of “alfombra;” “gorro” instead of “sombrero;” “blusa” instead of “camisa;” and “plumón” instead of “pluma.”

There are many examples of responses counted as incorrect. The most common mistakes occurred when students tried to identify the writing utensils: lápiz (pencil), and pluma (pen). These mistakes included “pincel” for “lápiz” (“pincel” means “brush” and was related to “lápiz” because both are writing/drawing utensils, and is also similar in pronunciation to “pencil”); “lápiz” for “pluma,” “pincel” for “pluma,” “marcador” for “pluma,” and “un lápiz rojo” for “pluma.” In general, “pluma” seemed to be an unfamiliar word, and many students used other words in their vocabulary to identify it. It is unknown whether students lacked the specific vocabulary word “pluma,” therefore drawing from other words in their knowledge, or that in looking at the image of the pen, they visually interpreted it as one of the different objects they named, such as pencil, *red* pencil, brush, or marker. Another common error occurred when students were asked to identify clothing items. These errors were made when shown the cards for “chaqueta” (jacket), “camisa” (button-down shirt), and “falda” (skirt). Responses counted as incorrect included “camiseta” (t-shirt) and “camisa” for “chaqueta,” “camiseta” for “camisa,” “vestido” (dress) for “falda,” “jaqueto” (not a real word, but close in pronunciation to both “jacket” and “chaqueta”) for “chaqueta,” and “suéter” (sweater) for “chaqueta.” The image of the paper

(“papel”) was also a source of confusion for students; some incorrect responses for “papel” included “libro” (book) and “cuaderno” (notebook). Again, whether the students lacked the vocabulary term “papel” to identify the image, or whether they interpreted the image to be a different object entirely, is unknown. The image of the “espejo” (mirror) was mistaken for a “lupa” (magnifying glass) in one student’s pre- and post-test. Another student focused on the sun which was included in the image for “ventana” (window) and responded “sol” accordingly. While “carpeta” was counted as correct in place of “alfombra,” “carpete” was not. “Papel” was counted as incorrect for “pera;” this response seemed to suggest that the student was searching for Spanish words beginning with the letter “p” and was able to produce one which was taught in the instructional intervention, however incorrect. Lastly, some students responded with nonsense words, which were counted as incorrect. These included “macha” for “camisa,” “bedda” for “cama” (bed), and “mamira” for “espejo.”

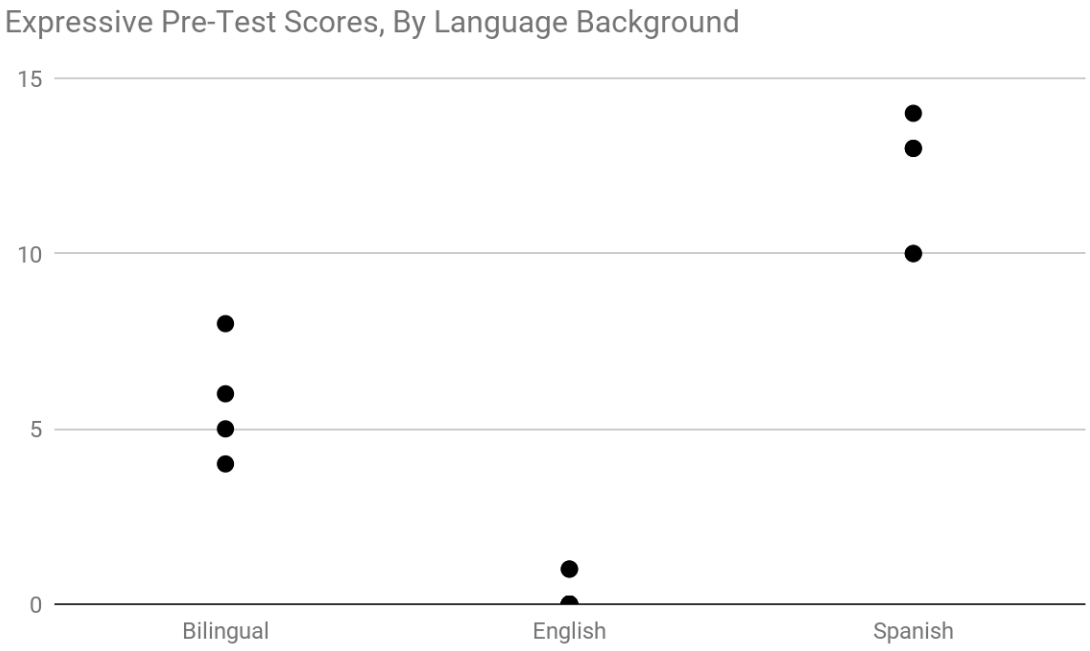
The children participating in this study were not only developing their vocabulary skills in Spanish and in English, but were also developing accuracy in pronunciation, requiring interpretation on the part of researcher when coding expressive vocabulary responses as correct or incorrect. In addition to a range in pronunciation, children also demonstrated a range of interpretation of the pictures on the test cards. For example, the Spanish words for "pages," "papers," "book," and "notebook" were all used to describe the same picture. Additionally, students at times used an acceptable regional vocabulary variation which was different from the word taught during the interventions. For example, some students used the word "tapete" instead of "alfombra," both of which are acceptable to identify "rug" in Spanish. in the curriculum, for example tapete instead of alfombra.

Common errors occurred when shown pictures of writing utensils, clothing, and a stack of paper. Additionally, some students used nonsense words to attempt to identify pictures. The next section describes students' baseline expressive and receptive vocabulary knowledge. These results are displayed by language background as well as by scholarship status, enrollment schedule, and experimental group.

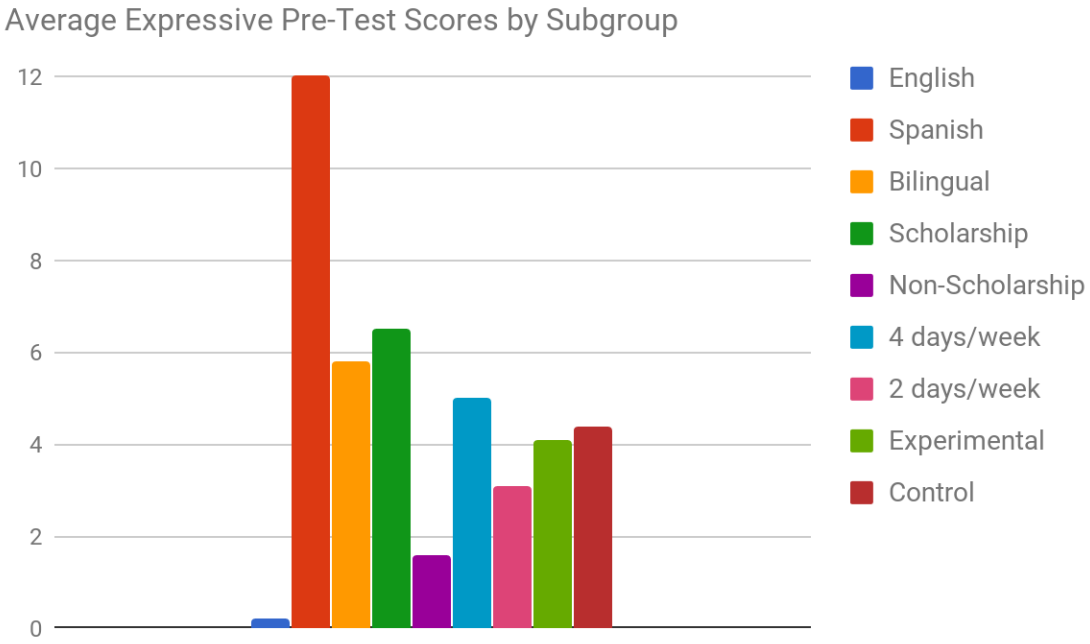
Expressive Pre-Intervention Test Results

For the expressive pre-intervention test, students' scores ranged from 0-14 correct responses out of 16 possible responses. Of the twenty students tested, nine students scored 0 correct answers in the expressive pre-test, all of which were native English speakers. The remaining two English-speaking students scored 1 correct response on the expressive pre-test. Therefore, the range in scores for English speaking students on the expressive pre-test was 0-1. The average score for an English speaker on the expressive pre-test was 0.2. For the four bilingual students tested, the range in scores for the expressive pre-test was 4-8, with an average score of 5.8. For the five Spanish-speaking students tested, the range in scores was 10-14, with an average score of 12. The mean pre-test expressive score for the entire group was five, the mode was 0, and the median score was 1. The mean score for the experimental group was 4.1, and the mean score for the control group was 4.4. The mean score for the scholarship students was 6.5, and the mean score for the non-scholarship students was 1.6. Of the scholarship students, five were native Spanish-speaking, two were bilingual, and four were native English-speaking. Of the non-scholarship students, two were bilingual and seven were native English-speaking; none were Spanish-speaking. The eight students who were enrolled in preschool two days

per week had an average score of 3.1 on the expressive pre-test, and the twelve students who were enrolled in preschool four days per week had an average score of 5.



This graph shows the expressive vocabulary scores of the students in each language group prior to the instructional interventions. As this was a Spanish vocabulary test, it was somewhat expected that students whose home language was Spanish would perform the best, and they did. Bilingual students' scores were lower than those of the native Spanish speakers, but higher than those of the native English speakers. All nine of the English speakers who scored zero correct answers on the expressive pre-test are represented by one data point, and the two remaining English speakers who scored one point are represented by the other data point. Likewise, the data points for the Spanish-speaking and bilingual groups also represent multiple students.

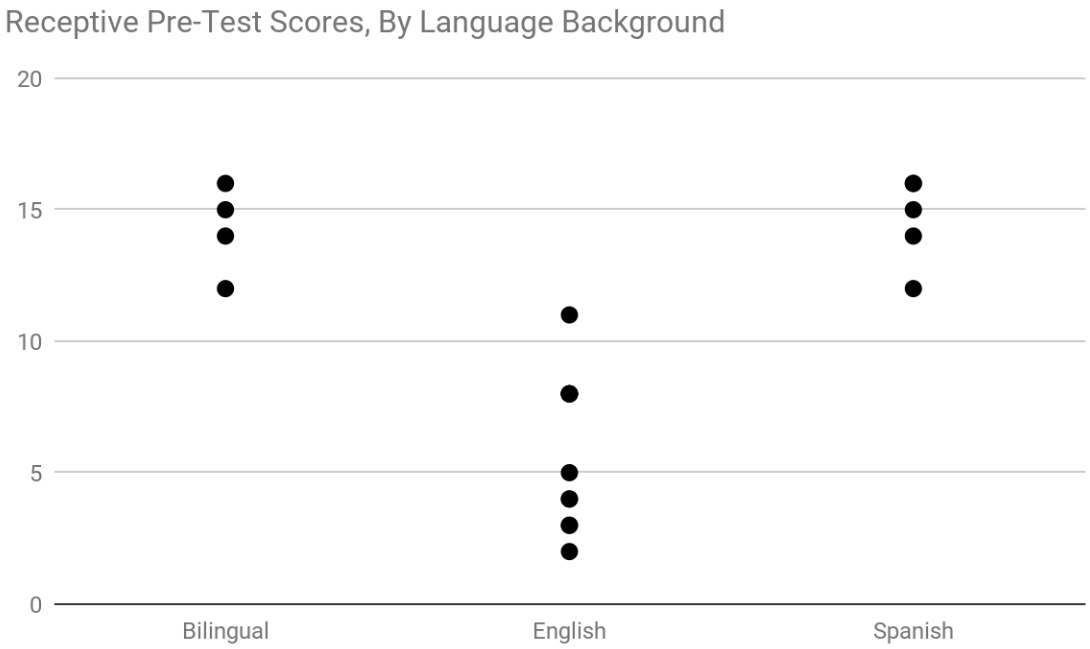


This graph shows the average expressive pre-intervention test score by subgroup. As expected, Spanish speakers had the highest average score, and the group of students receiving scholarships came in second, followed closely by the bilingual students. Eleven of the twenty participants were scholarship recipients, and of those eleven, five were Spanish-speaking, two were bilingual, and four were English-speaking. All five of the native Spanish-speaking students in the study were also in the scholarship group, which may explain why the scholarship group was the second-highest scoring group for the expressive vocabulary pre-intervention test.

