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# Investigation of Bilingualism Knowledge of Speech-Language Pathologists and Speech-Language Pathology Students

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INVESTIGATION OF BILINGUALISM KNOWLEDGE OF SPEECH-LANGUAGE

PATHOLOGISTS AND SPEECH-LANGUAGE PATHOLOGY STUDENTS

A thesis submitted in partial fulfillment of

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by

Michelle Leon

2015

To:   Dean Ora Strickland
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This thesis, written by Michelle Leon, and entitled Investigation of Bilingualism Knowledge of Speech-Language Pathologists and Speech-Language Pathology Students, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this thesis and recommend that it be approved.

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ABSTRACT OF THE THESIS

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PATHOLOGISTS AND SPEECH-LANGUAGE PATHOLOGY STUDENTS

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Professor Ana Gouvea, Major Professor

The purpose of this thesis was to administer a survey to obtain information on practicing Speech-Language Pathologists' (SLPs) knowledge of bilingual issues, while also considering whether any academic background on bilingualism guides SLP's diagnostic and treatment options. This was done by comparing survey results of practicing SLPs with different academic backgrounds on bilingualism with current Master's students registered at the Communication Sciences and Disorders Masters' program at Florida International University (FIU). The survey consisted of 26 questions that examined participant's history, and bilingual knowledge.

Data was collected from 89 surveys. Data analyses showed that students and SLPs with a strong educational background on bilingualism had a tendency to prefer answers that correspond to recent research findings on bilingualism than students and SLPs with no or little educational background on bilingualism. These results suggest that academic

background on bilingualism guides assessment interpretations and treatment options of

bilingual clients.

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# CHAPTER I

# REVIEW OF LITERATURE

**Introduction**

The United States is becoming a pluralistic society and if this trend continues, white non-Latinos will be the largest minority by year 2080. Bilingualism is becoming the norm rather than the exception in the United States. With the growth of the bilingual population, it is important that Speech Language Pathologists (SLPs) are educated about bilingual topics such as bilingual language development, bilingual disorders, and bilingual assessments and interventions. In its scope of practice, the American Speech-Language-Hearing Association emphasizes the importance of this topic. "As the population profile of the United States continues to become increasingly diverse (U.S. Census Bureau, 2005), speech-language pathologists have a responsibility to be knowledgeable about the impact of these changes on clinical services and research needs" (American Speech-Language-Hearing Association, 2007, p. 4).

Thus, an SLP must always take into account the vast amount of influences on communicative abilities in order to successfully evaluate, diagnose and treat. It is fundamental to be able to comprehend what is considered within normal limits of a targeted population before being able to understand deficit symptoms. This is especially true for special populations, including the multilingual population. SLPs should have a basic understanding of the impact of acquiring an additional language on the different facets of language in order to successfully distinguish if there is a delay or disorder present. (Paradis, Genesee, & Crago, 2011)

The purpose of this study is to investigate the knowledge of practicing Speech Language Pathologists (SLPs) on bilingualism. This is valuable information as it influences the delivery of therapy, therapy language selection, and advice given to families about home-language use. The focus of this study is the SLP's understanding of bilingual development, evaluation and treatment. SLPs are compared in terms of history of formal bilingual education to establish whether this preparation influences SLPs' practice with bilingual clients.

**Language Acquisition and Bilingualism**

An important topic on bilingualism is related to language development. Specifically, it is valuable to know whether bilingual children go through the same stages of language acquisition at the same time as monolingual children. One of the first theories to discuss this topic hypothesized that bilingual children have a single system that combines the words and the grammatical rules of the two languages they are acquiring. Later, vocabularies are separated and finally, the system of grammatical rules would become differentiated, around age three. This position is known as the Unitary Language System Hypothesis (Volterra & Taeschner, 1978). Until 1989, the Unitary Language System Hypothesis dominated the literature on the nature of language representation in a child. Volterra and Taeschner (1978) based their hypothesis on the fact that bilingual children code-mix. In other words, bilingual children use elements of the two languages in the same sentence or during a conversation. Because bilingual children use few translation equivalents in the early stages of development, Volterra and Taeschner (1978) hypothesized that their language systems are not separated.

