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VOCABULARY DEPTH AND LANGUAGE USE OF HERITAGE LEARNERS

A Master's Thesis

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The Graduate College of

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In Partial Fulfillment

Of the Requirements for the Degree

Master of Applied Second Language Acquisition

By

Elsy B. Shuford

December 2018

VOCABULARY DEPTH AND LANGUAGE USE OF HERITAGE LEARNERS

Department of Modern and Classical Languages

Missouri State University, December 2018

Master of Applied Second Language Acquisition

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ABSTRACT

Persons whose home environment features a non-majority language are known as heritage speakers. The nature and conditions of Spanish heritage speakers' interaction with their heritage language significantly affects their command of it. The aim of this study is to explore vocabulary depth among 10-year-old heritage language speakers in Springfield, Missouri, and its relationship to language use at home. This study adds to the body of knowledge related to heritage language development by exploring language use at home and church activities, as well as vocabulary depth in Spanish heritage speakers in the Springfield metropolitan area by investigating social and linguistic aspects of Spanish heritage speakers, the use of Spanish at home and at church activities and how this affects the vocabulary depth of children. Oral surveys were conducted with the parents of the children and with the children themselves. The children's language depth was explored using a vocabulary depth measure. The study was not able to demonstrate the expected correlation between vocabulary depth and language use at home. The results of this study indicate that further investigation is needed to ascertain the relationship between language use in the home and vocabulary depth among Spanish heritage speakers in the Springfield, Missouri, metropolitan area.

KEYWORDS: heritage speakers, heritage language, vocabulary depth, language use, language loss

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

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INTRODUCTION TO THE STUDY

Children who are born in the host country to parents who have immigrated to the host country, or who came to that host country as children, are known as heritage language speakers (Montrul, 2012). Valdés (2005) defines heritage speakers as students in whose home environment a non-English language predominates; who are able to communicate verbally or, at bare minimum, can comprehend what is being said in the heritage language (HL); and who have some proficiency in both their HL and English.

In 2017 the Census Bureau reported that 3.9% of the state of Missouri residents were born in a country outside the United States, an increase of 143.75% since 1990. That rise includes persons of Hispanic origin, who are becoming an increasingly significant part of Missouri's foreign-born population. The state's third most populous city, Springfield, is seeing a corresponding increase in Hispanic residents, from 2.3% of the city's population in 2000 to an estimated 4.2% in 2016. These facts are important because although the Hispanic population in the Springfield, Missouri area is not very large, the influx of Hispanic residents means that educators and community service providers will be increasingly interfacing with speakers of the Spanish language, especially with the children of these residents. For example, in the Springfield, Missouri Public School system, 1,270 students (5.09% of the total number of students) are of Hispanic origin (Springfield Public Schools, 2018). Thus, issues related to HL development will become increasingly prevalent in this region.

Montrul (2011) mentions that L2 learners in general have better written skills than oral skills because they learned the language primarily in a formal setting with few opportunities to

practice the language with native speakers. Adult heritage speakers, by contrast, tend to understand what they hear in the HL better than they can speak it or write it.

In contrast with the learners' first language (L1), during the age of later language development, the HL is generally not used in the child's academic setting. A result of this lack of attention to the HL at school is that further morphological, syntactical, and lexical development in the HL is hampered as opposed to the majority language, and the HL speaker becomes less proficient in the language of their home environment (Montrul, 2011). This continues through the child school-age years into young adulthood, resulting in deficiencies or gaps in HL acquisition that tend to mirror those found in second language acquisition (SLA), such as pronoun and preposition use, gender agreement, and word order (Montrul, 2011).

Montrul (2008) notes that these language proficiency gaps can be due to incomplete acquisition (the minority language is never completely acquired in childhood) or attrition (the minority language is acquired but later partially lost in childhood).

Tied to this phenomenon is vocabulary knowledge, which is known to be an essential factor that contributes to the use and understanding of a language (Dixon, Zhao, Quiroz & Shin, 2012). Depth of knowledge has been used to refer to how well the learner knows and understands a word (Read, 1993); knowing a word well should mean more than simply being familiar with what the word means and how it is used but should also include the word's morphology and how the word is spelled and pronounced (Nassaji, 2006).

Montrul (2011) observes that although HL speakers are initially minority-language dominant, as time progresses they find themselves increasingly immersed in the majority language of the surrounding culture, and their language dominance shifts from the minority language (Spanish, in this case) to the majority language (English). This shift manifests itself in

these children displaying significant minority language proficiency gaps when compared to their minority language proficient counterparts of similar age.

Heritage speakers' exposure to and close contact with the HL (either exclusively or with the majority language) has been found to play a significant role in HL development (Lee & Wright, 2014). Heritage speakers mention different motivations as to why they want to maintain the HL, among them a desire to maintain family ties (Mancilla-Martinez & Kieffer, 2010), which includes communicating with their parents (Tseng & Fuligni, 2000) and their grandparents (Ishizawa, 2004). Additionally, some mention a desire to be able to understand what they see on television (Ramirez, 1991).

This study seeks to add to the body of knowledge related to HL development by exploring language use at home and church activities, as well as vocabulary depth in Spanish heritage speakers in the Springfield metropolitan area. The purpose of this study is to address the social and linguistic aspects of Spanish heritage speakers, use of Spanish at home and church activities and how this affects the vocabulary depth of 10-year-old Spanish heritage speakers in the Springfield, Missouri area. This was accomplished by examining the vocabulary depth and use of Spanish of 16 Spanish heritage speakers in the Springfield, Missouri metropolitan area who were 10 years old and who had at least one Spanish-speaking parent or caregiver living in the home. This research project consists of a review of literature, a discussion of the study's methodology, results, and limitations, and conclusions drawn from the project.

LITERATURE REVIEW

Heritage Speakers and Heritage Spanish

Heritage speakers have been defined as the children of immigrants, either born in or having grown up in the host country (Montrul, 2012), or as individuals who speak or understand the HL and were raised in homes where the language spoken is not English (Valdés, 2005). The term heritage speakers refer to students in whose home environment a non-English language is the predominant form of communication and where the student has some facility with the non-English language (Valdés, 2005). Heritage speakers have been exposed to the family language from an early age either exclusively or alongside the majority language. In addition, depending on the family's socioeconomic level and culture, heritage speakers may also be exposed to the HL in handwritten and printed form (Montrul & Ionin, 2012).

Heritage speakers can be defined as individuals who have ties (whether through family relationships or some other means) with a language other than that spoken in the majority population. The heritage language's status in relation to the majority language, and the heritage speaker's connection with that language are important factors in determining the nature of the speakers's proficiency in the heritage language (Fairclough & Beaudrie, 2012). Cummins (2005) notes that heritage speakers are those who acquire the language either 1) through exposure in the home environment (L1), 2) through contact with other family members, or 3) through community connections tied to ethnicity (common with immigrants of the second and third generations). Pascual y Cabo (2016) notes that heritage speakers speak the minority language within the home, but because there can be considerable difference in how the heritage language is actually used in the home, their proficiency in the heritage language has a high degree of

variation. Hornberger and Wang (2008) define heritage speakers as persons who have familial connections (current or past) with a non-English language and who themselves make a determination as to their status as heritage language learners.

For the purposes of this study, the researcher has adopted the more narrow definition by Valdés (2001), who refers to heritage speakers as students who live in a home environment where a non-English language is commonly used, who have sufficient knowledge of the heritage language to understand it, and who also demonstrate ability to speak both the heritage language and English. Fairclough and Beaudrie (2012) note that this definition is helpful in that it emphasizes actual knowledge of the heritage language, rather than merely having a cultural connection to it. Sociolinguistically and generationally speaking, the parents of heritage speakers are considered the first generation, while their children are considered second generation, and their grandchildren are third generation (Lynch, 2003). Immigrants of the first generation possess full HL competence due to their being born and raised in a country where the HL is the majority language. Members of the second generation are considered heritage speakers; they are also considered bilingual to some degree, since they use both acquired languages to communicate in both settings. For those of the third generation, who were generally raised speaking the majority language (which thus becomes their first language), limited competence in the HL tends to be the norm (Montrul, 2011).

The circumstances of heritage speakers' birth, immigration and family environments cause them to demonstrate unique linguistic characteristics not shared by the majority population, and researchers have explored the linguistic factors that affect HL acquisition (Montrul, 2008). In addition, social factors such as birth order and gender influence HL development (Lynch, 2003). However, by living in a society where the HL is the minority

language, for these heritage language speakers certain language properties reach an acquisition endpoint and are eventually lost due to lack of use and input (language attrition) (Montrul, 2012).

A growing number of researchers are addressing the study of HL among Spanish-speaking persons in the United States. This line of inquiry is particularly relevant to heritage speakers who form one of the nation's fastest-growing minority groups (Dumitrescu, 2013). Immigration patterns and accompanying biological growth has given rise to communities where both Spanish (the HL) and English (the majority language) are spoken to varying degrees. Montrul (2011) notes that these communities typically have high concentrations of first-generation adult immigrants, and that their children commonly exhibit limited proficiency in the language spoken by their parents.

The Spanish language has a long history in the United States. In the 16th Century, Juan Ponce de Leon brought the Spanish language to what would become the Florida coast of United States. The Spanish language took root in North America with the establishment of St. Augustine, Florida in 1565 (Garcia, 2005). Today, Spanish is not only the second most spoken language in United States, but it is also the second most studied language in this country (Dumitrescu, 2013).

Mexicans, Puerto Ricans, and Cubans have contributed most to the expansion of Spanish in North America. The sociopolitical and economic realities in their countries of origin have been a driving force behind their immigration to the United States (Dumitrescu, 2013). In the past, these new residents tended to concentrate in urban areas in Florida, New York, Illinois, and the Southwest; today, small towns across the nation are seeing an increase in Hispanic population (Fairclough & Beaudrie, 2012). Dumitrescu (2013) notes that most research into the United States' Hispanic community has concentrated on the nation's three largest Hispanic

nationalities: Mexican, Puerto Rican, and Cuban. Since the turn of the century, however, more scholarly attention is being given to other immigrant groups, including Central and South Americans. Wherever they settle, the Spanish spoken by the children of these immigrants tends to English; in the 3rd and 4th generations the loss of Spanish becomes more pronounced.

The Spanish language has become so prevalent in this country that the United States, with its rapidly growing Hispanic community, has become the nation with the second-largest number of Spanish speakers in the world, and that demographic projections indicate that by 2050 the United States may become the world's largest Spanish-speaking country. Thus, the study of how Spanish speakers in this country use their HL is an increasingly important field of study. This is particularly true for Spanish heritage speakers.

Language Use and Heritage Languages

This study draws on theoretical perspectives that address the multidimensionality of language use development and maintenance over the life span. Language use involves the words commonly used to communicate in day-to-day interaction (Thomas & Cao, 1999), where the linguistic proficiency of the speaker and interlocutor plays an important role in determining their use of language, especially in bilingual communities (Cooper & Greenfield, 1969).