Receptive Pre-Intervention Test Results

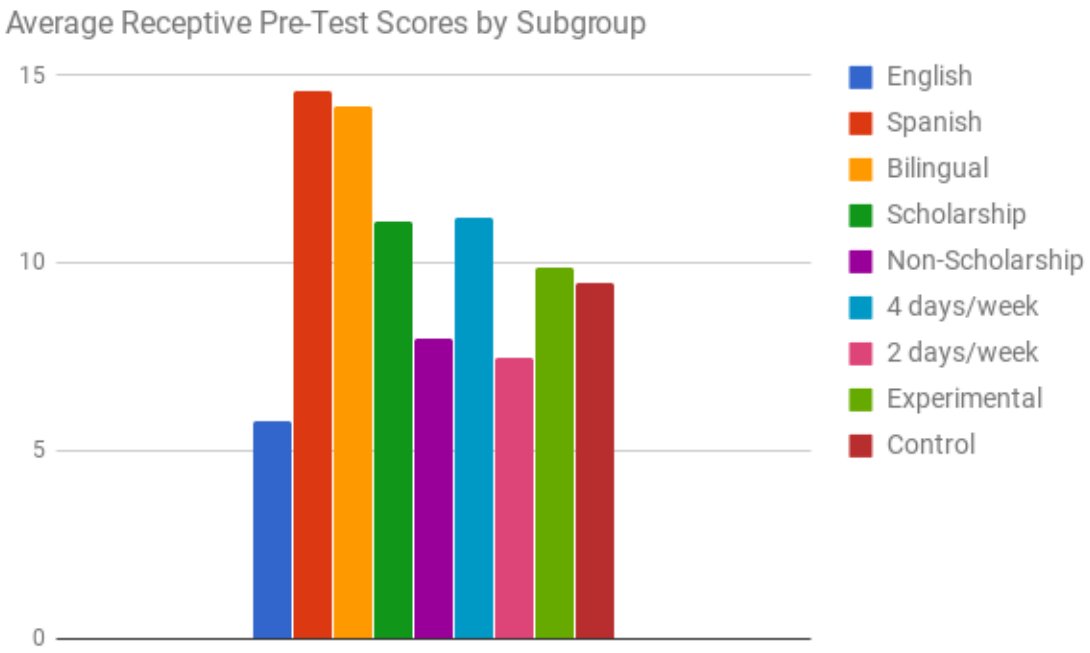
In the receptive pre-intervention test, students' scores ranged from 2-16 correct responses, out of 16 possible responses. As with the expressive pre-test, the English-speaking students scored lowest on the receptive pre-test, ranging from 2-11

correct responses, with an average score of 5.8 among English speakers, mode score of 8, and median score of 5. Three students scored a perfect 16, two of which were native Spanish-speaking students, and one of which was bilingual. The range in scores on the receptive pre-test for Spanish-speaking and bilingual students was 12-16 correct responses, with an average score of 14.4, mode score of 16, and median score of 15. The mean score for the experimental group was 9.9, and the mean score for the control group was 9.5. The mean score for the scholarship recipients on the receptive pre-test was 11.1, while the mean score for non-scholarship recipients was 8. The mean score for students enrolled four days per week was 11.2, and for students enrolled two days per week it was 7.5.



This graph shows the distribution of receptive vocabulary test scores prior to the instructional interventions. The Spanish-speaking students and bilingual students had nearly identical receptive vocabulary scores prior to the instructional interventions; the only

difference being that there were two Spanish-speaking students who scored sixteen correct answers, and only one bilingual student who did so. The English-speaking group had the largest range of scores for this test, with scores ranging from two to eleven. As students could potentially guess the correct answer by simply pointing to the correct image by chance, the results of the receptive vocabulary tests in this study are not as precise as the results of the expressive tests. Where in the expressive pre-intervention test the majority of English speakers scored zero correct answers, in the receptive test they scored an average of 5.8 correct answers. These results may also be an indication that receptive vocabulary knowledge develops before expressive vocabulary, resulting in higher average scores in all language groups.



This graph shows the average receptive vocabulary pre-intervention test scores by subgroup. As with the expressive pre-intervention scores, Spanish-speakers had the highest

average score. Bilingual students came in second, followed by students who were enrolled four days per week and scholarship students. Receptive scores were higher in general than expressive scores, even for English speakers, who again were the lowest scoring group. Comparing the expressive pre-intervention average scores to those of the receptive pre-intervention test, it is interesting to note that bilingual students' scores nearly matched those of the Spanish-speaking students, perhaps indicating that their receptive vocabulary skills are stronger than their expressive vocabulary skills at this point in their development.

These baseline results for expressive and receptive vocabulary show that each language group demonstrated different levels of vocabulary acquisition prior to the instructional interventions. Regarding the research question, (What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?) these pre-intervention test results suggest that although all of the students had been enrolled in the same class, receiving bilingual instruction throughout the school year (approximately seven months until the start of the study), their vocabulary was developing at different rates and in different ways. Thus, this study set out to explore the effect of musical-based Spanish vocabulary instruction on learners from all language backgrounds in an effort to find strategies which improve early literacy skills. The pre-intervention results were somewhat contradictory to other research in the field which indicated that children from Spanish-speaking and/or low-income backgrounds generally performed more poorly on vocabulary measurements; however, the unique nature of the educational setting, where children from different language backgrounds received bilingual instruction daily, along with the Spanish language

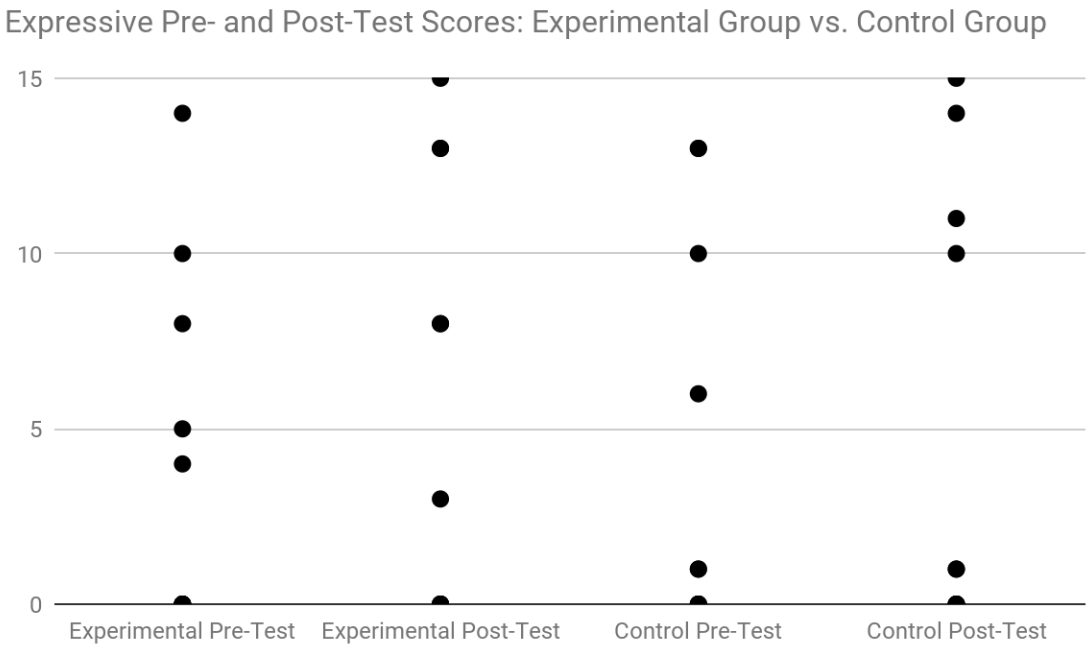
design of the experiment may explain why Spanish speakers and scholarship recipients were the highest-scoring participants on the pre-intervention tests (Furey 2011, O'Brien et al. 2014).

In summary, the pre-intervention expressive vocabulary test scores were low for English speakers (0-1 points), midrange for bilingual students (4-8 points) and were higher for Spanish-speaking students (10-14 points). The average expressive scores for the experimental group and control group were nearly identical, at 4.1 and 4.4 points, respectively. After Spanish-speakers, the highest scoring group for receptive vocabulary on the pre-intervention test were the scholarship recipients, five of which were Spanish-speaking, four bilingual, and two English-speaking. Regarding the receptive pre-intervention results, bilingual and Spanish-speaking students were nearly matched, with score ranges of 12-16, while the English-speaking group had a lower, larger range in scores, from 2-11. In general, receptive scores were higher than expressive scores. The next section offers an analysis of the post-instructional intervention results for expressive and receptive vocabulary, with careful examination of the results by language background, scholarship status, enrollment schedule, and control or experimental group status.

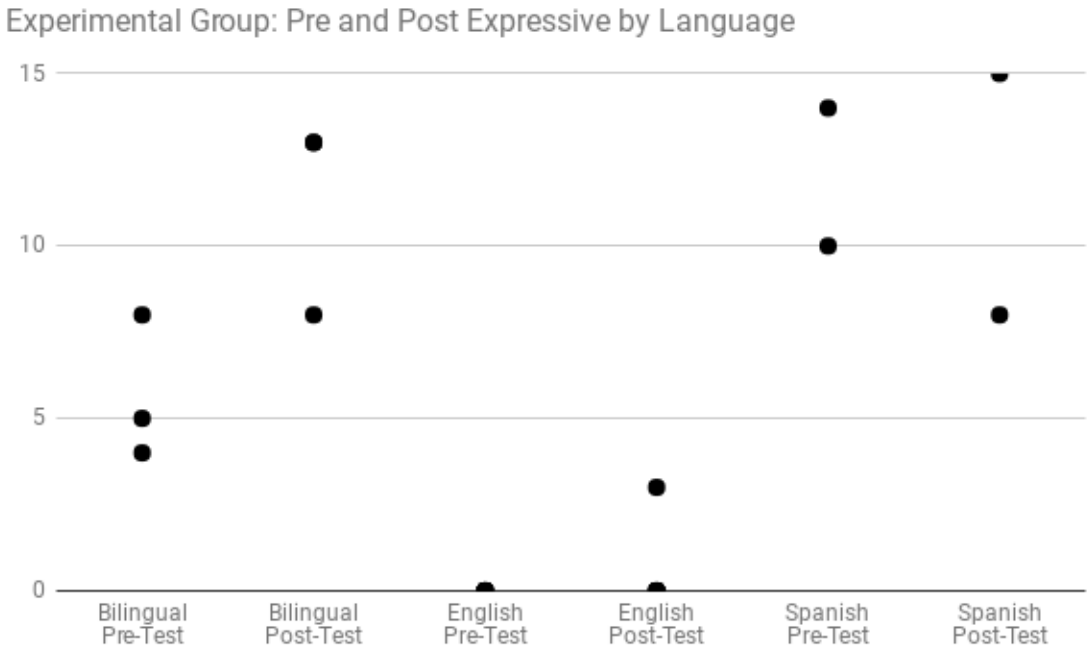
Expressive Post-Intervention Test Results

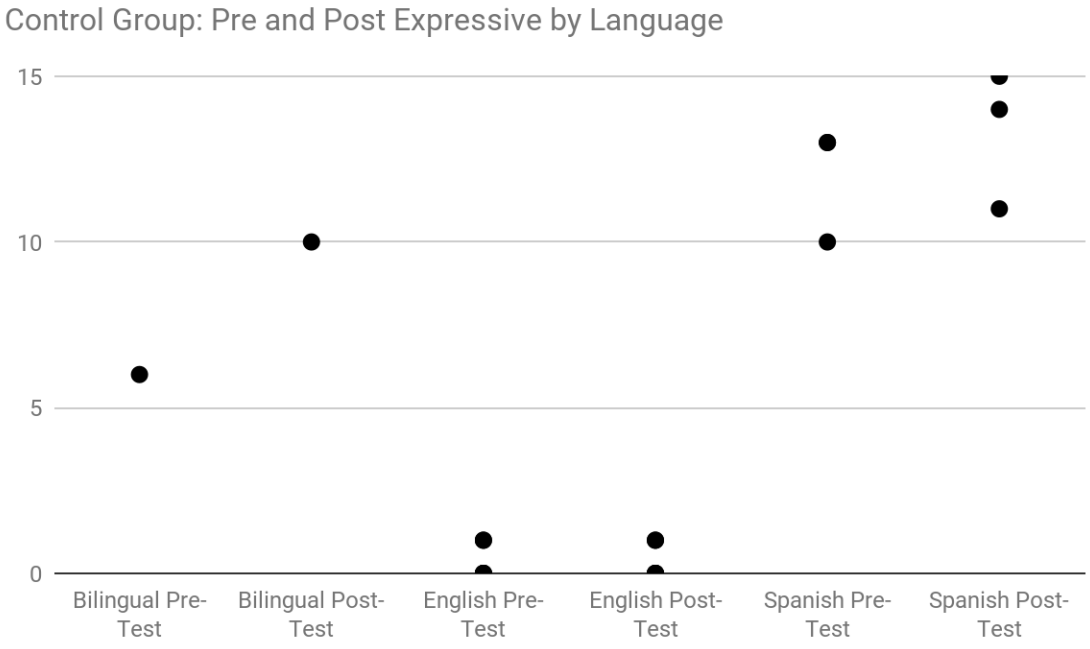
In the expressive post-intervention test, students' scores ranged from 0-15 correct responses out of a possible 16 responses. The overall mean score was 5.6, the mode was 0, and the median score was 2. Where in the expressive pre-test nine students scored zero correct responses, in the expressive post-test eight students scored zero. Again, as with the expressive pre-test, all of the students who scored zero were native English-speakers. Two

native English-speakers had a score of 1, and one English-speaker had a score of three. The range of scores for English speakers on the expressive post test was 0-3, where in the expressive pre-test it was 0-1. The average score for English-speaking students was 0.5. Bilingual students' range in scores was 8-13, with an average score of 11. Spanish-speaking students' range in scores was 8-15, with an average score of 12.6. The mean score for the experimental group was 6, and the mean score for the control group was 5.2. The experimental group included two native Spanish-speakers, three bilingual students, and five English speakers while the control group included three Spanish-speakers, one bilingual student, and six English speakers. The mean post-test expressive score for students who received scholarships was 7.9, while the mean for non-scholarship recipients was 2.8. Students who were enrolled in preschool four days per week scored an average of 6.4, while students who were enrolled two days per week scored an average of 4.4.