Thus, following the Unitary Language System Hypothesis, code-mixing would be expected regardless of conversational partners and independent of grammatical rules. Genesee et al. (1995) was the first to examine whether bilingual children code-mix because they cannot differentiate their languages. These researchers examined how bilingual children use their two languages with their conversational partners and found that children switch languages correctly depending on who they are speaking with. For example, for parents who apply the "one parent/person one language" approach (e.g. mother decides to speak in one language, such as English to the child, while the father speaks in the other language, such as French) children do not confuse and mix both languages regardless of their conversational partner. Instead they frequently speak the correct language to the parent, for example, following the scenario given previously, the child would speak English to the mother and French to the father. Genesee et al.'s (1995) results show that bilingual children use their two languages in a context-sensitive manner. These results are incompatible with the Unitary Language system hypothesis.

Another observation is when children code-mix, there is a tendency to do so in an appropriate syntactic order showing underlying knowledge of the grammatical rules from each language. Meisel (1994) observed code-mixing in two French and German bilinguals. They correctly used the grammatical restraints of both languages, specifically subject-verb agreement through the correct use of the early verb inflection (Bradley, 2011). Other researchers have presented similar results with different grammatical systems such as English and French (Sauve & Genesee, 2000; Paradis, Nicoladis, & Genesee, 2000); English and Norwegian (Lanza, 1997); English and Estonian (Vihman, 1998), and Inuktitut and English (Allen, Genesee, Fish, & Crago, 2002). Additionally,

children increase code mixing when it is viewed positively in the community; thus, code-mixing is also governed by the pragmatic use of the community (Genesee & Nicoladis, 2005).

The findings of Genesee and colleagues on code-mixing lend support to Genesee's theory that bilingual children develop the grammatical systems of their languages separately from the onset of acquisition. This position is known as the Dual Language System Hypothesis (Genesee, 1989). This view does not include stages of language unification but instead, distinctive linguistic systems from the onset of acquisition (Paradis, Genesee, & Crago, 2011). It hypothesizes that from infancy, there is a comprehensive ability to distinguish phonological systems from each language found in their environment from ages 10-12 months (Burns, Yoshida, Hill, & Werker, 2007). It expects expressive production to reflect an understanding of the separation of languages, including separate grammatical systems and lexicon. Although "separate", this hypothesis does not discard some interconnectivity among languages. The Dual Language System Hypothesis has gained the most support from recent research on speech perception, phonology, vocabulary, and morphosyntax (Paradis, et al. 2011).

Burns, Yoshida, Hill and Werker (2007) found that infants, 10-12 months of age, had the perceptual capacity to detect slight language-specific phonological differences between [p] and [b] production of English and French. Paradis (2001) tested the phonological production of English-French in 18-month old bilinguals. The researchers created nonsense words within the limitation of each language's phonological systems. They were able to conclude that children have separate phonological systems secondary

to the participants' production. The bilingual children omitted syllables differently in English and French, similar to monolinguals' productions in each language.

Pearson, Fernandez, and Oller's (1993) findings revealed comparable vocabulary sizes between bilinguals and monolinguals in both languages. Even if a bilingual child is dominant in one language, they will likely continue to have words unique to the other language (singlets). They used Total Vocabulary (lexicon from each language, however, phonetically similar words , such as "choo-choo" were considered once) and Total Conceptual Vocabulary measures (single concepts from each language, repeated concepts were counted once) and determined that English-Spanish bilingual productions in both languages were similar to monolingual productions in both measures. Evidence of separate vocabularies can also be found by the presence of translation equivalent words (words in both languages with the same meanings). Pearson, et al. (1995) found an average of 30% translation equivalents in bilingual toddlers' early-stage vocabularies.