Language acquisition occurs within the context of the interaction of various cognitive-psychological and socio-cultural elements (Kachru, 1994). This holds true, both linguistically and cognitively, for heritage speakers as well (Kachru, 1994). These environments influence vocabulary acquisition and language use patterns (Jones & Adamson, 1987). Since heritage students' use of the language is restricted to those who also speak the minority language, their interaction and communication in that language is narrowed to their parents, siblings, extended

family, and friends who also speak the HL, social contacts in community organizations and events where the minority language is spoken. This restricted language use leads to an observable incomplete acquisition of vocabulary and grammatical structures among heritage speakers (Montrul & Ionin, 2012).

HL development is greatly influenced by various social factors, among these being social circumstances (Pham & Tipton, 2018), birth order, and gender (Lynch, 2003). Romaine (1975) notes that it is not the speaker's age but social circumstances (such as gender affirmation or a desire for preservation for cultural conservation's sake) and not the speaker's age that have a greater impact on HL learners' ability to acquire the HL. Among the social factors that influence a speaker's ability with the HL is birth order. Lynch (2003) holds that birth order should be considered as one variable in HL learning. Lambert and Taylor (1996) and Zentella (1997) conclude that first-born children seem to have greater HL proficiency than their second-born siblings.

The speaker's motivation to use the heritage language HL appears to be another important social factor in heritage language HL use. Three ways in which the speaker's motivation influences their ability and desire to speak the heritage language HL are the language's socio-political status, family issues, and the speaker's desire to maintain their ethnic identity (Milkulski, 2006). Montrul (2012), for example, found that the language's socio-political status has significant influence over speakers' attitudes toward the language. Milkulski (2006) studied heritage speakers' motivations, attitudes and goals, revealing that another important motivating factor in using the heritage language HL is a desire to communicate better with one's family of origin. This same study showed that family influence can manifest itself in pressure to

speak the heritage language HL because of the professional opportunities that present themselves to persons who speak two languages.

Lee and Wright (2014) found that a heritage speaker's desire to maintain a connection with their ethnic identity can motivate them to maintain their heritage language HL. Milkulski (2006) showed that Yiddish and Hebrew-speakers, for example, are the two groups that show the greatest desire to maintain their heritage language HL. Italians and Portuguese heritage language speakers also reveal a desire to maintain their identity and contact with people of their ethnic community (Milkulski, 2006). Similarly, Korean heritage speakers show a desire to maintain their heritage language HL for the professional advantages offered by being bilingual (Cho, 2000).

Cooper and Greenfield (1969) studied language use among bilingual Puerto Ricans in New York, compiling data from 48 individual interviews. The respondents were asked to rate what proportion of their speech in social interaction and at work was in Spanish when speaking with other Puerto Ricans that knew both languages. The researchers hypothesized that they would choose to speak Spanish in some domains, such as in the home, indicating language maintenance. Language shift would be indicated if it were shown that English was the preferred form of communication in all domains of life. Data from the interviews was compiled on three scales. In the first, 10 indicated that the respondent spoke only Spanish and 0 that the respondent spoke only English. In the second, a 7-point Likert scale was used, where a higher score indicated the influence of Spanish on English and a lower score indicated the influence of English on Spanish. In the third scale, a 6-point Likert scale was used to determine the respondents' knowledge of words or phrases and their ability to use them. The speaker's linguistic proficiency and interlocutor each played a role in determining language use in this

community. The data indicated that those in the school group between 13 and 19 years old had the tendency to speak Spanish with younger persons, since Spanish is the first language learned by these youngsters; they also used Spanish to communicate with older persons. However, they used English to speak among themselves. The researchers discovered that the use of English was increasing and the use of Spanish decreasing among members of the community; this decrease of Spanish use was also noted within the family. Thus, it seemed at that time that the Puerto Rican community, like other immigrant groups, is experiencing a displacement of the HL by English.

More recently, Ramirez (1991) studied the sociolinguistic lives of Hispanic adolescents in the United States, using 549 Hispanic young people whose average age was 16.4 years old and who live in 10 urban centers. For this study, a sociolinguistic questionnaire was developed to determine how these young people use Spanish and English with their families and in different contexts. In addition, they were asked to rate their language use on a 5-point Likert scale, where 1 represented only Spanish and 5 represented only English. Ramirez (1991) discovered that the adolescents used English when speaking with their siblings, friends, at work, during recess, and with their classmates. Spanish was used when speaking with their parents, their grandparents, and at church.

Cho (2000) observed that heritage learners who were either born in the United States or who immigrated there at an early age tend to use their HL less than those who immigrated during their school age years or adulthood. In addition, children who speak English only in the home or speak both English and their HL have a lower language proficiency than children who only speak their HL at home. Two possible explanations for this phenomenon are incomplete acquisition and attrition in infancy (Montrul, 2008; Silva-Corvalan, 1994).

Language Use Patterns at Home and with Peer Groups. Various aspects of HL use, development and maintenance in families have been studied by different researchers, including language use with grandparents (Ishizawa, 2004; Wilmoth 2001); parents' place of birth (Stevens, 1985); older siblings' influence on language use (Kibler, Palacios & Simpson, 2014); and measured generational loss of heritage languages (Eunjeong, 2013).

Family structure and relationships in the home have been shown to be an important factor in heritage speakers' acquisition of the HL. In fact, the most important factor in both maintaining language proficiency and passing the HL on to future generations is the influence of a child's parents, grandparents or family members (Lee & Wright, 2014).

The presence of non-English speaking parents in the home has a significant influence on their children's language use, and children who grow up with one or both parents born in another country are the most likely to learn a non-English language (Tseng & Fuligni, 2000). Stevens (1985) writes that children whose parents do not have the same ethnic background have a lower probability of learning to speak a non-English language. This is not the case, however, with children whose parents are of the same ethnicity.

Mancilla-Martinez and Kieffer (2010) report that language use patterns have been found to change across time and across generations, with a shift toward monolingual English in the United States context. Their study investigated changes in the home language environment of 1,538 minority language heritage speakers between kindergarten and eighth grade, whose parents reported speaking a language other than English. The children's parents were interviewed to collect information on various aspects of the children's home environment, such as whether a language other than English was spoken at home, and the frequency with which this language was spoken by the mother to the participants and the participants to the mother. The results

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indicated that more than one third shifted toward less frequent use of the HL, about 13% shifted toward more use of the HL, and half of the sample demonstrated stability in language use. This shows the dynamic nature of language use in the home; half remained stable and the other half shifted. The authors reported that because of the influence of the desire to maintain family ties, gaining English proficiency is not necessarily an indicator of HL loss.

Tseng and Fuligni (2000) investigated language use and family relationships with 600 immigrant families in the United States, with family cohesion and communication as variables. Approximately 20% of the families studied spoke two languages in the home. The highest levels of proficiency across both variables were seen in adolescents who spoke only the HL with their parents, followed by those who mutually spoke English. Those who spoke English to their non-English speaking parents demonstrated the lowest scores.

In addition to the influence of parents, the presence in the home of a non-parental adult that speaks a language other than English increases the possibility that children in the home will learn to speak the non-English language (Ishizawa, 2004). Wilmoth (2001) discusses the tie that exists between non-consecutive generations living in a mutigenerational household, such as grandparents with a limited understanding of English. In these cases, the children acquire linguistic knowledge and practice from the interaction with older persons (Garrett & Baquedano-Lopez, 2002). This interaction, which includes observation and imitation, contributes in an indirect way to language learning in the home (Ishizawa, 2004).

Ishizawa (2004) measured the incidence of children speaking a non-English language in homes where the grandparents were present and discovered that 70.0% of the children who live in two or three generation households are able to speak a non-English language. In households where parents and grandparents don't speak English (or are not native speakers of English),

approximately 84% of the children spoke the minority language. His conclusion is that living in a three-generation household, where the grandparents speak a non-English language, is a contributing factor in language maintenance. This also helps explain language shift between non-consecutive generations. Language shift will depend on the home's family structure since not every immigrant child lives with non-English speaking grandparents.

In addition to the influence of parents and grandparents, existing research suggests that older siblings, the majority of whom speak the minority language, can have a profound influence on home language. Once the older siblings begin to attend school, they bring the majority language into the home by way of television programs and their homework. This has the effect of bringing more opportunities for their younger siblings to be exposed to the majority language (Kibler, Palacios & Simpson, 2014)

Kibler, Palacios and Simpson (2014) conducted a study to determine what factors predict children's use of Spanish at home. The mothers in 83 families with children between ages two and four years were interviewed to determine language use in the home. The results confirmed siblings' influence on children's language. Not only was the use of the majority language greater in families with more older siblings; children with older siblings were less likely to talk to their mothers and other children only in Spanish.

Eunjeong (2013) measured generational loss of heritage languages, revealing that when the student's primary place of using the language was with the nuclear family, there was a significant decrease in HL use across the family's generations. 90.5% of first-generation Hispanic students used their HL approximately 50% or more when communicating with their parents—more frequently than their Asian counterparts, 79.6% used their heritage language with their parents. Among third-generation students, however, Asian students used the HL more

frequently than Hispanic students—62.5% of Asians compared to 46.5% of Hispanics. Use of HL among siblings showed that 34.4% of first-generation Asians used their HL with siblings and friends, while only 18.8% of third-generation Asians did. For Hispanics, 50.4% of first-generation students used Spanish with friends and siblings; that percentage dropped to 26.5% with the third generation. For both Asian and Hispanic students, HL use was more frequent with their parents, and majority language more so with siblings and friends. Both Asian and Hispanic students spoke their HL more with their parents than with their peers and siblings and used the majority language more frequently with siblings and friends. Eunjeong (2013) concluded that it is apparently very difficult for a heritage speaker to maintain proficiency in the HL, since the ability to function in the majority language is necessary to succeed both academically and professionally.

Heritage speakers' family relationships are not the only influence on their proficiency in the HL. Ethnic peer groups have also been shown to exert a powerful influence on HL proficiency, although this influence is not universally felt in all ethnic groups. Eunjeong (2013) for example, discovered that Hispanic students, as opposed to their Asian classmates, were more likely to speak Spanish within their ethnic group by a factor of three. Nevertheless, Tseng and Fuligni (2000) found that having a strong support group among ethnic peers (which could include academic institutions, friends and family) is an important factor in maintaining proficiency among heritage speakers. In fact, a peer group that shares the heritage speaker's ethnic identity and that openly values the minority language has been found to be as or more important than the influence of first-generation immigrant parents in maintaining the HL.

Television Use and Vocabulary Development in Heritage Language Speakers.
Koolstra and Beentjes, (1999) report that an important medium for vocabulary development at

home is television. Ramirez (1991) observes that most of the television viewed by adolescent heritage speakers in the United States is in English, thus making television an influencing factor in their use of Spanish.