This scatter plot shows a comparison between the experimental group and the control group of the distribution of expressive pre- and post-intervention scores. In both the experimental group and the control group, the range in scores expanded upward in the post-intervention test, indicating that both instructional interventions had a positive impact overall on students' vocabulary acquisition. The experimental group's expressive pre-intervention score average was 4.1, while the group's post-intervention average was 6. In comparison, the control group's expressive pre-intervention average was 4.4, while their post-intervention average was 5.2. While these scores seem to show that the experimental intervention was more effective, the difference between control and experimental groups is not statistically significant.





These two scatter plots show the distribution of pre- and post-intervention expressive scores between the experimental and control groups, and by language subgroups. One notable difference is that in the experimental group, while four out of the five English-speakers' scores remained flat at zero, one student's score increased from zero to three. In the control group, four of the six English speakers' scores remained flat, while one score increased from zero to one, and another's score decreased from one to zero. However, there is no statistically significant difference for English speakers between the control and experimental groups, nor is there for Spanish speakers. For bilingual students, however, the gains in expressive scores were statistically significant in both the experimental and control group when compared to the gains made by their single-language counterparts. The control group included only one bilingual student, where the experimental group included three, therefore it is difficult to conclude whether or not the

musical intervention was in fact more impactful on the learning of bilingual students than the nonmusical intervention.

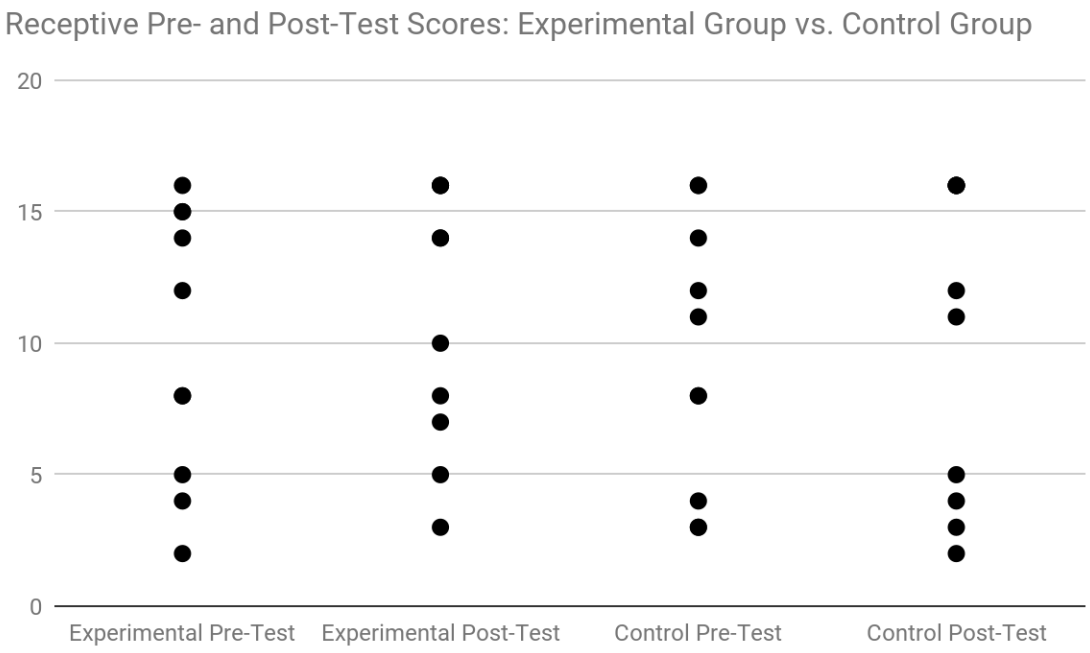
With respect to the research question, (What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?) the post-intervention results for expressive vocabulary indicate that both types of instructional intervention (musical and nonmusical) aided in expressive vocabulary acquisition for most students. The students in the experimental group who received the musical intervention demonstrated slightly better expressive vocabulary growth, with an average improvement of 1.9 points, while the students in the control (nonmusical) group had an average score improvement of 0.8. While not statistically significant, these results are compatible with previous research on expressive vocabulary development. In general, expressive vocabulary gains are lesser than receptive gains among children enrolled in two-way immersion programs (Barnett et al., 2007), suggesting a need for targeted expressive vocabulary acquisition strategies. While no students in this study were identified as having developmental delays, it may be useful for educators to note that music as an instructional strategy was found to have a positive impact on expressive vocabulary in children with developmental delays (Hoskins 1988). Regarding the growth in expressive vocabulary displayed by bilingual students and Spanish-speaking students, the songs used in the experimental group may also have offered additional aid in the preservation of cultural traditions, strengthening knowledge and interest around Spanish words (Li & Brand, 2009). Growth in expressive scores was also demonstrated by 50% of the children in the control (nonmusical) group, whose instructional

intervention consisted of being read song lyrics aloud (without music). The nonmusical technique used with the control group shared some characteristics with dialogic reading techniques, in that information was provided to students in an interactive manner, which Harris et al. found to have improved expressive language abilities (2011). While growth was demonstrated by students in both the experimental group and the control group, the results of this study, which show students in the experimental group scoring slightly higher on the post-intervention expressive test, also agree with the 2014 study by Ludke et al. which concluded that the combination of rhythm and melody, rather than rhythm alone, had a significant impact on expressive language acquisition. Therefore, the post-intervention expressive vocabulary results seem to suggest that the musical instructional strategy had a slightly greater positive impact on the expressive vocabulary acquisition of preschool students, however it is important to note that the nonmusical strategy also had a positive impact on expressive vocabulary acquisition.

Receptive Post-Intervention Test Results

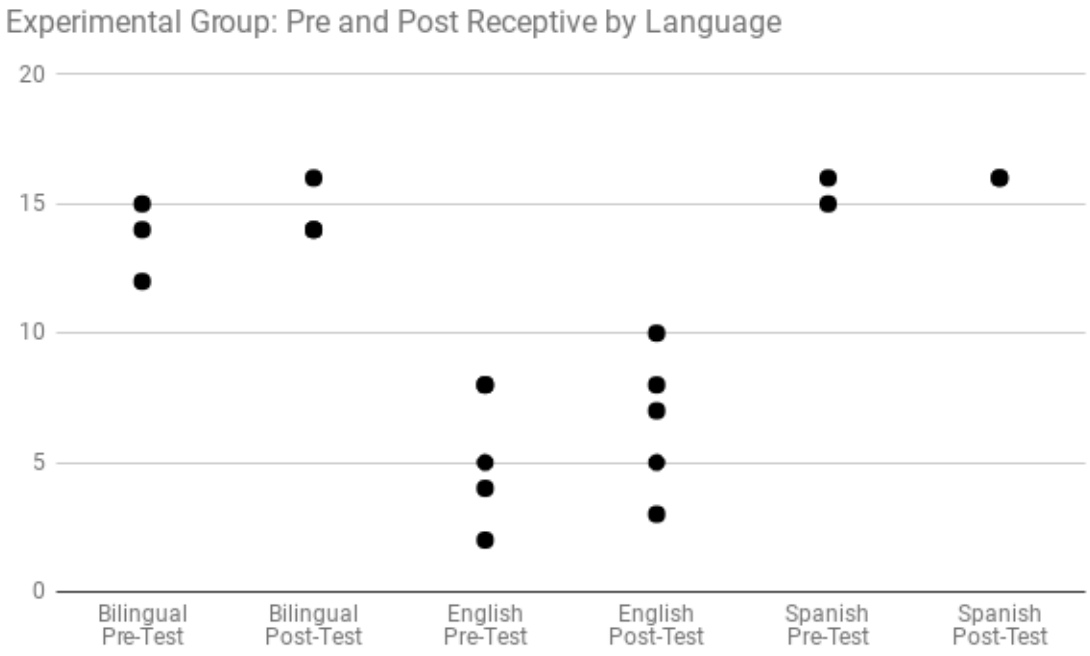
In the receptive post-intervention test, students' scores ranged from 2-16 correct responses out of a possible 16 responses. The overall mean score was 10.5, the mode score was 16 (five Spanish-speaking and two bilingual students scored 16), and the median score was 11.5. The English-speaking students scored lowest on the receptive post-test, ranging from 2-12 correct responses, with an average score of 6.4, bi-modal scores of 3 and 5, and median score of 5. Bilingual students ranged in scores from 14-16, with two students scoring 14 and two scoring 16; therefore the mean score for the bilingual group was 15. All five Spanish-speaking students scored 16 on the receptive post-test (on the receptive

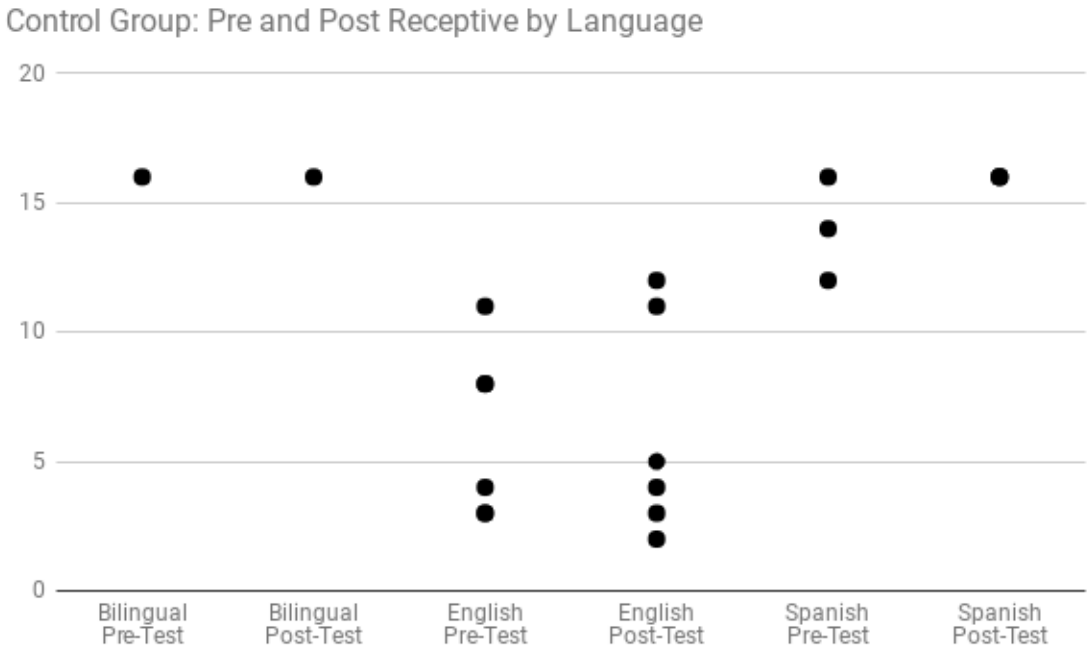
pre-test, the Spanish-speaking students' range of scores was 12-16). The mean score for the experimental group was 10.9, and the mean score for the control group was 10.1. Students who received scholarships had a mean score of 12.6 and students who did not receive a scholarship had a mean score of 7.9. Students enrolled four days per week had a mean score of 11.3, and students enrolled two days per week had a mean score of 9.3.