Paradis, Nicoladis, and Genesee (2000) tested the morphosyntax of English-French 2-4 year old bilinguals by observing the negative markers. English grammar rules indicate the negative marker *not* typically goes between the main verb and an auxiliary verb, while French grammar regulates a different order: the negative marker *pas* goes after the main verb. They only found occasional misuse of the negative markers, demonstrating separate morphology and syntax in each language. Thus, recent research on bilingual language development suggests that bilingual children establish two language systems at the onset of acquisition and are not confused about their two languages.

**Understanding Bilingual Patients and SLP Practice**

  **Bilingual Patients.** Prior to planning clinical intervention and practice, the clinician should have an understanding of the complexity of being bilingual and take into consideration both languages of a bilingual client. For example, it is important to understand whether the client is a simultaneous bilingual or a second language learner (sequential bilingual). According to Paradis, et al. (2011), a simultaneous bilingual learner is a child who learned two or more languages from birth or before age three. A second language learner or sequential bilingual is a child who begins to learn an additional language after the age of three, or in other words, after the first language has been established. Thus, the type and amount of language exposure the client has received and the age of second-language (L2) acquisition are also important considerations.

  **SLP Efficacy.** Kritikos (2003) investigated SLPs' core beliefs that have been identified as influential in evaluation choice. The study focused on SLPs' beliefs in assessing bilingual/bicultural patients. The SLPs were grouped accordingly into Monolingual (M), Bilingual (through cultural experience; CE) and Bilinguals who learned a second language within an academic context (AS). The majority reported low personal efficacy for adequately evaluating bilingual patients and also felt other SLPs would show low effectiveness (general efficacy) with bilingual assessment. However, knowing a second language had a positive impact on the personal efficacy level between groups; the CE group had the highest, followed by the AS and the M group reported the lowest. "In terms of what they would like to have to improve their work, participants noted seminars most often (87%), more courses (85%), and access to bilingual SLPs (85%), followed closely by practicum (84%), recruitment (83%), and articles (70%)"

(Kritikos, 2003). There was not a significant difference for general efficacy findings between the three groups but lack of knowledge was chosen most often as an influential factor. Approximately 40% responded less likely to recommend a bilingual child for language intervention compared to a monolingual child secondary to efficacy issues, with no significant differences found between the groups  (Kritikos, 2003).

**Assessment.** Often, for qualification of services, standardized measures are a necessity in the evaluation procedure in order to initate services; however, "research indicates that the norms used for monolingual children in static measures (i.e., standardized measures) do not apply to bilingual /multicultural populations" (Kapantzoglou, Restrepo, & Thompson, 2012).  It is frequently reported that English Language Learners (ELLs) are overrepresented within special education classes. Valenzuela, Copeland, Qi, and Park (2006) found that a majority of the population of ELL students were hispanic. It is probable that there were lack of modifiications catering to the ELL students' culture during the evaluation process and that standardized testing was done in the mainstream language  (Peña, Gillam, Bedore, & Bohmana, 2011). The implementation of dynamic assessment provides a flexible and reliable way of evaluating underlying learning skills, such as fast mapping and phonological awareness, that are not necessarily reliable on a specific language exposure (such as vocabulary size). Dynamic assessment also measures the patient's motivation and zone of proximal development, or learning potential  (Kapantzoglou, Restrepo, & Thompson, 2012).

Skahan, Watson, and Lof (2007) had similar findings in an investigation in which the assessment procedures of English Language Learners (ELL) children suspected of having speech sound disorders were examined through surveying 1000 SLPs. Of 110

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who reported having "non-native English speakers" in their caseloads, their findings revealed informal procedures were the most frequently used method (67%), followed by the use of English-only standardized tests (35%). Nineteen percent of the SLPs claimed using standardized tests in the patient's native language, and 11% indicated developing local norms (Skahan, Watson, & Lof, 2007).