Television provides auditory, visual and written cues that assist viewers to discern the meanings of words, all within a multisensory medium where viewers are generally well motivated to understand what is seen and heard (Koolstra & Beentjes, 1999). Vocabulary learning by watching television occurs when the viewer attempts to understand what is being said. Word meaning is acquired by inference within the context of what is being presented using semantic cues (Ramirez, 1991)

Koolstra and Beentjes (1999) performed a study with 246 elementary school aged children (125 males and 121 females) in grades four through six to determine whether Dutch children could acquire elements of English by watching television with and without subtitles in a non-educational setting. Watching television with subtitles was shown to be a factor in vocabulary acquisition. These children not only heard the words in the target language; they also had the visual support of seeing the words, which allowed them to relate context-bound meanings to orthography. This enhanced their ability to discern separate words and their pronunciation in the flow of the spoken language.

De Bot, Jagt, Janssen, Kessels and Schils (1986) addressed the importance of television as a way of maintaining language. Their study attempted to determine whether Dutch secondary school and college students focused on the language being spoken during the television program, or whether they focused on subtitles when they watched television in English. The students were to observe short items in news bulletins where what was said and what appeared in the subtitles did not coincide. After observing each item, the students took a 42-question multiple-choice test.

21 of the questions had deviation and 21 did not. The results demonstrated that watching television in a second language may play a role in learning, relearning or maintaining a second language.

Reading and Vocabulary Development in Heritage Language Speakers. In addition to television, reading has a significant impact on language acquisition and vocabulary development. Zhang (2013) discovered that when reading a text, a knowledge of 98% to 99% of the lexical meanings of the words in the text is necessary to avoid the comprehension problems that new vocabulary can cause. Laufer and Ravenhorst-Kalovxki (2010) determined that the lexical threshold necessary for reading comprehension is between 4,000 to 8,000 words for a comprehension level of 95% to 98%.

Rodrigo's (2009) research indicates that incidental acquisition through reading contributes to vocabulary depth. 44 subjects took part in his study, 20 being native L1 Spanish speakers and 24 non-native L2 Spanish speakers. The 44 participants were divided into four groups: mother tongue (L1 Spanish and mother tongue L2 Spanish), and reading (with reading habit and reading without reading habit). To measure each group's lexical component, the Pequeño Laurosse Dictionary was used to develop a multiple-choice test (Vierma, 1991). The test stimulated the lexical component where vocabulary was chosen following the criteria established by Dupuy (1975) where foreign words, abbreviations, proper nouns, archaic words, slang, compound words, and technical terms were not considered. A random word was chosen every 16 pages, resulting in a vocabulary test of 60 items. As expected, native speakers who read regularly demonstrated the highest lexical level with a total of 48,600 words. Those who regularly read but were not native speakers had a lexical level of 25,500 words. Non-native speakers who were not regular readers showed a lexical level of 11,100 words. Thus, the study indicated that an individual's reading

habits are a stronger predictor of a speaker's lexical component than whether or not the individual is a native speaker. One conclusion that can be drawn from this is that being a native speaker does not guarantee a high lexical level if there is not an accompanying habit of reading. Conversely, lexical knowledge approaching native-like levels can be developed through strong reading habits. Thus, studies conducted by various researchers indicate that both watching television and reading have a significant impact on vocabulary development and maintenance among HL speakers.

The Language of Heritage Speakers

In the development of vocabulary, the stages of vocabulary knowledge start with not having heard a word, to hearing it but not knowing its meaning, to knowing how to use the word and in what context, and remembering the word (Stahl & Bravo, 2010).

Read (2000) notes that language is constructed from the building blocks of words, which are foundational to the sentences which comprise paragraphs, which in turn form entire texts. Moreno-Fernandez (2007) describes lexicon as the totality of words known, the use of which is conditioned by the subject matter. Vocabulary breadth and vocabulary depth have been explored by various researchers as aspects of lexical knowledge. Hart and Risley (1995) point to a child's early experience with a language as a key contributing factor in how different children's vocabulary grows.

Moreno-Fernandez (2007) notes a relative scarcity of research on the lexical knowledge of Spanish bilinguals living in the United States. His study of the lexical knowledge of Hispanic first and second generation heritage speakers indicated that English influenced the subjects' lexicon to a much lesser degree than would be expected. Students were presented 22 word groups related to everyday living, calculating word frequency. The results showed that

Anglicisms made up only 15% of words produced; in addition, of the most common words in the semantic field only 6.5% were Anglicisms. The study also showed an inverse relationship between English production and Spanish proficiency. Students enrolled in higher levels of Spanish produced fewer lexical items in English.

In another study of lexical knowledge of heritage speakers, Polinsky (2006) tested five incomplete learners of Russian and four proficient Russian speakers to determine the subjects' knowledge of verbs, nouns and adjectives. Her findings revealed that the incomplete learners' retention of adjectives and nouns was less than that of verbs; she concludes that the reason for the subjects' better retention of the latter is that verbs, which serve as predicate heads, have a relatively more important place in a sentence than do nouns or adjectives.

Linguistic patterns exhibited by heritage speakers include language change in progress (Silva-Corvalan, 1994); language attrition during the critical period and parental input (Montrul, 2008). Montrul (2012) identifies another factor that appears to influence the outcome of HL acquisition: the incomplete or interrupted acquisition due to restricted exposure to the HL throughout childhood (a function of the modality, frequency, and length of exposure to the HL).

Silva-Corvalán (1994) found that one phenomenon seen in heritage speakers is the elimination of the complementizer, commonly lost in English, but not in Spanish. The same study notes the tendency of heritage speakers to reduce grammatical complexities to more simple forms, while avoiding the introduction of significant alterations in the language.

In addition, Silva-Corvalán (1994) studied the verbal system of Spanish-English bilinguals in the United States, using recordings of informal conversations of three groups. The first group was comprised of Mexicans who arrived in the United States after age 11. The second group was comprised of Mexicans who had arrived in the United States before age six or who

had been born in the United States with a mother or father from the second group. The third group was comprised of those born in the United States but whose parents were from the second group. Stages of simplification and loss of their verbal system were seen in an inverse order to how they are acquired. For example, in the first group a loss of ability was found in using the future perfect, conditional perfect and present subjunctive perfect. In the second group a loss of ability in using the conditional perfect, present subjunctive perfect, a substitution of the future for the infinitive perfect was observed. In the third group, a loss of the present subjunctive was seen.

Floyd (1978) found that, regarding the variation in verbal system in HL speakers, the use of the present, past and imperfect indicative in the Southeast of the United States is more overgeneralized in semantic contexts. An example is the use of the simple present and periphrastic constructions to express the future.

Floyd (1978) also observed the frequent use of progressive constructions to express more general concepts and futurity. Gutierrez (1995) notes heritage speakers' use of verbs in the future tense in a synthetic form to express possibility or supposition in the present, limited to the modal, not temporal, function.

Second-generation immigrants show the greatest difference. When they begin to attend school, their exposure to the majority language increases. The influence of and their use of their HL, spoken and understood by them from their early childhood, declines in favor of the majority language (Montrul & Ionin, 2012). Montrul (2011) also notes that this country's latent English-only policies are an additional, more subtle factor in this decline that contributes to HL speakers' language shift.

Language attrition implies that certain language properties reach an acquisition endpoint at a certain age but are eventually lost due to lack of use and input. This explains certain gaps in

heritage speakers' proficiency in the HL when they become adults (Lynch, 2008). From a psycholinguistic perspective, language attrition occurs when, due to lack of use, connections between knowledge nodes in memory weaken. When heritage learners grow from childhood to adulthood their proficiency in the heritage language has proven to be susceptible to both morphological and syntactic attrition (Montrul, 2012). Austin, Blume and Sánchez (2013) studied language development's cross linguistic influence in Spanish-English bilingual school-age children who receive no formal instruction in Spanish.

Spanish heritage speakers demonstrate gaps in grammar knowledge even when their pronunciation and knowledge of the language's norms reach near native-like proficiency (Montrul, 2008). Whether this phenomenon is rooted in insufficient morphological, syntactical, or semantical development is unclear, although Montrul (2008) offers that an important factor may be the low input the child receives in their HL development years.

If the low language input occurs during childhood, grammatical attrition will be much more severe. Simultaneous bilinguals tend to experience this phenomenon in a more accentuated way than sequential bilinguals, because the former are exposed to both the majority and minority language from birth, eventually receiving less and less input from the minority language (Montrul & Ionin, 2012). If the input is insufficient from birth up to approximately four years (considered to be the primary linguistic development years) or during the late development years between ages four and 13, much grammatical knowledge will not be acquired, and their language proficiency will not achieve a native-like level (Montrul, 2008).

Montrul and Ionin (2012) explored whether Spanish heritage speakers demonstrate a greater grasp than their L2 counterparts of definite plural articles as being generic or specific. Their research showed that both L2 learners and heritage speakers preferred specific

interpretations of plural definite articles (indicating transference from English), while native speakers preferred generic readings of the same.

Montrul (2011) is among the researchers who have studied heritage speakers' use of pronominal subjects in null languages such as Spanish. In that language, where a subject pronoun may be either null or overt, the absence or presence of the subject pronoun provides important information regarding what the speaker wants to communicate. The English language, by contrast, requires the presence of overt subject pronouns. As reported by Montrul (2011), adult Spanish heritage speakers raised in the United States and for whom English is their stronger language tend to have difficulty in the use of overt subject pronouns in Spanish. Flores-Ferrán (2004) conducted interviews of 20 men and 21 women between the ages of 23 and 81 of Puerto Rican descent living in New York City. The study showed that, when comparing the use of subject pronouns between heritage speakers and native speakers, a majority (57%) used the singular form of subject pronouns as compared to 31% of native speakers, while the use of plural subject pronouns was the same in both groups (25%). Since in Spanish, pronominal subjects are more common than overt subjects, it can be said that heritage speakers use Spanish pronouns more frequently due to transference, although additional studies are required to determine its role (Klee & Lynch, 2009).

Klee and Lynch (2009), Jaramillo (1995) and Song, O'Grady, Cho and Lee (1997) have also investigated pragmatic-discursive variation, exploring the problems of the insufficiency of formal registers in the speech of heritage speakers. This phenomenon is overgeneralized especially in third and fourth generation heritage speakers. The direct and indirect pronouns that correspond to *tú/usted* "you" (formal and informal) often give evidence of error and contradiction on the pragmatic-discursive level (Klee & Lynch, 2009). Noting that using the

informal *tú* "you" with elders can convey a lack of respect, Jaramillo (1995) found in a study of 50 Spanish speakers in New Mexico that younger Spanish speakers preferred *tú* "you" (75%), while older Spanish speakers preferred the more formal *usted* "you" (formal) when speaking with elders. This discrepancy may indicate that in this particular community, linguistic change is occurring. Klee and Lynch (2009) report that young Hispanics' preference for *tú* "you" can be thought of as an overgeneralization of that pronoun. They state that the study of Spanish in the United States and its use across generations should take this factor into consideration.