This scatter plot shows the distribution of receptive vocabulary pre- and post-intervention scores for the experimental group and control group. In the experimental group, four out of ten students had no change in receptive score, one decreased, and the remaining five had an increase in score. In the control group, three students had decreases in score, two did not change, and five had increases. Therefore, more students in the control group had decreases in their receptive scores than in the experimental group, and the average receptive score change for the experimental group was an increase by one point

while the average receptive score change for the control group was an increase in 0.6 points, however, these differences are not statistically significant.





These two scatter plots show the distribution of pre- and post-intervention receptive scores between the experimental and control groups, and by language subgroups. All Spanish speaking students in both the control and experimental groups scored a perfect 16 points on the post-intervention receptive test. English-speaking students in the experimental group had an average pre-test score of 5.4, and an average post-test score of 6.6, resulting in an average improvement of 1.2 points. English-speaking students in the control group had the same average for pre-test and post-test scores at 6.2 points. There was only one bilingual student in the control group, who scored a perfect 16 points on both the pre-intervention test and on the post-intervention test. The bilingual students in the experimental group had inconsistent receptive vocabulary results, with one decrease in score (from 15 to 14 points), one increase (from 12 to 16 points), and one remaining flat at 14 points.

Receptive vocabulary pre-intervention test results showed that receptive vocabulary knowledge was higher than expressive vocabulary knowledge; this complies with previous research by Barnett et al, which concluded that students in two-way immersion programs made gains in receptive vocabulary knowledge in the target language, but not in expressive vocabulary (2007). Bygrave's 1995 study demonstrated growth in receptive vocabulary for children who participated in a music program, however, the gains were made apparent at the end of the intervention, suggesting that a longer time period was necessary for the music intervention to have an impact on learning. The post-intervention receptive vocabulary results for this study seem less significant than the expressive results, suggesting that if the interventions had occurred more times over a longer time period, the impact on

receptive vocabulary could have been more significant. The object of this study was to determine what effect a musical Spanish vocabulary instructional intervention would have on the early literacy skill development of preschool students in a bilingual setting. While Bygrave noted that possessing a strong vocabulary is a precursor to becoming a strong reader, and that music is a practical tool to develop language skills, the musical intervention administered in this study seemed to be too short to be effective for receptive vocabulary acquisition (1995).

In summary, bilingual students in both the experimental and control group made statistically significant gains in expressive vocabulary. Both types of instructional interventions had a positive overall impact on students' expressive vocabulary acquisition. The experimental group's expressive pre-intervention score average was 4.1, while the group's post-intervention average was 6. In comparison, the control group's expressive pre-intervention average was 4.4, while their post-intervention average was 5.2. The majority of English speakers, (four out of five in the experimental group and four out of six in the control group, or 73% overall) had no change in expressive score, remaining flat at zero. Of the two Spanish speakers in the experimental group, one student demonstrated expressive language gains, the other had a decrease in expressive score; in the control group, all three Spanish speakers demonstrated expressive vocabulary gains. Both types of interventions had overall positive effects on expressive vocabulary acquisition, however, the musical intervention was correlated with slightly higher expressive scores than the nonmusical intervention. Regarding receptive vocabulary, 30% of students in the control group had decreases in their scores as compared to 10% of students with decreases in the

experimental group. Furthermore, the control group had an average score change of 0.6 while the experimental group's average score change was 1. Regarding language groups and receptive scores, 50% of English speakers in the control group had decreases in receptive vocabulary scores while the remaining 50% had increases; in the experimental group, 60% of English speakers had increases while 40% demonstrated no growth. All Spanish speakers in both the experimental and control groups had high receptive scores on the pre-intervention test, and in the post-intervention test, all Spanish speakers either increased their scores or were unable to demonstrate growth because they scored a perfect 16 on both the pre and post tests. For bilingual students in the experimental group, results varied, with one student increasing their receptive score, one decreasing, and one remaining flat. The single bilingual student in the control group scored 16 on both the pre-test and post-test, so growth could not be measured. The next section specifically looks at the change in scores between the pre- and post-intervention tests while examining growth or lack thereof in each type of vocabulary acquisition for the students in the experimental group, control group, and each language group as well as by scholarship status and enrollment schedule.

Analysis of Change in Scores: Expressive Test

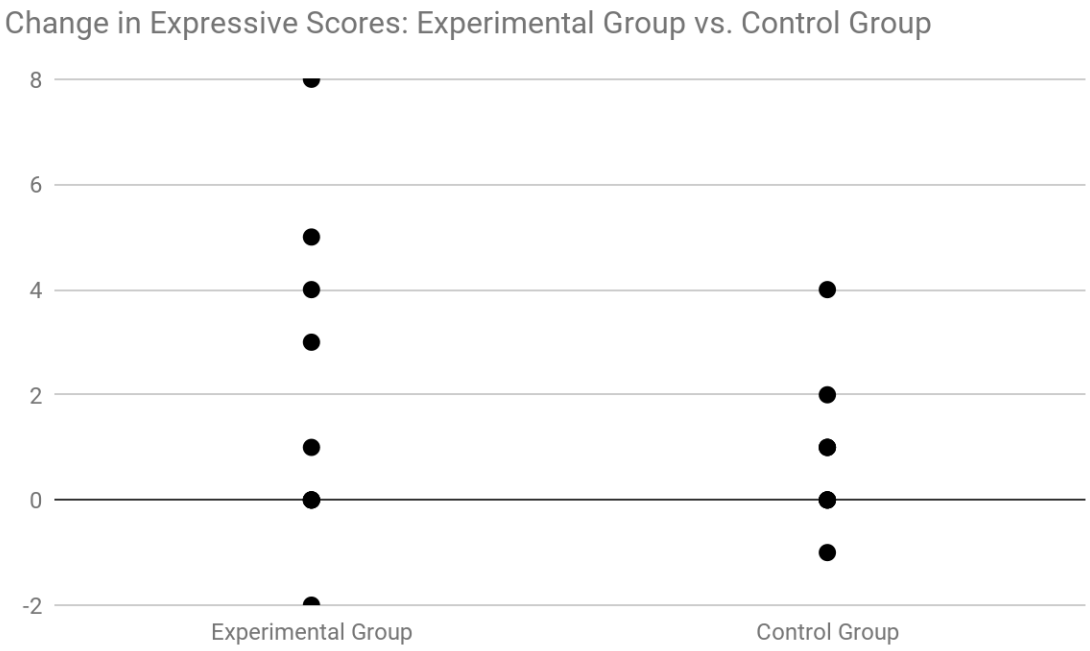
In order to determine what effect the music-based instructional intervention had on the vocabulary acquisition of the preschool students, the change in scores between the pre-test and the post-test was analyzed for the experimental group and the control group. Of the students in the experimental group taking the expressive vocabulary test, five students had an increase in scores, one student's score decreased, and four students' scores remained

flat. In the experimental group, one Spanish speaker's score increased by one point while the other Spanish speaker's score decreased by two points. The three bilingual students in the experimental group increased their scores by 8, 5, and 4 points. Four of the five English speaking students in the experimental group had no change in score between the pre- and post-tests (staying flat at zero correct responses) while one English speaking student had a score increase of three points. Of the four scholarship recipients in the experimental group, two had an increase in scores on the expressive assessment, one decreased, and one stayed flat. Of the students enrolled four days per week, four students had an increase in score on the expressive test, two students' scores had no change, and one student's score decreased. Of the students enrolled two days per week, one student's score increased, and two students' scores had no change. All of the students in the experimental group who had no change in expressive scores were English speakers and all of them scored zero on the pre-test and zero on the post-test. The average score change between the expressive pre-test and the expressive post-test for the experimental group was 1.9 points.

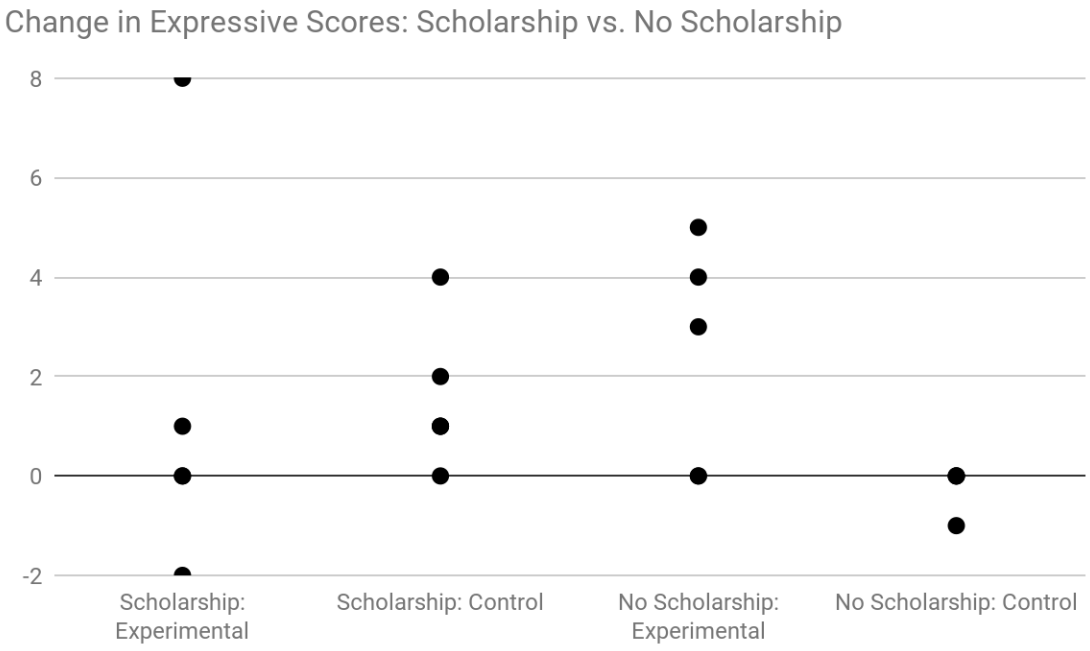
The control group's expressive scores were similar to those of the experimental group; of the students in the control group taking the expressive vocabulary test, five students had an increase in scores, one student's score decreased, and four students' scores had no change. In the control group, all three of the Spanish speakers' scores increased as well as that of the single bilingual student, by two, one, one, and four points, respectively. Of the English speakers in the control group, one student's score increased, one decreased, and four remained flat at zero. There were six scholarship recipients in the control group, five of whom had an increase in expressive score; the sixth scholarship student's expressive

score had no change. Of the four non-scholarship recipients, three had scores remain flat at zero, and one had a decrease in score. Of the students attending four days per week in the control group, two had an increase in expressive score, and three had no change. Of the students attending two days per week in the control group, three had an increase in expressive score, one decreased, and one had no change. All of the students in the control group who had no change in expressive scores were again English speakers; three of them scored both zero on the pre-test and post-test, and one of them scored one point on both the pre-test and post-test. The average score change between the expressive pre-test and the expressive post-test for the control group was 0.8 points.

The expressive score change for the control vs. experimental groups is not statistically significantly different. Regarding the expressive score change in relationship to the other factors in the experiment, scholarship status and enrollment don't show a significant difference, but language background does. Students in the bilingual groups had statistically significantly greater change in their expressive score than did their single language counterparts.