In another study, which focused on School- Based SLPs respondents, "informal procedures were used consistently by at least 10% of the respondents [from the total questionnaires used (n=130)]" (Caesar & Kohler, 2007, p. 194). Results also showed that contrary to the thought of assessing in one language due to inadequate material available, seventy-five percent of responding SLPs reported that English was the language of the test or procedure they used most frequently when testing bilingual children. This was reported to occur even when Spanish versions of the tests existed  (Caesar & Kohler, 2007). It should be noted that the participants all resided in Michigan and 95% identified themselves as monolingual.

Aguilar (2013) investigated common assessment methods for bilingual patients. Assessment methods were self-identified by 435 SLPs in a 5 point scaled-survey by Aguilar (2013). The following percentages are from those marked as "'most of the time'; Language sampling 31%, dynamic assessment 31%, criterion-referenced tests 26%, adaptation of standardized tests 25% and ethnographic interviews 19%" (Aguilar, 2013). Secondly, interpreters were seldom used (18% reported one present in either the assessment or treatment sessions) and thirdly the majority of the interpreters present had not received professional training, as many were family members

**Intervention.** Some research has revealed that bilingualism does not impede language development in children with or without language impairments (Paradis, 2010). However, in a survey based on 99 SLPs in 13 different countries, the majority reported that they often provide intervention in one language  (Jordaan, 2008). Aside from resource factors, two of the major influences in the decision of language of intervention were the primary school's language, the parental insistence of language maintenance, and the community's status relative to the native language. The clinician's language limitation played an important role (74% of the SLP participants were monolinguals); however, many supplemented the lack of exposure to both languages in therapy by advising the parents to only speak L1 at home. Jordaan (2008) concluded that this was promising for the maintenance of the L1 however, it does not directly promote a bilingual environment, and it could be suggestive of SLPs' continued doubt over the ability of children to cope with the exposure to both languages simulateneously. Lastly, the results suggest clinician practices with bilingual children may not be based on research findings from bilingual literature  (Jordaan, 2008).

The abovementioned survey shed light on three common constraints dealing with bilingual caseloads. Evaluation is often done in only one language, which may be thought to be due to a limitation of testing resources in various languages. Reportedly, this leads to informal testing of the other languages; however, the frequency and description of informal assessments mentioned were not included (Aguilar, 2013).

Gutierrez-Clellen (1999) summarized various studies on the optimal intervention languages for bilingual children done within 1980s-1990s. More than 12 studies indicated that providing a bilingual environment, whether that means initiating only with L1 or

have both L1 and L2 used during instruction, is more beneficial for bilingual children than only using L2. Primary effects include higher reading level, increased oral proficiency and more rapid learning rate in both languages. Secondary effects include higher motivation and confidence.

Targeting phonological awareness skills has shown positive gains in L1 and L2, even when initial instructions are delivered in L1 for ELL students (Gorman, 2012). In an investigation of English – Spanish cross-linguistic transfer of phonological processes of first-grade English Learners (EL), "[Leafstedt and Gerber (2005) found] language of instruction influences English and Spanish word reading and Spanish pseudoword decoding, but not English pseudoword decoding" (Leafstedt & Gerber, 2005, p. 1). The treatment language is assumed to be beneficial in the L1 since phonological awareness skills are transferrable to the L2. Gorman's (2012) results suggest initiating phonological awareness tasks in the child's native language for better understanding, then shifting to the mainstream language gradually.

**Disorders and Bilingualism**

Research on specific disorders, such as Autism Spectrum Disorder (ASD) and Down syndrome, and bilingual exposure is a current topic of interest. In the available studies targeting the ASD population, results do not indicate that bilingualism has led to a negative impact to different areas of communication. Ohashi et al. (2012) compared the development of 20 bilingual-exposed (BE) and 40 monolingual-exposed (ME) matched participants between 31-51 months of age through 6 dependent variables. The dependent

variables represented "six indices of early language development… [which included:] (a) Severity of autism-related communication impairment, (b) age of first words, (c) age of first phrases, (d) receptive language scores, (e) expressive language scores, and (f) functional communication scores" (Ohashi et al., 2012, p. 895). The results showed no statistical significant differences in the 6 indices of early language development. These results suggest that bilingual exposure does not have a detrimental effect on language development.