Song, O'Grady, Cho and Lee (1997) conducted studies with Korean heritage speakers, and monolingual Koreans between the ages of three and eight years old, to compare and study their comprehension of OSV sentences with animate subjects, objects and case markers, both in isolated simple sentences and with relative clauses. Each child was shown 16 pairs of photographs depicting actions, such as hug, push, and kick, each action being done by a boy and a girl. Half of the photographs included text and half did not. The study showed that heritage speakers demonstrate much greater inaccuracy with OSV (34% with context, 25.75% without context) than monolingual speakers (86.3% with context and 50% without context). This indicates the difficulty of case marking acquisition for both groups, including heritage speakers with exposure to Korean from an early age and those where attrition may be a factor.

Montrul (2012) notes a significant difference between HL and L1 and their respective speakers. In typical monolingual language situations, the child learns the majority language in both home and educational contexts; if and when they begin to study a second language, the majority language remains the stronger and the new language the weaker. For heritage speakers the experience is quite different—the first language learned at home, formerly the majority language, is used less frequently and becomes the minority language.

Montrul (2012) notes that heritage speakers and L2 learners share the same dominance pattern, in that their minority language is weaker than their majority language. Montrul (2008) states that the timing of input of HL speakers and L2 learners has an important influence on language acquisition. She observes that HL speakers acquire language in early childhood, while L2 learners begin at a much later stage in life. HL speakers learn the language by hearing it and through oral interaction with native speakers and are usually immersed to some degree in the culture of the language. L2 learners, by contrast, generally learn the language at a later age, in a classroom setting and sometimes with non-native speakers. In addition, their exposure to the language relies heavily on written materials, not immersive auditory experiences as in the case of HL speakers. Thus, the age at which the language is acquired in HL and L2 learners has a significant impact on proficiency since their learning experience with their weaker language is different. Nevertheless, it is common to see significant variation in the levels of proficiency in the weaker language of HL speakers and L2 learners. Another difference between HL and L2 learners is in phonetics and phonology, HL speakers generally having better pronunciation and aural comprehension than oral and written skills. L2 learners, on the other hand, tend to have better written skills than oral skills (Montrul, 2011).

Other areas of difference between HL and L2 are morphosyntactic and lexical. Montrul (2012) notes that, because the HL is used less than the majority language it tends to lag behind in morphosyntactic and lexical development compared to the speaker's more dominant language, thus becoming the weaker language.

Montrul (2012) observes that as HL speakers find themselves immersed in the majority language, their language dominance shifts from HL to L2, and they are significantly less competent in HL than their fully L1-proficient counterparts.

Vocabulary Depth

The linguistic experience and guidance children receive create a pattern for vocabulary acquisition and knowledge, which are important factors in the language learning process (Dixon, Zhao, Quiroz & Shin, 2012). Barcroft (2005) notes that vocabulary can be acquired either incidentally or intentionally,. Incidental vocabulary acquisition refers to the process of learning vocabulary through context, without an explicit intention to do so. For example, during a conversation, meaning may be inferred through context of what is being said. Similarly, new words may be learned while reading without the intention to do so. Intentional vocabulary learning refers to words learned deliberately, where the meaning of a specific word is directly asked.

It is important to note the difference between vocabulary depth and vocabulary breadth. For Zhang (2013), vocabulary depth refers to how well words are known (receptive and productive knowledge); Nassaji (2006) writes that vocabulary depth refers to the quality of lexical knowledge. Vocabulary breadth, by contrast, refers to the number of words known at a certain level of language proficiency (Nation, 2001) or the number of words that a person knows (Nassaji, 2006).

Crucial to the study of vocabulary depth is an understanding of vocabulary development, which typically involves learning how to use words in their various meanings and forms. This implies that mere familiarity with a word is not sufficient. What is needed is effective word use. Adolphs and Schmitt (2003) note the essential role vocabulary has as foundational to language learning, and that a knowledge of around 2,000 words is necessary to understand 95% in a conversation.

Miller (1977) found that children between ages six and eight learn twenty-one words per day. Nagy, Herman and Anderson (1985) state that 13-year-old students learn some 9.2 words per day, or 3,000 words per year. Smith (1982) observed that 17-year-old students know between 28,000 to 73,000 words. While different researchers offer different numbers, there is substantial agreement that since direct instruction can provide only approximately 400 words per year, formal instruction cannot account for the acquisition of the majority of vocabulary (Nation, 1990).

This raises the question of how words are learned in the first place. Learning the different meanings of words happens over time and with repeated exposure (Nagy, Herman & Anderson, 1985). New words are learned in a multifaceted way (Stahl & Bravo, 2010), via incrementality, multidimensionality and receptive/productive duality. Incrementality refers to the gradual process or stages that take place for word knowledge to occur. Over time, increased exposure to new vocabulary in different contexts results in increased word knowledge. The stages of vocabulary knowledge start with not having heard a word, to hearing it but not knowing its meaning, to knowing how to use the word and in what context, to remembering the word (Stahl & Bravo, 2010).

Related to vocabulary development is multidimensionality, which refers to a deep knowledge of the word; and lexical organization, which refers to the relationship a word has with other words (Stahl & Bravo, 2010). Among the dimensions that influence heritage language speakers' vocabulary development mentioned by Stahl and Bravo (2010) are generalization (the ability to define a word); application (knowing how to use the appropriate word); breadth (knowing different words); precision (the ability to use the word correctly in all circumstances); and availability (the ability to use the word productively both orally and in written form).

Receptive/productive duality refers to the ability to recognize the word either by hearing or reading it due to previous contact with the word. This is what allows a HL student to correctly use a word in written or oral form.

Measures of Vocabulary Depth in Heritage Language Speakers. Various methods have been proposed to evaluate vocabulary depth. Strasser and del Rio (2014) suggest that the quality of one's lexicon is the most important factor for understanding a word, citing studies measuring vocabulary knowledge by the ability of a person to define a word. They state that both the measure of a person's receptive vocabulary and their ability to define a word should be included in the study of vocabulary knowledge.

Stahl and Bravo (2010) suggest three class assessments. The Vocabulary Knowledge Scale (VKS) uses self-reporting that includes a constructed response based on the person's description of the word's meaning. It was designed to measure the different levels of lexical knowledge of specific target words that students were learning in a comprehension-base ESL program. The VKS shows a high correlation between students' self-report of word knowledge and the actual score for demonstrated knowledge of the word, and thus can be used as a practical tool to measure the initial stages of words knowledge.

Like the VKS, the Vocabulary Recognition Task (VRT) uses students' self-reporting. The VRT, however, involves a task that requires a yes or no answer, to discern a person's vocabulary recognition. The purpose of this test is to identify content-related words that the student can read and associate with what is being studied (Stahl & Bravo, 2010). The VRT's simplicity makes it more user-friendly for English language learners and more adaptable to a larger group of target words than VKS. Because it uses a pretest, teachers know which words are

known or unknown, permitting them to spend more time vocabulary unfamiliar to their students. In addition, the posttest gives teachers an instrument to evaluate their teaching.

The third assessment is The Vocabulary Assessment Magazine (VAM) created to evaluate a student's scientific knowledge (Stahl & Bravo, 2010). The VAM consists of two sections. First, the students complete a brief reading passage, followed by open-ended questions designed to test literacy. Then, the students engage in a drawing and labeling exercise, as a way of assessing both scientific knowledge and literacy. 703 VAMs by second and third graders that involved word use frequency showed statistically significant results for EO students and ELL's. The VAM allows teachers to assign partial credit for imprecise use and can be used as an alternative vocabulary assessment to measure of depth of word knowledge.

In addition to these three assessments, word association tasks (WAT) have been used by vocabulary researchers to measure language learners' vocabulary depth. The Word Associate Test (WAT) developed by Read (1993) uses a series of word associations to assess vocabulary knowledge—that is, the various semantic and collocational relationships that a word has with other words in the language. The WAT was composed of 40 elements, each of which featured a stimulus word which was followed by eight words; four of these words were similar to the stimulus word and four were not. The subjects were only permitted to choose four of the eight words (Agdam & Sadeghi, 2014).

Nassaji (2006) used a WAT test to measure the relationship between vocabulary knowledge depth and lexical inferencing in relation to 21 ESL students with varying linguistic backgrounds. The test consisted of 50 target words. Each target word was followed by a list of eight words, four of which were semantically related and four which were not. Of the semantically related words, words with three different semantic relationships (paradigmatic,

syntagmatic and analytic) were chosen. Results indicated a link between vocabulary knowledge depth and what lexical inferencing strategy was employed. Those with a stronger vocabulary knowledge depth used certain types of lexical strategies more frequently than those with a weaker depth of vocabulary knowledge.

To test the vocabulary depth of university students, Read (1993) developed a WAT task involving an interview where students would articulate orally their knowledge of certain facts of a word's meaning. He found that this oral method was too imprecise. Per a suggestion by Meara (1983), he developed a WAT that provided the language student 40 stimulus words from the University Word List (Nation, 1990), accompanied by a set of carefully chosen eight words, four of which were related to the stimulus word and four which were not. He found that this to be test to be statistically reliable and was a good predictor of vocabulary depth.

Verhallen and Schoonen (1998) created a task comparable to WAT but more age-appropriate for language learners in the elementary grades. Instead of the eight options given by Read (1993), their test included six optional answers arranged in a visually appealing way, with the six options arranged in squares around the stimulus word. The test taker would choose three responses from among the six options and draw a line from their response to the stimulus word.

Building upon his earlier work, Read (1998) created another WAT task, to determine word knowledge in advanced English learners. As in his earlier work (Read, 1993), this test included 40 stimulus words followed by eight options. In this test, however, the options were arranged in two boxes, each with four words. Qian (2002) found this test to have a high correlation coefficient with a well-known vocabulary test (VLT).

This test by Read (1998) served as the basis for a study by Qian (2002), which he called the DVK (Depth of Vocabulary Knowledge), to determine the relationship between reading

comprehension and word knowledge depth. Similar to Read (1998), the test provided a stimulus word which was followed by eight options in two boxes. 74 Korean and Chinese advanced English learners took the test, along with a reading comprehension test. His study determined that vocabulary depth does in fact influence reading comprehension.

To determine the productive aspect of word knowledge, Meara and Fitzpatrick (2000) created Lex 30. This free association word association task included 30 highly frequent stimulus words chosen from Nation's (1990) first 1000 words list for which the test taker would give three related words. 46 adult English learners took the test in addition to a Yes/No vocabulary test. The results of the Yes/No test and the Lex 30 showed a correlation of 0.841 (P<0.01). The researchers concluded that their test measured non-native speaker's deep word knowledge effectively.

Using the WAT format by Read (1998), a study by Qian and Schedl (2004) attempted to ascertain the usefulness of DVK for creating a reading comprehension test. To do so, they compared the results of their word knowledge test with the TOEFL test's vocabulary section, using the same stimulus words in their DVK as found in the TOEFL. 207 international English as a Second Language university students took the DVK and TOEFL vocabulary test. Results indicated that the new measurement device was an accurate predictor of reading performance.