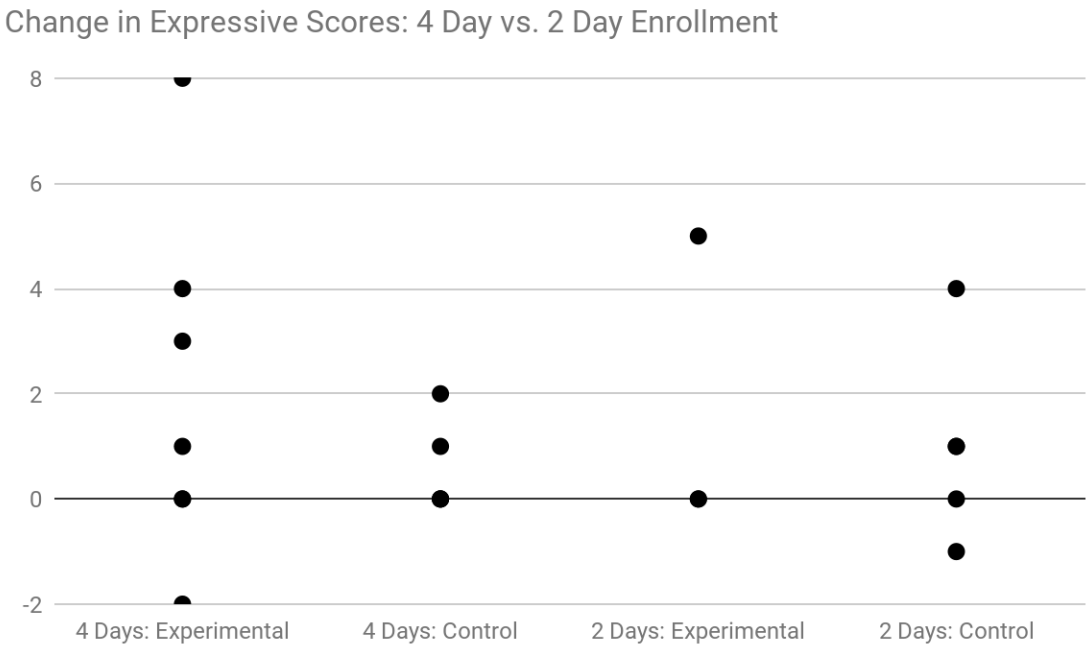


Each data point on this scatter plot represents a student's change in expressive vocabulary score between the pre-intervention test and the post-intervention test. If a student's score increased, the data point appears above the zero line. If a student's score decreased, the data point appears below the zero line. Multiple students' change in scores may be represented by the same data point. For example, there were four students in the experimental group who had no change in expressive scores, and are represented by the data point on the zero line. There are also four students in the control group whose change in score was zero, and three students whose score increased by one point. While the average change in expressive score for the experimental group was 1.9, while for the control group it was 0.8, this is not a statistically significant difference.

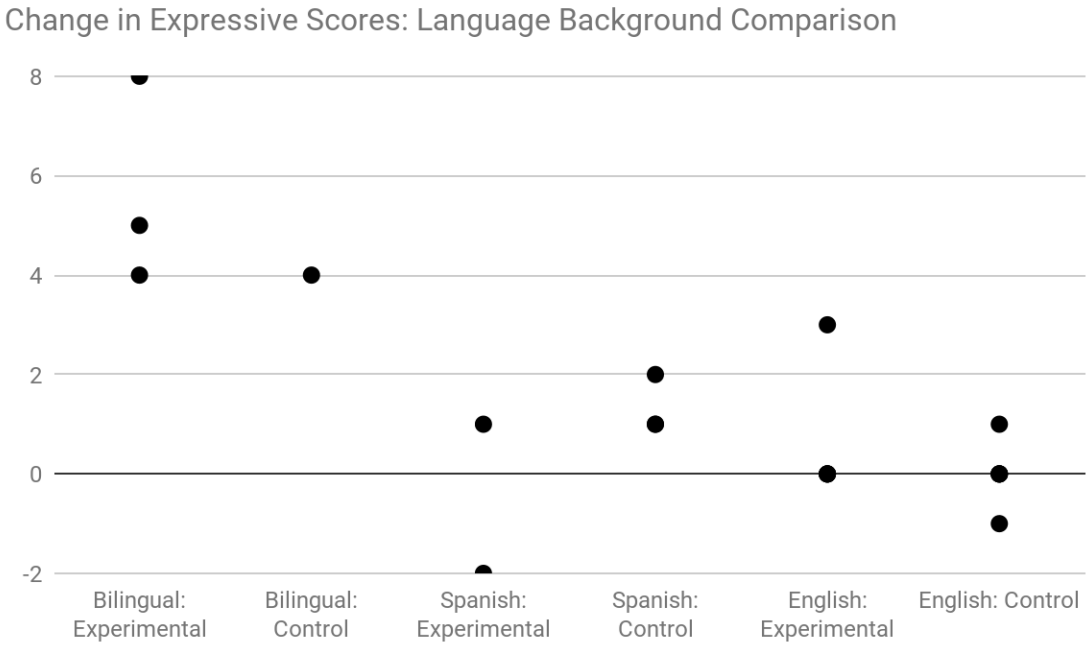


This graph compares the expressive score changes of scholarship recipients and students who did not receive scholarships in the control and experimental groups. Families of students who received a scholarship expressed a financial need and those students likely lived in low-income situations. The average change in expressive scores for the scholarship recipients in the experimental group was 1.4, while for the control group it was 1.5. Perhaps more significant was the difference for non-scholarship recipients; those in the experimental group had an average expressive score change (increase) of 2.4 points, while those in the control group had an average change (decrease) of -0.25 points. Of the non-scholarship recipients in the experimental group, two were bilingual and three were English-speaking, while in the control group, the non-scholarship recipients were all English-speaking. These results could indicate that, while scholarship status itself did not seem to impact expressive scores, non-scholarship recipients, who were more likely to be

bilingual or English speaking, were more likely to have increases in expressive scores if they received the musical intervention than if they received the non-musical intervention.



This scatter plot compares the changes in expressive scores between students in the control group and those in the experimental group based on four day per week enrollment and two day per week enrollment. The average expressive score change for students in the experimental group enrolled four days per week was an increase in 2 points, while for those in the control group it was an increase of 0.6 points. The average expressive score change for students in the experimental group enrolled two days per week was 1.7 points (increase) while for those in the control group it was 1 point (increase). These results seem to indicate that for students enrolled four days per week, the musical intervention was more effective for expressive vocabulary acquisition than the non-musical intervention.



This scatter plot compares the changes in expressive vocabulary scores for the experimental group and control group while showing the distribution of score changes among language subgroups. For example, the one bilingual student in the control group had an improvement of four points between the pre-intervention expressive vocabulary test and the post-intervention test. As with all of the scatter plots in this report, each point on this graph may represent more than one student; for example there were four English-speaking students in the experimental group whose change in expressive vocabulary score was zero and all four students are represented by a single plot point. As a group, bilingual students in both the experimental group and the control group had the most significant score improvements in expressive vocabulary. On average, bilingual students in the experimental group had expressive score increases of 5.6 points, while the one bilingual student in the control group had an expressive score increase of 4 points. For English

speakers in the experimental group, the average change in expressive score was 0.6 points, while for English speakers in the control group the average change was 0. For Spanish speakers in the experimental group, the average expressive score change was -0.5, while for Spanish speakers in the control group it was 1.3. Therefore, bilingual students on the whole acquired more expressive vocabulary, while those in the experimental group acquired on average 1.6 more words than those in the control group. This result, however, may be tentative due to the fact that there was only one bilingual student in the control group.

In summary, expressive score gains were slightly higher for students in the experimental group than for students in the control group (on average, 1.1 points higher). Additionally, of the 9 non-scholarship recipients, 7 of which were English-speaking and 2 of which were bilingual, were more likely to demonstrate gains in expressive scores if they received the musical intervention. The experimental group had the largest range of score adjustments, from an improvement of eight points to a decrease in score of two points. For the change in receptive score this was reversed; in this case the control group had the widest range in scores, from an improvement by eight points to a drop in score by six points. Regarding enrollment schedule, students enrolled four days per week and participating in the musical intervention were able to produce, on average, 1.4 more words in the expressive vocabulary post-intervention test than those enrolled four days per week and participating in the nonmusical intervention. The most statistically significant result related to expressive vocabulary acquisition was seen among bilingual students in both the experimental group and control group, who demonstrated more gains than their single

language counterparts. On average, bilingual students improved their expressive scores by 5.3 points, while English-speaking students' average expressive score change was .27 and that of Spanish-speaking students was 0.6, across both experimental and control groups. Therefore, bilingual students on the whole acquired more expressive vocabulary, while those in the experimental group acquired on average 1.6 more words than those in the control group. This result, however, may be tentative due to the fact that there was only one bilingual student in the control group.

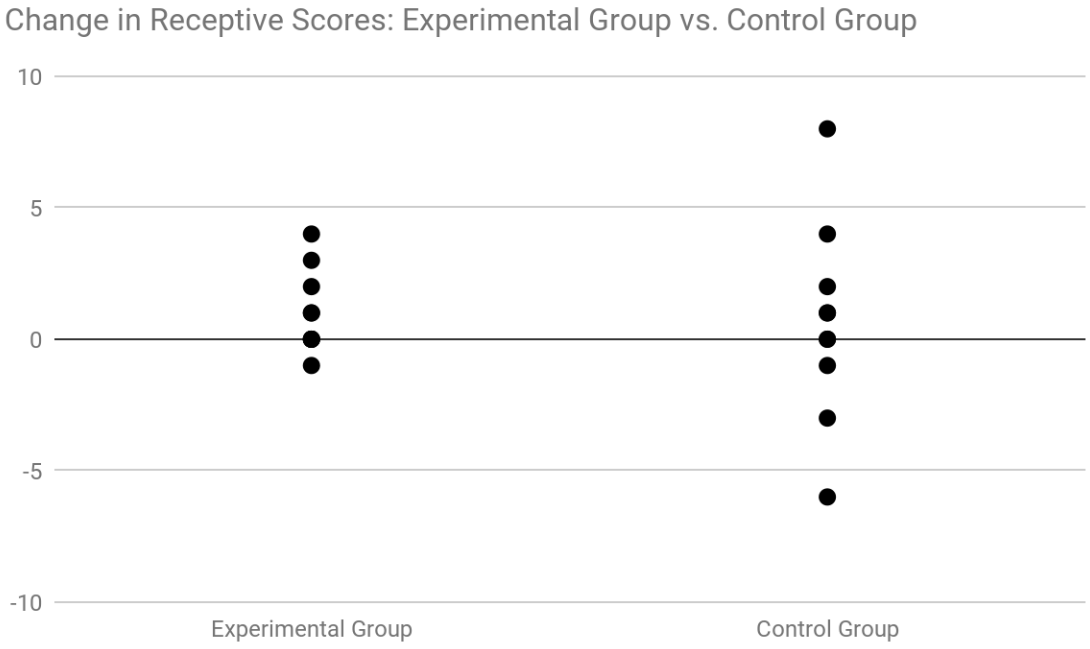
Analysis of Change in Scores: Receptive Test

The receptive vocabulary results were also analyzed by comparing the control and experimental groups' pre-test and post-test receptive scores, and by looking for trends in the subgroups of language background, scholarship status, and enrollment schedule. Of the students in the experimental group, five students had an increase in scores on the receptive test, one student's score decreased, and four student's scores had no change. Of the four students who had no change in scores, one was Spanish-speaking, one was bilingual, and two were English-speaking. Of the two Spanish-speaking students in the experimental group, one had an increase in score on the receptive test of one point, while the other had no change, scoring 16 on both the pre- and post-tests. Of the three bilingual students in the experimental group, one student had an increase of four points in receptive vocabulary score, one had a decrease of one point, and the third bilingual student had no change in score, having scored 14 on both the pre-test and post-test. Of the five English speaking students in the experimental group, three had an increase in scores on the receptive test of one, two, and three points, and two students had no change, one of whom scored five

points on the pre- and post-tests, and the other scoring eight points on the pre- and post-tests. Five students in the experimental group were scholarship recipients. Three of them increased their receptive score, and two had no change. Of the five non-scholarship recipients, two had increases in scores, one had no change, and one had a decrease in score. Of the seven students enrolled four days per week in the experimental group, three had increases in receptive scores, two had no change, and one had a decrease. Of the three students enrolled two days per week, two had increases in receptive scores, and one had no change. The average receptive score change for the experimental group was 1.