Language abilities can often be found in similar patterns among people with certain syndromes, like Down Syndrome (DS). Expressive language abilities are frequent in DS, especially in the acquisition of verbs and morphosyntax (higher impairment with expressive morphosyntax). A significant gap between comprehension and expressive skills is common. Kay-Raining Bird, et al. (2005) conducted a study with children with DS to see their success in acquiring a second language. The study consisted of a total of 51 participants that were divided into four main groups: Bilingual DS (n=8), Monolingual DS counterparts (n=14), Bilingual Typically Developed (TD) children (n=18) and Monolingual TD (n=11). Results showed a significantly lower mean length utterance (MLU) production in DS groups versus TD groups. However, performance on vocabulary measures and number of English words produced were not significant across the four groups. These results also suggesst that English skills were developed just as well in the bilingual DS group as their monolingual DS counterparts and thus, bilingualism did not have a detrimental effect on language acquisition. The reaserchers also indicated that the results "do not support restricting language input to a single language" (Kay-Raining Bird, et al., 2005).

Cleave, Kay-Raining Bird, Trudeau, and Sutton (2014) investgated the use of

syntactic cues during fast mapping tasks (learning new words) for participants with DS

(the same groups as the previous study were used: TD-M, TD-B, DS-M and DS-B.)

Results were similar; there were significant differences between the TD and DS groups

but no significant difference within the DS-M and DS-B groups  (Cleave, Kay-Raining

Bird, Trudeau, & Sutton, 2014).

Bunta and Douglas (2013) compared language skills of 20 Spanish-English

bilingual children with hearing loss (HL) to 20 monolingual children with HL using the

Preschool Language Scale, Fourth Edition (PLS-4), an expressive and receptive language

assessment for children 0- 6 years and 11 months of age. All children had participated in

oral therapy for at least a year and had received their hearing aids or cochlear implants

after 5 years of age. The home-language of the bilingual patients was Spanish, and their

parents had limited English proficiency. Results from the PLS-4 indicated there was no

statistically significant difference between the English (Auditory Comprehension and

Expressive Communication) or Total Language scores of the monolingual and bilingual

children with HL. The results also revealed that the English and Spanish Total Language

Scores were similar to each other and had a strong, positive correlation for the bilingual

participants. Bunta and Douglas (2013) mention several studies that suggest that a

bilingual environment does not impair speech and language development of bilingual

children with HL (McConkey Robbins et al., 2004; Thomas, El-Kashlan, & Zwolan,

2008; Waltzman et al., 2003). These findings are clinically significant for the promotion

of the native home language and for incorporation of the language in the patient's plan of

care, including evaluation and intervention.

**Summary and Rationale**

Thus, research suggests that bilingual children are not confused when exposed to two languages and that bilingual children establish the grammatical systems of their languages separately from the onset of acquisition. Research also suggests that bilingual exposure is not detrimental to children with disorders (e.g. ASD, Down Syndrome, and hearing loss). These children can develop two languages. Nevertheless, studies also indicate that SLPs often do not emphasize bilingual exposure and intervention and have preferences for assessments in one language even when bilingual assessments are available. The current study examines SLPs knowledge of the bilingual language development literature to determine whether a formal education on bilingual topics, such as bilingual development, assessment and interventions could be responsible for these preferences in assessment and interventions. In other words, this study examines whether a formal exposure to research findings on bilingualism influence SLPs' practice with bilingual clients.