Schoonen and Verhallen (2008) determined that selective WAT tasks effectively measure word knowledge in elementary age children. 795 native and non-native Dutch speakers between the ages of nine to 12 took the WAT test, in Dutch. Older children were proven to have deeper word knowledge than their younger peers. In addition, in most cases L2 bilingual children demonstrated less deep word knowledge than L1 monolingual children.

For over 20 years, researchers have studied the use of WAT tasks to determine their effectiveness in determining vocabulary depth. Their continued use, and high statistical validity, indicate that the use of WAT tasks is an appropriate method to determine vocabulary depth in the children included in this study. To the researcher's knowledge, WAT tasks have not been used to study heritage speakers of Spanish.

Research Questions

The research questions that guide this study are: 1) How do heritage children use Spanish at home and in church activities as reported by parents and the children themselves? 2) How does frequency of use of Spanish at home affect vocabulary depth in 10-year-old heritage children? This chapter has highlighted studies pertinent to these questions by reviewing research on HL use in home and other environments, and vocabulary development and depth in heritage language speakers.

The next chapter describes the methodology used to address the research questions.

METHODOLOGY

This exploratory quantitative method study seeks to investigate the use of Spanish by heritage Spanish children at home and in church activities, and the effect of this language use on the development of vocabulary depth. This study was approved by Missouri State University's Institutional Review Board (IRB) on March 6, 2018 (Appendix A).

Participants

Participants in this study consisted of children and parents of Hispanic origin. Participants were recruited from the Springfield, Missouri area school system, considering the following selection criteria: 1) Spanish was spoken at home, 2) Spanish was considered a minority language in the participants' community, and 3) the Spanish heritage children were 10 years old.

To recruit participants, ESL teachers in the Springfield, Missouri metropolitan area were asked to help identify Spanish bilingual families that could fit the study criteria. Bilingual families were also recruited by members of the local Hispanic community by word of mouth. Spanish bilingual families who showed interest in participating in the study were then contacted by the researcher.

16 families participated in the study and one parent per family participated in the study. Of these 16 parents, one (6.3%) reported being American of Mexican descent, having the minority language as the primary language spoken at home. Four (25.0%) reported being Venezuelan, and 11 (68.8%) reported being Mexican. One of the parents (6.3%) reported having only one child 10 years old; two (12.5%) reported having four children between five and 13

years old; three (18.8%) reported having three children between five and 15 years old; and ten

(62.5%) reported having two children between seven and 17 years old. See Table 1 for detailed

information.

Table 1. Demographic Information about Parents and Children.

Parent's country of origin	Years living in the US	Children per family	Child's place of birth
Venezuela	4	2	Venezuela
Venezuela	9 months	2	Texas
Mexico	11	4	California
EEUU	11	4	Springfield
Mexico	17	2	Springfield
Mexico	18	1	Springfield
Mexico	18	2	Springfield
Mexico	14	3	Springfield
Mexico	14	3	Springfield
Mexico	11	2	Texas
Mexico	11	2	Texas
Mexico	12	2	New York
Mexico	12	2	California
Mexico	27	3	Springfield
Venezuela	17	2	Springfield
Venezuela	17	2	Springfield

Data was also collected from 16 10-year-old children, nine of which (56.3%) were female and seven (43.8%) were male. All the children were elementary students of fourth and fifth grades. One child (6.3%) was born in Venezuela; one (6.3%) in New York; two (12.5%) in California; three (18.8%) in Texas; and nine (56.3%) were born in Springfield, Missouri.

Materials

Two surveys were developed to measure language use of Spanish at home and in church activities by children, one for caregivers and one for the children. Caregivers also completed a language background questionnaire. Children also participated in a Vocabulary Depth Measure that was presented as a word recognition game. These instruments are described/provided below.

Parent Background Questionnaire. Participants from the parents group completed the Parent Background Questionnaire (Appendix B), consisting of nine questions. The questionnaire collected basic demographic information about the parents and their children, such as name, place of birth and length of residence in Springfield. The questionnaire was presented orally. Parents took an average of eight minutes to complete this questionnaire.

Parent Language Use Questionnaire. Mothers completed the Parent Language Use Questionnaire (Appendix C), which consisted of eight questions about the use of Spanish by the children at home with parents, siblings, and relatives; habits concerning use of Spanish through television and music; and habits concerning use of Spanish at church activities. All questions were formatted as a 4-point Likert scale, where 0 corresponded to "never," 1 for "almost never," 2 for "almost always," and 3 for "always." The questionnaire was presented orally.

Children Language Use Questionnaire. Participants from the children's group completed/responded to a Children Language Use Questionnaire (Appendix D) consisting of 17

questions, eight of which were meant to create rapport between the children and the researcher and nine that were designed to determine the children's use of Spanish in the home and with their extended family (grandparents and cousins). Children took an average of 10 minutes to complete the questionnaire. All questions were formatted as a 4-point Likert scale, where 0 corresponded to "never," 1 for "almost never," 2 for "almost always," and 3 for "always." The questionnaire was presented orally.

The children and parent interviews followed the criteria recommended by Van Lier (1989), according to which the 1) the interviews are scheduled and presuppose a previous disclosure about the nature of what will be discussed; 2) the interviews are understood to be on the record; 3) the interviewees understand that their comments will be shared with others and used to produce actionable results; and 4) one party asks questions and the other provides answers to the questions.

Vocabulary Depth Measure. The children completed the Vocabulary Depth Measure (Appendix E), which was presented to them as a word recognition game. The measure consisted of 16 high-frequency Spanish target words and 46 synonyms, as recommended by Coyne, McCoach, Loftus, Zipoli and Kapp (2009). The target words, believed to be used by 10-year-old native speakers of Spanish (Varela, Cabrea, Zarabozo, Larios & Gonzalez, 2013), were chosen from a bank of high-frequency words taken from the book *Enciclopedia Integral de Santillana* (Editorial Santillana, 2014).

This measure was adapted from the WAT test (Read, 1993) and consisted of a story created by the researcher called *Estudio de Arte* "Art Studio." The story contains 16 high frequency words, which include five nouns (*pintor* "painter," *pinceles* "brushes," *obras* "works," *museo* "museum," *borrador* "draft,"); six adjectives (*pequeño* "little," *caliente* "hot," *consciente*

"aware," *modernos* "modern," *familiares* "familiar," *seco* "dry,") and five verbs (*escoger* "choose," *trabajar* "work," *pintar* "paint," *dibujar* "draw," *aprender* "learn") as shown in Table 2. For each word, the children were presented with a series of two or three words from which they were asked to choose an appropriate synonym for the word in the story.

Before starting the "game," children were asked to give their oral consent (Appendix F) to participate in the study through the "game," and were given instructions orally. Children participated in the 'game" individually. After explaining to the child what they would be asked to do, they were read a story containing 16 high frequency words, which are commonly used by 10-year-old Spanish-speaking children and adults and thus would be familiar to a 10-year-old child. The children were then asked to choose the correct word for a given sentence. This test gauged their receptive vocabulary (words understood by the students when they read or hear them), and their productive vocabulary (words used correctly by the students when writing or speaking) (Cronbach, 1942). In this way, the test evaluated their knowledge of the word (vocabulary depth). For each of the high-frequency words, the child was asked to identify one synonym. The researcher confirmed that the child understood that a sentence's basic meaning should not change when substituting one word in the sentence with its synonym.

Procedure

The study was conducted by meeting with the parent participants and the child participants individually in one session each. Parents were present in all sessions with their children. Prior to participating in the study, the parent participants read and signed a consent form (Appendix G). The children also completed a consent form orally, read to them by the researcher (Appendix F).

Table 2. Target Words and Synonyms in the Vocabulary Depth Measure.

	Target words		Synonyms	
Nouns	Pintor	Artista	Cocinero	Pintura
	Pincel	Pintura	Brochas	Lápices
	Obras	Creación	Cuadros	Puentes
	Museo	Cuadros	Pinturas	Comida
	Borrador	Proyecto	Goma	Bosquejo
Adjectives	Pequeño	Niño	Adulto	Hijo
	Caliente	Quema	Frio	Caluroso
	Consciente	Despierto	Alerta	Inconsciente
	Modernos	Viejo	Nuevo	Actual
	Familiares	Conocido	Extraño	
	Seco	Húmedo	Mojado	Evaporado
Verbs	Escoger	Elegir	Apartar	Preferir
	Trabajar	Vaguear	Laborar	
	Pintar	Colorear	Pintar	Correr
	Dibujar	Delinear	Trazar	Retratar
	Aprender	Libros	Colegio	Educarse

After obtaining consent, the researcher met with one parent per family and the children. The sessions took place at the Springfield, Missouri Public Library, in the homes of participants, or in the researcher's home.

In each session conducted with the individual bilingual families, the participating parent completed the Parent Background Questionnaire first and then completed the Parent Language Use Questionnaire. This part of the session took approximately eight minutes. After that, in the same session, the researcher introduced herself to the child and asked the questions from the Children Language Use Questionnaire. This questionnaire took approximately 10 minutes to complete. Next, the child completed the Vocabulary Depth Measure. This activity took approximately 15 minutes to complete.

Coding

For the Parent and the Children Language Use Questionnaires, 0 was assigned when Spanish is never used, 1 when Spanish is almost never used, 2 when Spanish is almost always used, and 3 when Spanish is always used. For the Vocabulary Depth Measure, 0 was assigned for inaccurate responses and 1 for accurate responses.

Data Analysis

Descriptive statistics should be reported for all measures of language use and depth of vocabulary to answer RQ1. To answer RQ2 a Pearson (2-tailed) Product Moment Correlation and a Pearson's Product Moment Regression will be conducted with scores from the Vocabulary Depth Measure and results from the parent and children's language use surveys. All statistical analyses will be conducted using the SPSS 24 software.

RESULTS

This study asks two primary questions: 1) How do 10-year-old Spanish heritage children use Spanish at home and at church activities? and 2) How does use of Spanish at home and in church activities affect vocabulary depth in 10-year-old heritage children? To answer the first question, results from language-use surveys administered to children and parents are reported. To answer the second question, a Pearson (2-tailed) Product Moment correlation was conducted. Results are presented for each RQ separately.

RQ1: How do Heritage Children Use Spanish at Home and in Church Activities as Reported by Parents and the Children Themselves?

Results from the Parent Language Use Questionnaire. To answer the first question, percentage values were calculated for the following variables: the frequency with which the family uses Spanish to address the children; the frequency with which means of communication such as Spanish radio and Spanish television are used at home with the children present; and the frequency with which the children attend church activities where Spanish is commonly spoken.