Of the students in the control group, five had increases in their receptive scores, two had no change, and three had decreases, while the experimental group had five increases, four students with no change, and one decrease. There were three Spanish-speaking students in the control group, two of whom increased their receptive scores, and one of whom had no change, scoring 16 on both the pre- and post-tests. All three Spanish-speaking students scored 16 on the post-test, two of them increasing their scores by two and four points. There was one bilingual student in the control group whose receptive score remained flat at 16 points on the pre- and post-tests. There were six English-speaking students in the control group, three of whom had increases in receptive scores by one, one, and eight points, and three of whom had decreases by one, three, and six points. Of the six scholarship recipients in the control group, three had increases in receptive scores, one had a decrease, and two had no change. Five students in the control group attended four days per week, and five attended two days per week. Three of the students attending four days per week had increases in their receptive scores, while one had

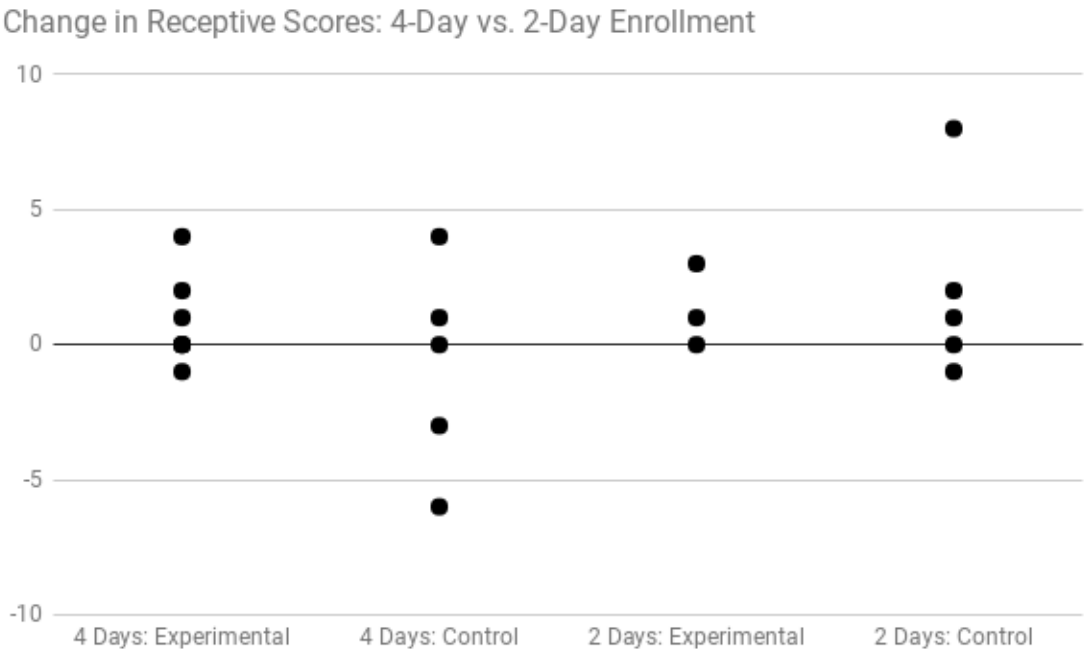
a decrease and one had no change. The students attending two days per week showed similar results, with three increases in receptive scores, one decrease, and one student's score remaining flat. The average receptive score change for the control group was 0.6.



This scatter plot shows the change in receptive scores between the pre-intervention test and the post-intervention test, comparing the score changes of the experimental group with those of the control group. 50% of the students in the experimental group had positive score changes, as well as 50% of the students in the control group. Only one student in the experimental group had a score decrease, while four had no change in score, where in the control group three students had score decreases and two had no change in receptive score. The student with the most significant improvement in receptive score was in the control group, with an increase by eight points. This representation of score change could indicate a more consistent, while conservative, upward trend in receptive scores among students in

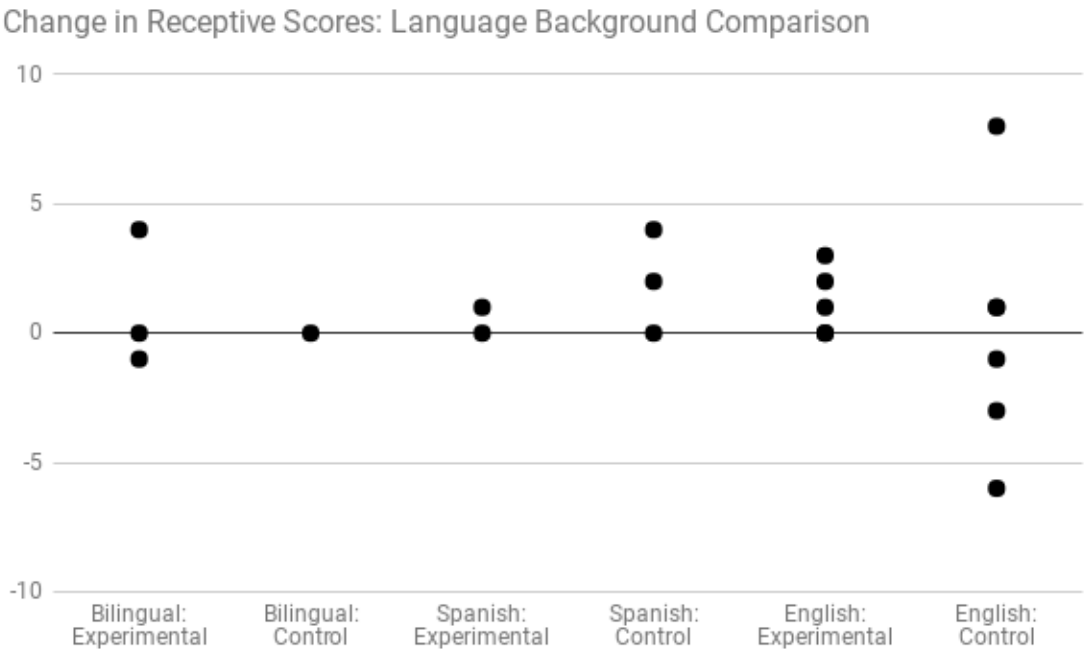
the experimental group, where the students in the control group had a wider range of results and seemed to have more outliers.

This graph compares the changes in receptive scores among scholarship recipients and those who did not receive scholarships in both the experimental and control groups. Scholarship recipients in the experimental group had an average receptive score change of 1.2, while scholarship recipients in the control group had an average receptive score change of 1.8. Non-scholarship recipients in the experimental group had an average receptive score change of 0.8 while those in the control group had an average change of -1.25. It is unlikely that these results are statistically significant.



This scatter plot compares receptive score changes for students enrolled four days per week and those enrolled two days per week in both the control group and experimental group. Students enrolled four days per week in the experimental group had an average receptive score change of 0.9 while those enrolled four days per week in the control group had an average change of -0.8. Students enrolled two days per week in the experimental group had an average receptive score change of 1.3 while those in the control group had an average change of 2. These results could indicate that students enrolled four days per week were more likely to improve their receptive vocabulary skills if receiving a musical intervention than a non-musical intervention, however, those enrolled two days per week demonstrated the opposite effect. Those enrolled four days per week in the control group demonstrated an average decrease in receptive scores, perhaps suggesting that more

repetition with a nonmusical intervention was in fact damaging to students' receptive vocabulary skills.



This scatter plot shows the changes in receptive vocabulary scores among students in the control group and those in the experimental group, subdivided by language background. On the whole, few students had decreases in receptive scores (only 4 students out of the entire participant pool of 20 students); three of which were English speakers and one of which was a bilingual student. The most notable result demonstrated in this plot can be seen in the English control group; while this group contained the student with the most significant receptive score increase (8 points), 50% of the students in this group also had decreases in receptive scores, resulting in an average receptive score change of zero. In comparison, the English speakers in the experimental group had an average receptive score change of 1.2. Spanish speakers in the experimental group had an average score change of

0.5 while those in the control group had an average change of 2. The results for Spanish speakers seem to suggest that the non-musical intervention had a more positive impact on receptive vocabulary acquisition than the musical intervention, however, it is important to note that of the two Spanish speaking students in the experimental group, one scored 16 on the pre-intervention test and 16 on the post-intervention test, while the other Spanish-speaking student scored 15 on the pre-test and 16 on the post-test. In the control group, Spanish speakers started out with lower receptive scores, scoring 12, 14, and 16 points on the pre-intervention test, and 16, 16, and 16 on the post-intervention test. While the bilingual students in the experimental group included one student with a receptive score decrease of one point, the average receptive score change for this group was 1. There was only one bilingual student in the control group and this student's score did not change between the pre-intervention test and the post-intervention test, remaining flat at a perfect 16 points.

In summary of receptive score changes, half of the students in the control group and half in the experimental group demonstrated receptive vocabulary growth, however, in the control group 30% of students demonstrated lower receptive scores in the post-intervention test compared to 10% in the experimental group. Scholarship status did not seem to be correlated to any significant differences in receptive vocabulary scores. Regarding enrollment schedule, students enrolled four days per week and receiving the musical intervention demonstrated, on average, an improvement in receptive scores, while those enrolled four days per week receiving the non-musical intervention, on average, demonstrated decreases in receptive scores. Regarding students from different language

backgrounds, a notable observation came from the English speakers, those of whom in the control group had an average receptive score change of 0, while those in the experimental group learned, on average 1.2 words. All five Spanish-speaking students (two in the experimental group and 3 in the control group) scored a perfect 16 points on the post-intervention receptive test, suggesting that both the musical and nonmusical interventions were sufficient; it is important to note, however, that Spanish-speaking students in the experimental group demonstrated an average growth of 0.5 word while those in the control group demonstrated an average growth of 2 words. Receptive vocabulary results for bilingual students varied, with score changes in the experimental group of -1, 0 and 4 points, while the single bilingual student in the control group scored 16 on both the pre- and post-intervention receptive test.

The next section highlights the most statistically significant results in the study and discusses them in relation to the research question.

Statistical Significance and Summary

In summary, the average score changes for the expressive and receptive tests were higher in the experimental group; for the expressive test the experimental group's average score change was 1.9, while in the control group it was 0.8, and for the receptive test the experimental group's average score change was 1 while the control group's average was 0.6. However, these score differences are not statistically significant. The only statistically significant result was demonstrated on the expressive test by the bilingual students who demonstrated a significantly greater improvement in their scores than their single language counterparts. This was true for bilingual students in both the experimental group and the

control group, however, it is important to note that there were three bilingual students in the experimental group and only one in the control group. These results suggest that bilingual students may have different rates and processes of expressive vocabulary development than their single language counterparts; this idea will be further discussed in chapter five.

With respect to the research question, What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?, the analysis of results demonstrates that both a non-musical instructional method as well as a music-based instructional method can have a significant impact on the developing expressive vocabulary of bilingual students when compared to their single-language counterparts. Furthermore, the musical intervention had, in general, a more positive impact on the expressive and receptive vocabulary of students across all language backgrounds, enrollment schedules, and scholarship status, however these results were not found to be statistically significant. As discussed in earlier chapters, having a large and robust vocabulary is an indicator of literacy, therefore incorporating more music-based activities into classroom instruction, along with other language-rich activities, may prove beneficial to literacy development. The following table is shows the complete set of results from the study.

Table of Results

Student ID	Exp. Pretest	Exp. Posttest	Exp. Score Change	Rec. Pretest	Rec. Posttest	Rec. Score Change	Exp. or Control Group	Lang-uage	Schola-rship	Enroll-ment
140	4	8	4	15	14	-1	Exp.	Biling.	No	4 days
750	5	13	8	12	16	4	Exp.	Biling.	Yes	4 days
250	0	0	0	8	8	0	Exp.	Eng.	Yes	4 days
105	0	3	3	8	10	2	Exp.	Eng.	No	4 days
218	0	0	0	5	5	0	Exp.	Eng.	No	4 days
620	14	15	1	16	16	0	Exp.	Span.	Yes	4 days
450	10	8	-2	15	16	1	Exp.	Span.	Yes	4 days
229	8	13	5	14	14	0	Exp.	Biling.	No	2 days
390	0	0	0	2	3	1	Exp.	Eng.	Yes	2 days
205	0	0	0	4	7	3	Exp.	Eng.	No	2 days
194	0	0	0	8	5	-3	Cont.	Eng.	Yes	4 days
890	1	1	0	11	12	1	Cont.	Eng.	No	4 days
144	0	0	0	8	2	-6	Cont.	Eng.	No	4 days
168	13	15	2	12	16	4	Cont.	Span.	Yes	4 days
178	13	14	1	16	16	0	Cont.	Span.	Yes	4 days
950	6	10	4	16	16	0	Cont.	Biling.	Yes	2 days
155	0	1	1	3	11	8	Cont.	Eng.	Yes	2 days

118	1	0	-1	3	4	1	Cont.	Eng.	No	2 days
550	0	0	0	4	3	-1	Cont.	Eng.	No	2 days
235	10	11	1	14	16	2	Cont.	Span.	Yes	2 days

CHAPTER FIVE

Discussion

Reflections on Learning as a Result of the Study

When I set out to answer my research question, What effect does a Spanish vocabulary-through-music instructional intervention have on the development of early literacy skills of preschool students in a bilingual setting?, I assumed that the students receiving a musical intervention would have different outcomes than the students receiving the nonmusical intervention. I wasn't sure how the outcomes would be different, but I was convinced the two instructional strategies would yield different results. I will even say, at the risk of admitting my own bias, that I hoped the musical intervention would correspond to increased vocabulary acquisition, as music was a tool I had often used in my own teaching and had believed to be effective. While there were differences in the outcomes among student groups, these differences were delineated along lines I hadn't drawn during my design of the study, but which appeared on their own as I discovered trends in students' learning. Between the control group receiving a nonmusical instructional intervention, and the experimental group receiving a musical intervention, no statistically significant differences were found regarding vocabulary acquisition. There were small variations in outcomes between the groups, which perhaps could result in statistically significant differences if the study were to be repeated with a larger group or over a longer period of time. However, there was one outcome which I hadn't been expecting which proved to be statistically significant; the students in the study who were identified as bilingual learners,

rather than native Spanish-speaking or native English-speaking learners, demonstrated a significantly greater improvement on their expressive language scores than their single language counterparts, regardless of their participation in the control or experimental groups. When I designed the study and began my research, I was focused on the instructional strategies as the main variable in vocabulary acquisition outcomes. After conducting the study, however, I learned that student language background was the variable most likely to impact vocabulary acquisition outcomes. This discovery has created implications for differentiation of instruction as decided by language background.