# CHAPTER II
## METHOD

**Purpose**

The purpose of this study is to obtain information on practicing SLPs' knowledge of bilingual issues, including bilingual language development, bilingual assessments, diagnosis and treatment while also considering whether any academic background on bilingualism guides SLP's diagnostic and treatment options. This was done through administration of a survey and by comparing survey results of practicing SLPs with different academic backgrounds on bilingualism with current Master's students registered at the Communication Sciences and Disorders Masters' program at Florida International University (FIU). This program was chosen because of its emphasis on bilingualism issues. The students who participated in the survey had at least one specific course on bilingual topics.

**Hypothesis**

If a SLP or student has been exposed to recent research findings on bilingualism and/or received a formal education on bilingual assessment and intervention, they will likely choose answers on the survey that indicate that the simultaneous acquisition of a second language will not lead to confusion of the two languages. They will also find it acceptable to establish a bilingual treatment and home-language use environment, even if a child has an impairment.

If a SLP or student has not been exposed to recent research findings on bilingualism and/or received a formal education on bilingual assessment and intervention,

they will likely select responses on the survey that suggest an additional language will slow a child's language development. They will be inclined to choose answers that suggest it is better to master one language prior to learning another. They will likely also have monolingual preferences for evaluation (even if it is the child's non-dominant language), treatment and home-language use due to a belief that in initial stages of language development there is one single language system for both languages.

Thus, we will test whether there is a difference between having bilingual educational background and not having bilingual educational background on knowledge of the bilingual language topics tested. We will also explore if there is a difference between bilingual participants and non-bilingual participants regarding their knowledge on the bilingual language topics tested.

**Participants**
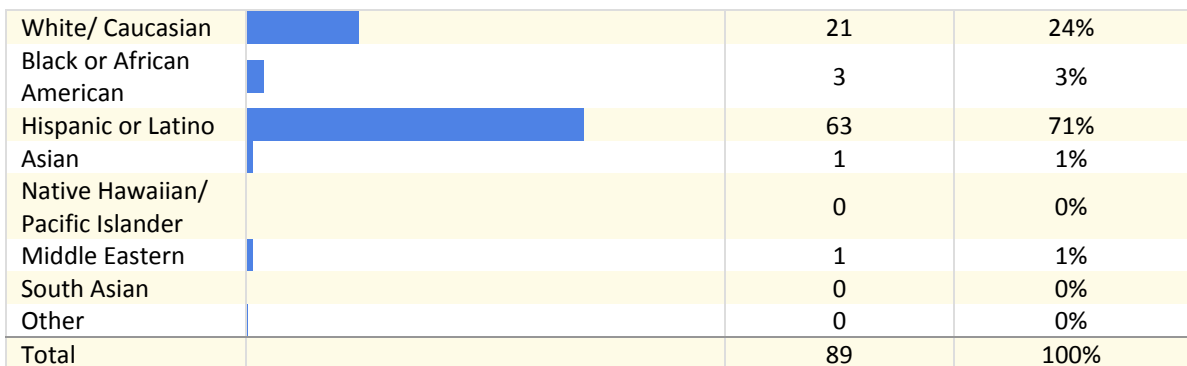
A total of 89 participants responded to the survey, 90% of the respondents were female. The age range of the respondents included 60% between 20-30. The remainder of the participant population was divided among ranges 31-40 (22%), 41-50 (9%) and 50+ (9%).

Students from Florida International University were chosen as a group of participants to act as a control group for the analysis of response trends for having previous graduate-level education on bilingualism. Florida International University's Speech-Language Pathology department has an emphasis on bilingualism. All student participants had to have completed at least one master's-level course dedicated to issues of bilingualism, including treatment and evaluation of bilingual patients to be eligible.

Students were encouraged to participate in the survey via e-mail and some were addressed during their class time. They were not given any type of compensation for completing the questionnaire. The total number of students that participated in the survey was 53.