Results showed that 15 mothers (93.8%) always spoke Spanish at home with their children; one mother (6.3%) usually spoke Spanish (and occasionally speaks English) with their children at home; two mothers (12.5%) reported that the fathers never spoke Spanish with their children, and only spoke the majority language with them; and 14 (87.5%) mothers reported that the fathers spoke only Spanish with their children. In addition, 100% of the parents reported that the grandparents communicated with their grandchildren in Spanish, as this is the language the grandparents were more comfortable speaking.

The parents were also asked what language the children used to communicate with their siblings (in families with more than one child). One child (6.7%) was an only child. Eight parents (53.3%) reported that their children never communicated with their siblings in Spanish and two parents (13.3%) reported that their children almost never communicated with their siblings in Spanish. Five parents (33.3%) reported that their children almost always communicated with their siblings in Spanish. Thus, of the homes studied, the parents reported that two-thirds of the children never or almost never spoke Spanish with their siblings. The parents also reported that 13 (81.3%) of their children's cousins always spoke Spanish with their children and three (18.8%) of the cousins almost always spoke Spanish with their children.

To gain a better understanding of the influence of Spanish in the home environment, the parents were asked whether they listened to Spanish-language music at home. One parent (6.3%) reported that they never listened to music in Spanish when their children were present and three (19.13%) almost never listened to Spanish music with their children. Two (12.6%) reported that they almost always listened to music in Spanish when their children are with them, and 10 (62.5%) reported they always listened to music in Spanish, especially while in the car. Thus, two-thirds of the parents reported that they always or almost always listened to Spanish music when their children were present.

Parents were also asked whether they watched television programs in Spanish with their children. One (6.3%) reported never watching television in Spanish, and nine (56.3%) almost never watched television in Spanish when their children were present in the home. Two (12.6%) always watched television in Spanish when their children were in the home, and four (25.0%) reported almost always watching television in Spanish when their children were present in the home.

Finally, regarding the parents' participation in church activities where the primary language is Spanish, two participants (12.5%) reported almost never attending Spanish-language church activities and three (18.8%) never attended Spanish-language church activities. 11 (70.1%) reported always attending Spanish-language church activities. This information is summarized in Table 3.

Table 3. Use of Spanish by Children at Home as Reported by Parent.

	0 Never	1 Almost never	2 Almost Always	3 Always
Mother addressing child	0 (0.0%)	0 (0.0%)	1 (6.3%)	15 (93.8%)
Father addressing child	2 (12.5%)	0 (0.0%)	0 (0.0%)	14 (87.5%)
Grandparents addressing child	0 (0.0%)	0 (0.0%)	0 (0.0%)	16 (100%)
Siblings addressing each other	8 (53.3%)	0 (0.0%	5 (33.3%)	0 (0.0%)
Cousins addressing the child	0 (0.0%)	0 (0.0%)	3 (18.8%)	13 (81.3%)
Listening to Spanish music in the child's presence	1 (6.3%)	0 (0.0%)	2 (12.6%)	10 (62.5%)
Watching television in Spanish with the child	1 (6.3%)	9 (56.3%)	4 (25.0%)	2 (12.6%)
Participation in Spanish church activities	3 (18.8%)	2 (12.5%)	0 (0.0%)	11 (70.1%)

Results from the Children Language Use Questionnaire. A survey was administered to the children to determine their use of Spanish at home. Results revealed that, regarding the language used to communicate with their mother, one (6.3%) reported almost never speaking Spanish with their mother; three (18.8%) reported always speaking Spanish with their mother; 12 (75.0%) reported almost always speaking Spanish with their mother; seven (43.8%) reported that they used English with their mother when they did not know the correct word in Spanish; and two (12.5%) reported that they use English phrases because they did not know how to translate them in Spanish.

Regarding the use of Spanish between children and their fathers, two children (12.5%) reported never speaking Spanish with their father; four (25.0%) reported always speaking Spanish with their father; and 10 (62.5%) reported almost always speaking Spanish with their father.

One child (6.3%) reported being an only child; three children (18.8%) reported almost always speaking Spanish with their siblings when their parents were present; six (37.5%) reported almost never speaking Spanish with their siblings; and six (37.5%) reported never speaking Spanish with their siblings, of which four (25.5%) reported that the dominant language among their siblings is English.

In addition, 15 children (93.8%) reported always speaking Spanish with their grandparents; one (6.3%) never communicated with their grandparents in Spanish, although their grandparents spoke Spanish to them. Regarding the language use among cousins, one (6.3%) reported never speaking Spanish with their cousins; four (25%) almost always spoke Spanish with their cousins; and 11 (68.8%) always spoke Spanish with their cousins.

Five children (33.3%) reported never speaking Spanish at church activities; four (25%) almost never spoke Spanish at church activities; and seven (43.8%) almost always spoke Spanish at church activities. Three (18.8%) reported never attending Spanish-speaking church activities while 11 (68.8%) reported attending church activities where Spanish was spoken. Two (12.5%) almost always attend church activities where Spanish was spoken but never spoke Spanish with their friends at these events. Of the group that does attend Spanish church activities, four (36.4%) reported almost never speaking Spanish at these events and seven (63.6%) almost always spoke Spanish at church activities where Spanish was spoken.

Regarding watching television in Spanish, two (12.5%) reported almost always watching television in Spanish; of these, one child only watched one specific Spanish-language program. Four (25%) reported almost never watching Spanish-language television, and nine (56.3%) never watched Spanish-language television. Finally, the children were asked about their reading habits in Spanish. Thirteen (81.3%) never read in Spanish, even though they reported being able to read in Spanish. One (6.3%) reported almost never reading in Spanish. Only two (12.5%) almost always read in Spanish because of their desire to learn how to read better in Spanish. This information is summarized in Table 4.

RQ2 - How does Frequency of Use of Spanish at Home Affect Vocabulary Depth on 10-year-old Heritage Children?

To answer the second research question, a Pearson (2-tailed) Product Moment linear correlation was performed with the scores of the depth of vocabulary measure and the results of the language use questionnaires. Language use was operationalized as 16 language use

categories reported by the mothers and the children themselves, including the children's use of

Spanish to address their mothers, fathers, siblings, grandparents, and cousins; the children's use

Table 4. Use of Spanish at Home as Reported by Children.

	0 Never	1 Almost never	2 Almost always	3 Always
Children addressing Mother	0 (0.0%)	1 (6.3%)	12 (75%)	3 (18.8%)
Children addressing Father	2 (12.5%)	0 (0.0%)	10 (62.5%)	4 (25%)
Children addressing siblings	6 (37.5%)	6 (37.7%)	3 (18.8%)	0 (0.0%)
Children addressing grandparents	1 (6.3%)	0 (0.0%)	0 (0.0%)	15 (93.8%)
Children addressing cousins	1 (6.3%)	0 (0.0%)	4 (25.0%)	11 (68.8%)
Children speaking Spanish in church activities	5 (31.3%)	4 (25%)	7 (43.8%)	0 (0.0%)
Children watching Television	9 (56.3%)	4 (25%)	2 (12.5%)	0 (0.0%)
Children reading in Spanish	13 (81.3%)	1 (6.3%)	2 (12.5%)	0 (0.0%)

of Spanish at church activities; the children's exposure to television in Spanish; and the

children's reading habits in Spanish. It also included the mothers' report of Spanish use in the

home: how the mothers, fathers, and grandparents address the children; how the children use

Spanish with their siblings; how the children's cousins use Spanish with the children; the

children listening to Spanish music; children watching television in Spanish; and children

participating in church activities where Spanish was spoken. Vocabulary depth was operationalized as a word recognition game consisting of 16 high-frequency Spanish target words and 46 synonyms, as described in the Methodology section. For language use variable percentage values were used. For vocabulary depth scores, raw overall accuracy scores were used. Descriptive statistics were also reported.

Vocabulary Depth Measure. Results from the Vocabulary Depth Measure revealed a mean accuracy score of 13.13 (SD=1.93), minimum score=10 (63%) and maximum score=16 (100%). Two children recognized all 16 (100%) of the words presented; three recognized 15 (93.9%) of the words; two recognized 14 (87.5%); two recognized 13 (81.3%) of the words presented; three recognized 12 (75%); three recognized 11 (68.8%); and one recognized 10 (62.5%) of the words. Regarding each word, 16 (100%) recognized the word *pequeño* "little," 16 (100%) recognized *pintor* "painter," 13 (81.3%) recognized *museo* "museum," 15 (93.5%) recognized *caliente* "hot," 16 (100%) recognized *pintar* "paint," eight (50%) recognized *moderno* "modern," 16 (100%) recognized *dibujar* "draw," 15 (93.5%) recognized *familiares* "familiar," 13 (81.3%) recognized *trabajar* "work," 12 (75%) recognized *consciente* "aware," 15 (93.5%) recognized *aprender* "learn," nine (56.3%) recognized *obras* "works," nine (56.3%) recognized *pinceles* "brushes," 15 (93.5%) recognized *seco* "dry," 13 (81.3%) recognized *escoger* "choose," and nine (56.3%) recognized *borrador* "draft." Raw scores for the vocabulary depth measure are shown in Table 5.

A Pearson (2-tailed) Product Moment correlation was conducted to examine the relationship between vocabulary depth and the different language use variables. The variables representing language use that entered the analysis were: children addressing mother in Spanish (V1), children addressing the father in Spanish (V2), children addressing their siblings in

Spanish (V3), children addressing their grandparents in Spanish (V4), children addressing their

cousins in Spanish (V5), children speaking Spanish at church activities (V6), children watching

television in Spanish (V7), children reading in Spanish (V8), the mother addressing the child in

Table 5. Accuracy Scores on the Vocabulary Depth Measure.

Child	Overall score	Percentage
1	16	100%
2	16	100%
3	15	93.5%
4	15	93.5%
5	15	93.5%
6	11	68.8%
7	13	81.3%
8	14	87.5%
9	11	68.8%
10	12	75%
11	10	87.5%
12	12	75%
13	14	87.5%
14	13	81.3%
15	12	75%
16	11	68.8%

Spanish (V9), the father addressing the child in Spanish (V10), siblings speaking Spanish among themselves (V11), grandparents addressing the child in Spanish (V12), cousins speaking Spanish with the child (V13), listening to Spanish music in the presence of the child (V14), watching television in Spanish with the child (V15), participating in church activities where language is Spanish (V16).

As shown in Table 6, there were no significant correlations between depth of vocabulary language use, except for a significant large correlation, r (16) = .6, p=.014, between depth of processing and parent's report on frequency of watching television in Spanish with the child. A Pearson's Product Moment regression analysis to show causal effects between language use and vocabulary depth was not conducted, since there were no significant correlations between depth of vocabulary and more than one type of language use.

Table 6. Correlation Between Vocabulary Depth and Language Use.

| | | Vocabulary Depth | | |
		Pearson Correlation	Sig. (2-tailed)	N
	V1	0.052	0.849	16
	V2	-0.039	0.887	16
	V3	0.201	0.456	16
	V4	0.017	0.949	16
	V5	0.42	0.106	16
	V6	0.264	0.324	16
	V7	0.247	0.357	16
	V8	0.018	0.946	16
Variables	V9	0.294	0.269	16
	V10	-0.076	0.78	16
	V11	0.279	0.296	16
	V12	.a	.	16
	V13	0.461	0.072	16
	V14	-0.089	0.742	16
	V15	.600*	0.014	16
	V16	0.155	0.565	16

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). a. Cannot be computed because at least one of the variables is constant.