Another major area of learning which surfaced as a result of this study is the logistical challenge of conducting research on students, especially preschool students in a part time program. Some of the students were enrolled only two days per week, others were enrolled four. In addition to limited enrollment, some students were absent for part or all of any given instructional session. Another challenge has to do with the age and attention span of the students, who were four and five-years-old. At times, they wanted to play, talk, or simply lost interest and were looking around the room. These behaviors made me question the age appropriateness of the instructional interventions. The Sing ‘n Speak Spanish curriculum is designed for students in grade school, starting in kindergarten. I thought that using it with pre-kindergarten students would require some adaptation, but that it would still be effective. Looking back, I think that a higher level of interaction during the instructional interventions would have benefitted students. For example, teaching intentional actions along with the music, whether in the style of Total Physical Response, creative movement/dance, or charades-type acting, would have enhanced the learning

experiences for the young students. Additionally, using realia rather than picture cards may have been more effective. Given more time and resources, I think that adding an activity to each instructional intervention during which the students played with real objects representing the new vocabulary words would have increased enjoyment and also vocabulary acquisition.

A third major area of learning is related to student behavior and teacher instructional choices in response to that behavior. In preschool settings, and in many other educational settings, behavior is a concern for teachers. Students safety, including physical and emotional wellbeing, is typically a first priority for teachers, while academic learning is a close second. Throughout the course of my study, I found myself making decisions in response to student behavior which affected my instruction. For example, I would set behavioral expectations by modeling how I expected students to sit, where I wanted them to look, and how I wanted them to participate. This all took time. During instructional sessions in which students were particularly talkative, active, or playful, I chose to pause instruction, reset expectations, then continue. While taking time to ensure that behaviors stayed within certain limits made me feel comfortable as an instructor, I also realize that these pauses may have detracted from learning time. Furthermore, the behavioral expectations such as sitting cross-legged on the floor, being silent unless it was time to sing or answer a question, and looking at pictures that I had prescribed for instruction may have been helpful for my own sense of order and organization, but may have in fact limited student learning. Some students may benefit from a more interactive style of learning in which they engage with materials and peers in play and conversation. The instructional

sessions in this study were meant to be engaging by using music (for the experimental group), picture cards, and a sort of narration or storytelling (the reading of the song lyrics without use of melody or instrumentation), however the style of instruction was very much teacher-directed and could be interpreted as passive on the part of the learner.

Circling Back to Previous Research

As the process of this study proceeded and came to an end, and upon analyzing and reflecting on the results, several areas of research which had contributed significantly to the design of and intention behind the study can be resurfaced as an additional framework through which the results of this study can be discussed. These areas of research include the importance of vocabulary development as it relates to early literacy; educational equity relationships between bilingualism, poverty, and vocabulary acquisition; and teaching strategies for promoting vocabulary acquisition and literacy among linguistically diverse children.

As Christ & Wang note (2010), even before young children learn to read, the number and variety of words they know can influence their literacy development as well as other areas of academics. Schwartz (2014) similarly claims that successful communication and academic growth depend greatly on a well-developed vocabulary, while Harris et al. (2011) emphasized that developing this vocabulary as well as knowledge of syntax early on is key to literacy and school success. Carter & McCarthy (2013) agree with this assessment, calling word knowledge the most important factor in reading ability. Knowing that a strong vocabulary base is a crucial platform from which students launch into literacy, I decided to make vocabulary acquisition the main instructional goal of this study, with the

hope of adding information about effective vocabulary instructional strategies to the research field.

Teachers have used many different instructional strategies for teaching vocabulary, including musical strategies, and strategies involving movement, storytelling, realia, and other types of interactive teaching methods. Christ and Wang (2010) found that vocabulary acquisition was boosted through an intentional variation of instructional strategies, allowing children to interact with the words in different contexts such as song, story and dramatic play. Other vocabulary teaching methods depend entirely on experiential learning, such as the Language Experience Approach, in which students acquire words through field trips, movies, and cross-cultural activities (Jiuhan, 2013). For children with developmental delays, music was found to have a positive impact on expressive vocabulary skills (Hoskins, 1988). Ludke et al., (2014) specifically studied the link between musical ability and foreign language ability and found that a listen-and-sing strategy supports expressive language skills in the second language, and that musical pitch perception is related to accurate pronunciation in the second language. Ludke et al., (2014) noted that beginning language learners especially may benefit from a musical approach as pitch changes in melody often correspond to transitions between syllables, which assists with word segmentation.

The literature review also discussed issues of educational equity as they related to vocabulary acquisition among students of diverse backgrounds, especially students whose home language is not English and those who are living in poverty. Harris et al., (2011) found that children from disadvantaged homes are exposed to much less vocabulary than

their more advantaged peers, which had a negative impact on their language acquisition and literacy development. Similarly, Furey (2011) reported that children from low-income households had lower expressive vocabularies than their middle-income peers. O'Brien et al., (2014) reported that in addition to children living in poverty, those who were learning English as a second language showed gaps in vocabulary during the early childhood years. Poor vocabulary makes developing literacy skills more difficult, and children who are learning English as a second language or who live in poverty are more likely to have lower vocabulary scores than their upper income, English-only speaking peers.

Dual immersion programs, which blend students from two different language backgrounds (usually English and a target language, such as Spanish) into one classroom where they are being taught both languages by their teachers, present a promising opportunity for closing or shrinking the vocabulary gap. In the dual immersion approach, bilingualism is seen as an asset, whereas in an English Language Learner approach, students are seen to have a deficit of not knowing English and having to learn the language to catch up. In the Ethnic Educator Approach, Gonzalez (2012) promotes the implementation of socio-constructivism and social justice ideology in order to truly value and celebrate the cultural and linguistic diversity of students. There are many benefits to bilingualism and dual immersion education, including higher academic achievement (Potowski, 2004) and postponement of dementia in adulthood (Bilingualism, 2011). Where much of previous research has focused on whether or not literacy in minority students' home language supports the development of literacy in the second language (usually English), future research may be better suited for the justice-focused values related to

developing the home language and supporting cultural knowledge and practices as described by Gonzalez (2012).

Implications of the Study

This study focused on a music-based instructional strategy and its effectiveness in the vocabulary acquisition of Spanish-speaking, English-speaking, and bilingual students in a dual immersion preschool setting. Identifying and implementing effective instructional strategies for the teaching of vocabulary to young pre-readers has huge implications for their success in school, and finding strategies that work to close gaps based on income and language background is of particularly urgent nature. This study included 20 preschool students and while it did not confirm that a musical strategy is more effective than a nonmusical one, the study did produce findings that help to illuminate the benefits of bilingualism from an early age. The participants in this study came from three different language backgrounds: English-only, Spanish-only, and bilingual language backgrounds. In this study, the bilingual students in both the experimental group and the control group demonstrated a statistically significant greater improvement on their expressive vocabulary scores than their single language counterparts. This result indicates that regardless of the method of instruction, bilingual students' capacity for learning Spanish vocabulary was greater than students with a monolingual background in either Spanish or English, leading to additional questions for future research: What is different about the way that bilingual children learn new vocabulary as compared to monolingual children? Do pre-readers learn vocabulary differently than children who are literate? This study took place over a short

term research period of approximately 6 weeks. What is the long term capacity for bilingual students' vocabulary retention, and that of monolingual students?

The statistically significant results of this study were found with expressive vocabulary acquisition, not receptive vocabulary. Bilingual students showed greater improvement in their expressive vocabulary scores, which means that they were able to draw from memory words learned during the instructional sessions and produce those words orally when prompted with a picture. The expressive vocabulary task is more difficult than the receptive vocabulary task, in which students are shown four pictures, for example a banana, an apple, a pear, and a pineapple, and are instructed to "touch the apple." The receptive task can be likened to a multiple choice exam, in which a student has a 25% chance of selecting the correct answer, even when guessing. In the expressive exam, students are asked "What is this?" and then must draw from memory any words they know to name the object. The fact that bilingual students showed greater improvement with expressive vocabulary could mean that they have better memory or recall for vocabulary, or it could mean that they particularly, when compared to monolingual peers, benefit more from contextualized, interactive vocabulary instruction. Other factors to consider when analyzing the performance of bilingual students on the expressive vocabulary task include their social-emotional state during the testing process, such as their level of self-confidence in the act of testing and producing an answer when prompted and in using their best guess even when they were not completely sure of the answer.

One implication of this study for schools and other educational organizations is that bilingual students seem to learn differently than monolingual students. This creates

pedagogical questions for educators regarding instructional differentiation. For example, which instructional strategies are most effective for bilingual students, and are they also effective for monolingual students? Another implication has to do with bilingualism itself. If this study indicates that bilingual children have a greater capacity for learning vocabulary than monolingual children, knowing that children with stronger vocabularies have more success in their literacy development and academic learning overall, should schools be offering bilingual educational programming? Age is another consideration for this question. This study took place in a preschool, where participants were four and five years old. Even at this early age, bilingual students already showed a difference in capacity for learning vocabulary. At what age should bilingual education start, if bilingualism is accepted as a benefit and a strength?

In many parts of the country, preschool programs are only available to families who can pay for their children to be enrolled in them. Free, public preschool programs are limited. An additional implication of this study for policy makers, therefore, is related to government funding for preschool programs, especially dual immersion programs. While the children in the study represented different language backgrounds (monolingual Spanish, monolingual English, and bilingual Spanish and English) all children were enrolled in a program whose goal was to set children on a path toward bilingualism. The results showed that bilingual children acquired more expressive vocabulary than monolingual children, and from the literature review we learned that stronger vocabulary leads to improved academic outcomes for children. Therefore, policymakers need to consider not only the benefits of

preschool programming for all children, regardless of ability to pay, but also the benefits of bilingual preschool programming specifically.

Limitations of the Study

Several factors contributed to limitations of this study. The study included only twenty participants, and did not include equal numbers of Spanish-speaking, English-speaking, and bilingual students. With a bigger participant pool, and with equal representation from each language group, the study could have produced different results, or more accurate results. Furthermore, the study did not address or include students from language backgrounds other than those listed above. Students from Somali, Hmong or other language backgrounds may produce different results.

A second limitation was the length of the study, which lasted, from beginning to end, approximately six weeks. Considering that enrollment at the preschool included 2-day/week and 4-day/week schedule options, over the approximately 4-week instructional period, not all students were exposed to the same length of instruction time, and in general, four weeks may not have been a long enough instructional period. Furthermore, some students were absent on instructional days, or were pulled out early from the study's instructional sessions due to other obligations such as the preschool program's tutoring sessions or the preschool's own testing requirements. The students listened to several songs over the instructional period, which may have presented a limitation, considering the limited opportunity for repetition. If fewer songs had been used in the instructional interventions, repetition would have increased, which may have resulted in improved vocabulary outcomes.

A third limitation was that participants from the study came from only one preschool, and from only one class within that preschool. There may have been conditions inherent to that classroom which impacted the study's results, such as the instructional style of the classroom teachers, the time of day that the class met, or the particular socio-economic makeup of the class. Had the study included students from additional classes at the preschool, and/or participants from other preschool programs, it may have produced different results.