DISCUSSION, LIMITATIONS AND CONCLUSIONS

Research question 1 asked what the language use of Spanish by 10-year-old heritage speakers at home and at church activities was, as reported by parents and the children themselves. In most of the participant families (93.8%), the primary language used by mothers at home was Spanish, and the mothers reported that they were the principal source of Spanish input (93.8%), compared to fathers (87.5%).

The mothers reported that 90.6% of the parents spoke only Spanish with their children (90.6%). The mothers reported that the frequency fathers spoke with their children in Spanish (87.5%) was not as high as the frequency the mothers themselves used Spanish with their children (93.75%). The children reported always using Spanish 21.9% of the time, and 68.8% reported almost always using Spanish with their parents; about 56.25% of the children used English when they did not know the corresponding word in Spanish. The mothers reported that 100% of grandparents spoke exclusively in Spanish with their grandchildren, and this interaction with their grandparents can serve to reinforce their proficiency in the HL. Results show, therefore, that the use of Spanish with parents was high, supporting findings in previous literature (Tseng & Fuligni, 2000). Results also show that the pattern of language use between parents and children in households with Spanish heritage children is similar to what has been found by Ramirez (1991) and Tseng and Fuligni (2000).

Regarding the use of Spanish between siblings reported by the children, results show that 75.2% of the children never or almost never spoke Spanish with their siblings. This also corroborates results from Ramirez (1991) and Kibler, Palacios and Simpson (2014). Ramirez (1991), for example, found that adolescents used English when speaking with their siblings.

Kibler, Palacios and Simpson (2014) studied older siblings' influence on their younger siblings and found that English is used more often than Spanish among siblings. Reports of Spanish language use from parents indicated that 66.6% of the children never or almost never spoke Spanish with their siblings—a lower number than that provided by the children themselves. Regarding the children's Spanish use with their cousins, 93.8% of participants reported using Spanish always or almost always in cousin-to-cousin interactions, whereas the parents reported a rate of 100% for the same language use. This means that research that actually measures language use at home may be necessary to complement reports from both children and parents, as those perceptions of language use may not be completely accurate. The results about HL use between cousins corroborate the study by Ramirez (1991) who found that heritage language speaking children's interaction in that language is narrowed to, among others, extended family who also speak the minority language.

In general, results indicate a considerable use of Spanish at home with different family members, which is conducive to HL development as stated by Lee and Wright (2014). Although the children reported not using Spanish very much with siblings, their interaction in Spanish with their cousins, parents, and grandparents is a positive indication of Spanish exposure at home, which is key to the maintenance of HLs (Montrul & Ionin, 2012). More research would have to be conducted to document the language production and communicative interactions between the children and family members to shed light on the quality and amount of Spanish input children receive at home. Also, this study has not investigated language proficiency among the sampled Spanish heritage children, so we cannot draw any conclusions as to their language use and their overall language development.

Besides looking at Spanish used among family members, this study also examined the children's exposure to television programs and radio (music) in Spanish. Results show that 62.5% of the households never or almost never watch Spanish language television, coinciding with the observation by Ramirez (1991) that most of the television viewed by adolescent heritage speakers in the United States is in English 12.6% almost always and 62.5% always listen to Spanish music on the radio. Additional studies will need to be done to find the effect of listening to music on the radio on HL proficiency.

Another type of language use investigated in this study was the children's participation in church activities where Spanish was spoken. Results show that 70.1% of the parents always participate in Spanish church activities. The study indicated that while 68.8% of the children never or almost never speak Spanish at these events. This runs counter to the study by Ramirez (1991) who reported that adolescent heritage language speakers used Spanish at church. Therefore, additional research into this specific area is needed to more tightly describe the link between attending church activities and maintaining HL proficiency.

Research question 2 asked how language use at home affected the vocabulary depth of HL Spanish in 10-year-old children. Vocabulary depth was defined as the how well words are known (receptive and productive knowledge) (Read, 1993). Results from the Vocabulary Depth Measure showed an average 84.19% accuracy rate. Almost a third of the participants (31.3%) recognized more than 90% of the words; 75% of the participants recognized at least 75% of the words; and all the participants were able to recognize more than 50% of the words presented.

It is important to note that the results of the Vocabulary Depth Measure can only be interpreted as an indication of high or low ability if compared to results for 10-year-old native

speakers of Spanish. Because we have only collected data from heritage children, these data can only be understood as an indirect indication of how well these children speak Spanish.

Results from the Vocabulary Depth Measure were analyzed to investigate if language use had an effect on the development of vocabulary depth in heritage children. All language use categories as reported by both parents and children entered a correlation with the vocabulary depth scores, but the only significant correlation found was between vocabulary depth and exposure to television in Spanish with a parent, r (16) = .6, p =.014. Overall, these results were surprising, given the fact that language use among family members has been found in other studies to correlate with language development in heritage speakers (Koolstra & Beentjes, 1999; Ramirez, 1991; De Bot, Jagt, Janssen, Kessels & Schils, 1986). For instance, Lee and Wright (2014) reported that the most important factor in both maintaining language proficiency and passing the HL on to future generations is the influence of a child's parents, grandparents or family members. Ishizawa (2004) also studied the influence of living with grandparents on HL maintenance and found that living in a three-generation household where the grandparents speak a non-English language is a contributing factor in language maintenance. However, these results were not repeated in this study. Since the literature shows that language exposure at home relates to HL development, other factors may have affected the results, such as the sample size, measures of language use and vocabulary depth.

One on hand, it is possible that the small sample in the children's group, consisting of 16 participants, was not enough to yield significant results in the Pearson (2-tailed) Product Moment correlation. It is also possible that the measure of vocabulary depth did not capture the actual knowledge of children due to limitations in the design of the study. It is possible, for example, that the target words and synonyms chosen are not commonly used in the home with family and

at church activities. Along those lines, it is possible that the multinational nature of the group studied influenced the results, since certain vocabulary can vary widely among different Spanish-speaking countries. Therefore, a more generic choice of target words and synonyms may have been preferable.

In addition, it is possible that the questions asked of the parents and the children were not adequate to procure accurate data regarding language use. Beyond that, a more detailed coding procedure with a greater number of choices could possibly have captured language use distinctions not found in the present study. Another point to consider is the use of a 4-point Likert scale. By contrast, Cooper and Greenfield (1969), used an 11-point Likert scale to determine language use, a 7-point Likert scale to determine the influence of Spanish and English, and a 6-point scale to determine vocabulary depth.

Other measuring instruments may have produced different results as well. Tseng and Fuligni (2000), for example, used open-ended questions with Asian, Filipino and Latin American adolescent heritage speakers to determine the language used when speaking with their parents. Ishizawa (2004) used Census data to determine the influence of grandparents living at home with heritage language speakers aged five to 17. Neither of these studies, however, addressed language use among 10 year olds, so it is not clear whether the methods used in these studies produce better measures of language use with young children. Additional research into language use among children of this age group will be necessary to determine the usefulness of these instruments.

In fact, in designing an instrument to measure language use in the target population of this study (10-year-old Spanish heritage speakers), the researcher noted a scarcity of studies of that particular age group. This shortage of information makes it difficult to assess other's

findings regarding correlation between vocabulary depth and language use in children of a similar age range as in this study. Additional research is required to provide broader information on the correlation of vocabulary depth and language use.

The study also reveals the limited effect that involvement in Spanish-speaking church activities has on the child-participants' vocabulary depth. 56.3% of the children reported never or almost never speaking Spanish at these events, while 43.8% reported almost always speaking Spanish at these events. This contrasts with Ramirez's (1991) study of Hispanic adolescents living in ten urban centers of high Hispanic population the United States. He found that (with one exception) the predominate language used by the subjects in religious services was Spanish. It is possible that the lower incidence of speaking Spanish in this study is a function of the small Hispanic population in Springfield, Missouri compared to the Hispanic population in the study by Ramirez (1991). Additional research into language use among Hispanic children and adolescents in religious services in areas where the Hispanic population is not large will shed light on whether the results of this study are representative. One factor to consider is that the children's exposure to the language in church worship services is passive, where they hear the language but do not speak it. In catechism classes at church their use of Spanish does not go beyond hearing questions in Spanish and answering them in Spanish.

One reason why the children's involvement in Spanish church activities may not have helped with language development is that, although 70.1% of the parents attend Spanish-speaking churches, 56.3% of the children report that they never or almost never speak Spanish at these church activities, showing that their exposure to Spanish was mostly receptive. It might even be possible that children did not pay too much attention to the Spanish input at church.

Another factor that may have influenced results is lack of more detailed data about the use of language during church functions and other community gatherings.

Although language use between children and members of their family or language use in church activities did not show any correlation (and, therefore, no causal effect) with depth of vocabulary, a significant correlation was found between exposure to Spanish via television programs and depth of vocabulary r (16) = .6, p= 0.14. These results support the findings from Koolstra and Beentjes (1999) who reported that television is an important medium for HL vocabulary development at home. Koolstra and Beentjes (1999) looked at Dutch children in fourth through sixth grade that measured vocabulary acquisition and recognition of English words, using an English vocabulary language test, an English target vocabulary test, a 30-item auditory word recognition test and a Likert scale to determine how often they watched subtitled television programs at home. They found that watching sub-titled television helped children with second-language acquisition. Additionally, De Bot, Jagt, Janssen, Kessels and Schils (1986), using a 42-question multiple choice test, found in a study of Dutch children that watching television in English with subtitles influences second-language acquisition.

Possible reasons for the beneficial effect of television viewing are increased exposure to new vocabulary through the medium of entertainment and enhanced practice of listening skills. These results also align with Ramirez's (1991) observation that most of the television viewed by adolescent heritage speakers in the United States is in English, having a negative impact on the preservation of heritage Spanish. These results, however, need to be interpreted with caution as no detailed information about the exposure via television was provided. Parents did not provide information about the exact number of hours, type of program, level of engagement of children with the TV show, etc.

Despite the positive results found for watching television in Spanish, no significant correlation was found for exposure to Spanish through music on the radio. The findings on reading contrasts with Rodrigo (2009), whose study of 44 subjects indicated that reading had a positive effect on vocabulary acquisition. Possible reasons for this discrepancy are that the children in this study report that, although they can read in Spanish, they do not like to read in Spanish. 81.3% of the children reported never reading in Spanish.

Conclusion

Language loss is a critical issue in the study of HLs, and language maintenance in heritage speakers is closely linked to language use at home (Ishizawa, 2004; Ramirez, 1991). This study sought to contribute to this body of literature by investigating different ways 10-year-old heritage children used Spanish at home and at church in bilingual families in the state of Missouri. Although considerable research has been done to investigate the language of heritage speakers in different parts of the United States (Montrul & Ionin, 2012; Silva-Corvalán, 1994; Lynch, 2003), little is known about language maintenance of Spanish heritage speakers in this area. Reports about language use were collected from both children and their parents to provide a deeper understanding of the phenomena. Overall results show that Spanish is spoken at home by a majority of children and their parents, even though siblings showed a preference for English when conversing among themselves, a pattern well documented in the literature (Ramirez, 1991; Kibler, Palacios & Simpson, 2014; Eunjeong, 2013).

Results for vocabulary depth showed high scores for most children, but the lack of data from native speakers of the same age group did not allow us to make any conclusions of the significance of these results, even though the vocabulary items tested were believed to be known

by 10-year-old native speakers. Our hypothesis that development of vocabulary depth would be affected by language use was not confirmed in this study. We were able to show that exposure to TV shows in Spanish at home correlated with vocabulary depth, but since none of the other variables showed positive correlations with vocabulary depth, we were not able to show any causal relationship.

Despite the lack of positive results, the overwhelming number of studies showing effects for language use at home (Tseng & Fuligni, 2000; Ramirez, 1991; Eunjeong, 2013) suggest that the relationship between depth of vocabulary and language use warrants further investigation. It would be presumptuous, based on this particular sample of participants, to assume that language use at home has no effect on the development of vocabulary depth. Future studies should perfect the measure of depth of vocabulary, by adding more target words and using a more fine-grained coding procedure or including other measures of general proficiency. Future research could also use larger participant samples, expand the language use questionnaire to collect more detailed data, or utilize ethnographic interviews that would allow researchers to better understand language use of Spanish heritage children at home and church activities.

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APPENDICES

Appendix A: Human Subjects IRB Approval

Appendix B: Parent Background Questionnaire

1. *¿Cómo te llamas?*

   What is your name?

2. *¿Dónde naciste?*

   Where were you born?

3. *¿Cuánto tiempo tienes viviendo en Springfield?*

   How long have you lived in Springfield?

4. *¿Cuántos hijos tiene?*

   How many children do you have?

5. *¿Qué edad tienen?*

   How old are they?

6. *¿Dónde nació tu hijo(a)?*

   Where was your child born?

7. *¿Quiénes viven en su casa?*

   Who lives in the home with you?

8. *¿Ve/observa la televisión en español?*

   Do you watch television in Spanish?

9. *¿Asisten a actividades en la iglesia?*

   Do you attend church activities?

¡Muchas gracias por su participación!

Thank you very much for your participation!

Appendix C: Parent Language Use Questionnaire

1. *¿Le habla Ud. español a su* hijo (a)? *¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

   Do you speak Spanish to your children? Always? Almost always? Almost never? Never?

2. *¿Le habla su esposo español a su hijo(a)? ¿Siempre? ¿Casi siempre?¿Casi nunca? ¿Nunca?*

   Does your husband speak Spanish to your children? Always? Almost always? Almost never? Never?

3. *¿Hablan los abuelos en español a sus hijos?¿Siempre?¿Casi siempre?¿Casi nunca? ¿Nunca?*

   Do the grandparents speak Spanish to your children? Always? Almost always? Almost never? Never?

4. *¿Sus hijos hablan español entre ellos? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

   Do your children speak Spanish among themselves? Always? Almost always? Almost never? Never?

5. *¿Sus primos hablan español con sus hijos? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

   Do their cousins speak Spanish with your children? Always? Almost always? Almost never? Never?

6. *¿Escucha música en español cuando sus hijos están en casa? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

   Do you listen to music in Spanish when your children are at home? Always? Almost always? Almost never? Never?

7. *¿ Están sus hijos a su alrededor cuando Ud. observa la televisión? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Are your children present when you watch television? Always? Almost always? Almost never? Never?

8. *¿Su hijo(a) habla en español durante actividades en la iglesia? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Do your children speak Spanish at church activities? Always? Almost always? Almost never? Never?

Gracias por su participacion.

Thank you for your participation.

Appendix D: Children Language Use Questionnaire

1. *¿Cómo te llamas?*

    What is your name?

2. *¿Cuántos años tienes?*

    How old are you?

3. *¿En qué grado estas?*

    What grade are you in?

4. *¿Quiénes cuantos hermanos tienes?*

    How many siblings do you have?

5. *¿Te gusta hablar español?*

    Do you like to speak Spanish?

6. *Cuando estás en tu casa: ¿hablas español con tu mama? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

    When you are at home, do you speak Spanish with your mom? Always? Almost always? Almost never? Never?

7. *Cuando estás en tu casa: ¿hablas español con tu papa? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

    When you are at home, do you speak Spanish with your mom? Always? Almost always? Almost never? Never?

8. *Cuando estás en tu casa: ¿hablas español con tu hermano (a)? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

When you are at home, do you speak Spanish with your siblings? Always? Almost always? Almost never? Never?

9. *¿Hablas español con tu abuelo? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Do you speak Spanish with your grandparents*?* Always? Almost always? Almost never? Never?

10. *¿Hablas español con tus primos? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Do you speak Spanish with your cousins? Always? Almost always? Almost never? Never?

11. *¿Te gusta ver televisión?*

Do you like to watch television?

12. *¿Cuándo ves televisión la escuchas en español? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

When you watch television, do you listen in Spanish? Always? Almost always? Almost never? Never?

13. *¿Te gusta leer?*

Do you like to read?

14. *¿Lees libros en español? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Do you read books in Spanish? Always? Almost always? Almost never? Never?

15. *Cuándo estás con tu familia, tíos, primos, abuelos, ¿qué idioma prefieres hablar?*

When you are with your family, aunts and uncles, grandparents, in what language do you prefer to speak?

16. *¿Asistes a actividades en la iglesia?*

Do you attend church activities?

17. *¿Hablas español en esos eventos? ¿Siempre? ¿Casi siempre? ¿Casi nunca? ¿Nunca?*

Do you speak Spanish at these events? Always? Almost always? Almost never? Never?

Gracias por tu ayuda.

Thank you for your help.

Appendix E: Vocabulary Depth Measure

Estudio de Arte

Una mañana soleada del mes de abril, mi mamá nos dio una gran sorpresa, el día que mi pequeño hermano Francisco y yo estábamos esperando. "Hoy vamos a conocer a Marcelo, un pintor famoso que abrió su Museo de Arte en nuestra ciudad" dijo mi mama.

Salimos contentos de la casa a nuestra aventura de la mano de mama, el día estaba caliente, ya estábamos en la primavera. Camino al museo recordábamos que siempre nos ha gustado pintar con colores, acuarelas y acrílico, a mi hermano le gusta los estilos modernos, casi abstractos, a mí me gusta dibujar objetos que son familiares fáciles de identificar.

Por fin llegamos al Museo, con unas ganas inmensas de comenzar a trabajar, pero no estábamos conscientes de que deberíamos aprender estilos, nombres de pintores y sus obras antes de comenzar nuestra obra de arte.

Marcelo nos enseñó su primera pintura, una acuarela en la que utilizo los pinceles de su papa, también aprendimos técnicas de pintura mural a fresco y a seco. Ya listos para comenzar a pintar, escogimos el tema de nuestra pintura, hicimos un borrador, y lo pintamos en el lienzo.

¡Fue un día inolvidable! ¡Un día que Francisco y yo nunca vamos a olvidar!

Art Studio

One sunny April morning, my mother gave us a big surprise, the day that my little brother Francisco and I had been waiting for.

"Today we're going to meet Marcelo, a famous painter who opened his Art Museum in our city," my mother said.

Happy, we left our house on our adventure holding our mother's hand. The day was hot since it was already Spring. On the way to the museum we remembered how we always like to

paint with colors, watercolors, and acrylics. My brother likes modern styles, almost abstract, but I like to draw objects that are familiar and easy to identify.

Finally we arrived at the Museum, very eager to start to work, but we weren't aware that we should learn other styles, painters' names and their works before starting our art work.

Marcelo showed us his first painting, a watercolor that he used his father's brushes. We also learned techniques for   Now ready to start painting, we chose the subject of our painting, we did a draft, and we painted on the canvas.

It was an unforgettable day! A day that Francisco and I will never forget!

Appendix F: Children Oral Consent

Spanish version:

Quiero invitarte a participar en una conversación y un juego en español. Durante la conversación quiero que me cuentes con quien hablas español, tanto en casa como en el colegio. Después jugaremos un de juego en español. ¿Te gustaría participar?

English version:

I want to invite you to have a conversation with me and play a game in Spanish. During our conversation I want you to tell me with who you speak Spanish, both at home and at school. Then we will play a game in Spanish. Would you like to do this?

Appendix G: Parent Consent Form

Missouri State University
College of Modern and Classical Language
Vocabulary Depth and Language Use of Heritage Learners

Introduction

 You have been asked to participate in a research study. Before you agree to participate in this study, it is important that you read and understand the following explanation of the study and the procedures involved. The investigator will also explain the project to you in detail. If you have any questions about the study or your role in it, be sure to ask the investigator. If you have more questions later, Elsy Shuford, the study's principal investigator, will answer them for you. You may contact the investigator(s) at:

Dr. Luciane Maimone: LucianeMaimone@MissouriState,edu.
Elsy Shuford: shuford2002@live.missouristate.edu.

You will need to sign this form granting your permission to be involved in the study. Taking part in this study is entirely your choice. If you decide to take part but later change your mind, you may stop at any time. If you decide to stop, you do not have to give a reason and there will be no negative consequences for ending your participation.

Purpose of this Study

The reason for this study is to explore the vocabulary knowledge of 10-year-old Spanish heritage speakers in elementary grade schools in Springfield, Missouri, and the relationship of their vocabulary knowledge with their language use at home.

Description of Procedures

If you agree to be part of this study, you understand that
1. Parents or caregivers will be interviewed to determine language use in the home. The interview will last no more than 30 minutes.
2. The child (children) will engage in conversation and games in Spanish, to determine how they use Spanish. The total time spent with the child (children) will be no more than 45 minutes.
3. Only the research staff will have access to information from your child.

What are the risks?
There are no known risks or direct benefits from participation in this study.

How will my privacy be protected?

The results of this study are confidential and only the investigators will have access to the information which will be kept in a locked facility at the University. Your name or personal identifying information will not be used in any published reports of this research. All information gathered during this study will be destroyed 2 years after the completion of the project.

Consent to Participate

If you want to participate in this study, "Vocabulary Depth of Spanish heritage speakers in Elementary Grades", please sign below:

I have read and understand the information in this form. I have been encouraged to ask questions and all of my questions have been answered to my satisfaction. By signing this form, I agree voluntarily to participate in this study. I know that I can withdraw from the study at any time. I have received a copy of this form for my own records.

_____   _____
Signature of Participant   Date

_____
Printed Name of Participant

_____   _____
Signature of Person Obtaining Consent   Date