Lastly, there was a limitation of the study with regard to the way receptive vocabulary data was gathered. In the receptive vocabulary task, children were shown four pictures, and were asked to identify one given an oral prompt. Therefore, by design the participants were able to guess the correct answer, even if they didn't know the vocabulary. Had the students had a bigger pool of cards to choose from, the probability of guessing correctly would have decreased, creating more accuracy with regard to students' actual receptive vocabulary knowledge. On a related note, the number of words that were taught and assessed in this study was sixteen. Perhaps a larger pool of vocabulary words would have contributed to more accurate results, or would have illuminated different results.

Questions and Recommendations for Future Research

The purpose of this experiment was to study the effects of a music-based instructional method on the Spanish vocabulary acquisition of preschool students in a bilingual setting. By design, it was limited in its scope. Future studies could focus on a variety of different factors in order to increase the scope of research related to music, first

and second language acquisition, and vocabulary learning as it relates to literacy development.

One idea for future research would be to study the effect of a musical instructional method on the vocabulary acquisition of learners of different ages. For example, while the expressive vocabularies of infants and toddlers may be limited, they may benefit from musical vocabulary interventions from an early age, as their receptive vocabulary begins to build. Whereas this study focused on pre-readers, a future study could focus on beginning readers, who may benefit from a musical intervention by making connections between the lyrics they sing and hear to the text they are reading. Lastly, older learners who are proficient readers but who are developing a second language may additionally benefit from musical instruction for the cultural context it can bring to the learning experience. With study participants who are proficient readers and writers, the effect of music on participants' writing abilities or reading comprehension is another area of research worth studying, in both first and second language or bilingual educational settings.

This study focused specifically on the effect of a Spanish music intervention on the Spanish vocabulary acquisition of children from Spanish, English, and bilingual language backgrounds. Furthermore, the music that was used for this study was specifically designed as an instructional tool. Future studies could focus on music that is authentically created as a creative artifact, rather than as a curricular tool. What is gained from the study of authentic music? Are there benefits to the development of language and literacy, second language acquisition, or cultural understanding? Additionally, would similar results be found if this study were to be replicated among a group of German or Japanese-speaking

participants, or in a much more linguistically diverse classroom, where perhaps there is no language majority? Does the learning of certain languages lend itself better to a musical method, and what does this say about the construction and organization of that language?

Lastly, this study found that the bilingual participants demonstrated a statistically significant improvement in their expressive vocabulary scores, as compared to their monolingual peers. Future research could focus on this characteristic of bilingual children. For example, does the critical period for language development in bilingual children come sooner or later than for monolingual children? What is different about the vocabulary acquisition process for bilingual children? Is contextualized auditory input more crucial for their vocabulary development? Do bilingual children require less repetition than monolingual children in order to learn new words? Can bilingualism be achieved if the home language background is monolingual with exposure to a second language in a daycare or school setting, or does bilingualism require input in two languages from the child's parents? If bilingual preschool children showed greater improvement in their expressive vocabulary acquisition, then would older children show similar improvement in a different expressive task such as narrative writing? These and other questions could form the basis of future research studies about how bilingual children learn, as well as the effects of musical strategies on children from differing language backgrounds.

Sharing the Results

The results of this study will be made available in both paper and digital form to the preschool program where the research took place. Families who consented to have their children participate in the study will be contacted and informed of the availability of the

results. Furthermore, this capstone will be added to the Hamline Bush Library and digital commons, where it will be available to members of the Hamline community. In addition, early childhood teachers, ESL teachers, and world language teachers connected to the Hamline community as well as the communities surrounding the school setting of this study will be contacted personally, as the results of this study could have implications for their teaching practices, or could lead to future research questions they may wish to explore.

This Capstone and Hamline University's Conceptual Framework

Hamline University's School of Education created a conceptual framework within which the work of pre-service teachers, teachers furthering their studies, and other professionals emerging in the field of education can be evaluated. Hamline's conceptual framework encourages teachers to "promote equity in schools and society, build communities of teachers and learners, construct knowledge, and practice thoughtful inquiry and reflection" (Hamline University School of Education, 2017). This capstone focuses on the first and final goals of the framework: to promote equity, and to practice inquiry.

The impetus of this capstone was rooted in the educational inequities faced by low-income students and students whose first language is not English. As noted in the literature review, these two groups of students typically demonstrate smaller lexicons, leading to complications with the development of literacy and academic learning in later grades. Thus, this study set out to determine the effectiveness of one instructional method on vocabulary acquisition for learners with different language backgrounds and different economic backgrounds. If the method was found to be particularly effective for native Spanish-speaking students, and/or particularly effective for low-incomes students (or if it

was found to be particularly ineffective for either of these groups), then teachers would be able to create informed instructional plans considering the needs of their language-diverse and low-income students. While the results of this study showed slightly greater improvements in expressive and receptive vocabulary among the participants in the experimental group receiving the musical intervention, it demonstrated no statistically significant differences between the control group receiving a nonmusical instructional intervention, and the experimental group. It did find, however, a statistically significant difference among the bilingual participants in the study, who showed greater improvement in the acquisition of expressive vocabulary than their single language counterparts. In terms of educational equity, these results suggest that further research must be done to identify the most effective instructional strategies for students whose first language is not English and for students from low-income backgrounds. Regarding equity and the bilingual students who showed statistically significant improvement in their expressive vocabulary acquisition, this capstone furthers the notion that bilingualism should be considered an asset rather than a deficit, as in the case of language-diverse students learning English as a second language.

Appendix A: Pretest and Posttest Data Recording Sheet

Student ID # _____

Check one:

_____ Pretest _____ Posttest

Picture Card	Expressive Response	Receptive Response (correct / incorrect)
El lápiz *(pencil)*		
El reloj *(clock)*		
El papel *(paper)*		
Pluma *(pen)*		
La falda *(skirt)*		
La chaqueta *(jacket)*		
La camisa *(shirt)*		
El sombrero *(hat)*		
La ventana *(window)*		
Alfombra *(rug)*		
Espejo *(mirror)*		
Cama *(bed)*		
La pera *(pear)*		
La sandía *(watermelon)*		
La piña (*pineapple)*		
El melón (melon)		
	Total:	

Appendix B: Consent Form

March 27, 2017

Dear Parent or Guardian,

I am in the final stages of completing my Master's of Arts in Teaching degree at Hamline University. My capstone thesis will include a research project, which I plan to conduct in the spring of 2017. The purpose of this letter is to ask for your consent to include your child in my research. Following the research study, I will complete a capstone thesis paper which will be made available to you, and which will also be available via Hamline University's Bush Library.

The goal of my research is to identify effective methods for teaching vocabulary to preschool students from different language backgrounds. I will use a published curriculum to deliver small group instruction to four- and five-year-old students. I will collect data through picture card assessments which I will administer individually to the participating children. The curricular activities will take place 2-3 times per week in twenty-minute sessions for 2-4 weeks. The assessments will take place twice, once before the curricular activities begin, and once afterward. The assessment should take about four minutes each time. This study is designed to enrich learning that is already happening in your child's classroom. The curricular activity sessions will be scheduled so as not to interfere with other important learning activities or assessments that the classroom teachers have planned.

Participation in this study is completely voluntary and optional. There are no anticipated risks to your child as a result of this study. There are no anticipated benefits to your child as a result of this study, however, through the experience provided by the instructional activities, your child may learn additional vocabulary words.

If you choose to provide your consent for your child to participate in my research, your child's identity will be protected. No names or identifying information will be used. All documents and results associated with the study will be confidential and anonymous in order to eliminate any type of risk to participants, and will be kept electronically on a password-protected device. You may refuse participation of your child in this study, and you may decide to withdraw your child from this study at any time without any negative consequences.

I have received permission to conduct this research from the executive director of the preschool and from Hamline University.

Please return the permission form on the second page by Friday, March 31st. You may contact me by phone or email if you have any questions or concerns regarding this project. Thank you for your cooperation.

Sincerely,

Natalie Ehalt-Bove
Hamline University Graduate Student
nehaltbove01@hamline.edu
612-823-2447

Hamline Institutional Review Board
mholson@hamline.edu
651 523-2406

Please cut on the dotted line and return the bottom portion of this page to your child's teacher.

- - - - - - - - - - - -

March 31st, 2017

Dear Natalie Ehalt-Bove,

I have received and read your letter about conducting research during my child's preschool class. I understand that your goal is to better understand how to deliver effective vocabulary instruction to students from different language backgrounds in order to support their developing literacy skills.

I give consent for my child, (first name) _____ (last name) _____, to participate in the research study that is part of your graduate degree program at Hamline University.

I understand that all results will be confidential and anonymous and that my child may stop taking part at any time without any negative consequences.

Signature of Parent or Legal Guardian:

_____

Date: _____

Appendix C: Spanish Consent Form

27 de marzo de 2017

Estimado padre o tutor,

Estoy en las etapas finales de completar mi Maestría de Artes en Enseñanza de la Universidad de Hamline. Mi tesis incluirá un proyecto de investigación, el cual planifico llevar a cabo durante la primavera de 2017. El propósito de esta carta es pedir su consentimiento para incluir a su hijo en mi investigación. Después del estudio de investigación, completaré una tesis que será puesta a su disposición, y que también estará disponible a través de la Biblioteca Bush de la Universidad de Hamline.

El objetivo de mi investigación es identificar métodos eficaces para enseñar vocabulario a estudiantes preescolares de diferentes orígenes lingüísticos. Utilizaré un currículo publicado para instruir a grupos pequeños de estudiantes de cuatro y cinco años de edad. Recolectaré datos a través de las evaluaciones de tarjetas con dibujos que administraré individualmente a los niños participantes. Las actividades curriculares tendrán lugar 2-3 veces por semana en sesiones de veinte minutos por 2-4 semanas. Las evaluaciones se realizarán dos veces, una vez antes de que comiencen las actividades curriculares, y una vez después. La evaluación debería tomar alrededor de cuatro minutos cada vez. Este estudio está diseñado para enriquecer el aprendizaje que ya está ocurriendo en el aula de su hijo. Las sesiones de actividades curriculares serán programadas para no interferir con otras actividades de aprendizaje o evaluaciones importantes que los maestros de clase han planeado.

La participación en este estudio es completamente voluntaria y opcional. No hay riesgos anticipados para su hijo como resultado de este estudio. No hay beneficios anticipados para su hijo como resultado de este estudio, sin embargo, a través de la experiencia proporcionada por las actividades de instrucción, su hijo puede aprender palabras de vocabulario adicionales.

Si usted decide proveer su consentimiento para que su hijo participe en mi investigación, la identidad de su hijo será protegida. No se utilizarán nombres ni información de identificación. Todos los documentos y resultados asociados con el estudio serán confidenciales y anónimos con el fin de eliminar cualquier tipo de riesgo a los participantes, y se mantendrán electrónicamente en un dispositivo protegido con contraseña. Usted puede denegar la participación de su hijo en este estudio, y usted puede decidir retirar a su hijo de este estudio en cualquier momento sin consecuencias negativas.

He recibido el permiso para conducir esta investigación de la directora ejecutiva del preescolar y de la Universidad de Hamline.

Por favor devuelva el formulario de permiso en la segunda página antes del viernes 31 de marzo. Puede contactarme por teléfono o por correo electrónico si tiene alguna pregunta o inquietud sobre este proyecto. Gracias por su cooperación.

Sinceramente,

Natalie Ehalt-Bove
Estudiante de Posgrado de la Universidad de Hamline
nehaltbove01@hamline.edu
612-823-2447

Junta Institucional de Revisiones de Hamline
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651 523-2406

Por favor, corte en la línea punteada y devuelva la parte inferior de esta página al maestro de su hijo.

- - - - - - - - - - - -

31 de marzo de 2017

Estimada Natalie Ehalt-Bove,

He recibido y leído su carta sobre la realización de investigaciones durante la clase preescolar de mi hijo. Entiendo que su objetivo es entender mejor cómo impartir una instrucción de vocabulario eficaz a estudiantes de diferentes orígenes lingüísticos con el fin de apoyar al desarrollo de sus habilidades de alfabetización.

Doy mi consentimiento para que mi hijo (nombre) _____ (apellido) _____, participe en el estudio de investigación que es parte de su programa de posgrado en la Universidad de Hamline.

Entiendo que todos los resultados serán confidenciales y anónimos y que mi hijo puede dejar de tomar parte en cualquier momento sin ninguna consecuencia negativa.

Firma del padre o tutor legal:

_____

Fecha: _____

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