ASHA-certified SLPs were reached via e-mail from the researcher or from colleagues who shared the survey information with them. A total number of 36 ASHA-certified SLPs answered the survey. 34% of the SLPs reported having more than 15 years of experience. Less than 2 years made up 9%, 2-5 years also made up 9%, 6-9 years made up the second largest proportion 25%, and 10-15 years 22%. Approximately 79% of the certified SLPs who added the zip code of their current workplace were located in South Florida; the rest were from Western, Midwest, and Northwest U.S. states. Table 1 shows a distribution of ethnicity for all participants.
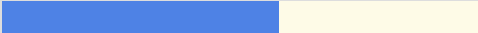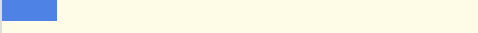
Table 1; Participant ethnic distribution.

| | | | |
|---|---|---|---|
| White/ Caucasian | | 21 | 24% |
| Black or African American | | 3 | 3% |
| Hispanic or Latino | | 63 | 71% |
| Asian | | 1 | 1% |
| Native Hawaiian/ Pacific Islander | | 0 | 0% |
| Middle Eastern | | 1 | 1% |
| South Asian | | 0 | 0% |
| Other | | 0 | 0% |
| Total | | 89 | 100% |

Additionally, to get information on bilingualism, the participants were asked if they were bilingual relative to ASHA standards (being able to read, understand, and communicate in a language other than English with native or near-native proficiency);

54% (n=43) indicated they were considered bilingual. Most bilingual respondents could be considered "simultaneous" bilinguals; exposure from birth – 12 months (58%) and 13 months- 36 months (12%).

Table 2: Participant age of bilingual exposure.

| | | | | |
|---|---|---|---|---|
| Birth- 12 months | | | 25 | 58% |
| 13 months – 36 months (3 years) | | | 5 | 12% |
| 4 years old– 6 years old | | | 5 | 12% |
| 7 years old – 16 years old | | | 7 | 16% |
| After 16 years old | | | 1 | 2% |
| Total | | | 43 | 100% |

Participants were asked if they had received any education on bilingual development, diagnosis and/or intervention. Including the FIU students, 90% claimed having some type of education. As seen in table 3, the majority (81%) had received Master's level education; 9% of the respondents attended workshops/seminars on bilingual topics. Three choices were available for the overall level of intensity of their educational exposure: basic (24%), intermediate (53%) and extensive (23%). More participants selected an intermediate level, suggesting that although a majority received Master's bilingual coursework, they did not feel it was extensive. This information is presented in Table 4.

Table 3. Participant history of bilingual education.
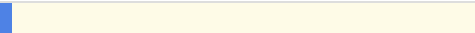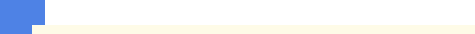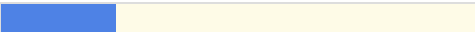
| | | | |
|---|---|---|---|
| Undergraduate Degree | | 2 | 3% |
| Master's Degree | | 60 | 81% |
| Doctorate Degree | | 0 | 0% |
| Workshops/Seminars | | 7 | 9% |
| Other: | | 5 | 7% |
| Total | | 74 | 100% |

Table 4. Participant opinion on level of intensity for bilingual education.

| | | | |
|---|---|---|---|
| Basic | | 18 | 24% |
| Intermediate | | 39 | 53% |
| Extensive | | 17 | 23% |
| Total | | 74 | 100% |

**Materials**

  **Questionnaire Development.** The survey was developed using different question

formatting (text box, multiple choice, yes/no) to get information on the respondent

demographics and only multiple-choice for questions on bilingualism. The web-based

Qualtrics (Qualtrics, LLC, 2015) was used to customize the survey. Qualtrics provides

tools for creating, monitoring and distributing surveys, along with reporting results in a

variety of ways (such as graphics and cross-tabulation). A total of 26 questions were

included in the survey; however, not every respondent had access to all of the questions

due to display logic based on responses to the questions. The only questions with display

logic were questions regarding participant population, allowing for faster survey

completion based on relevance of each question to each respondent. An example of a question that had a display logic included "Are you an ASHA-certified speech-language pathologist (SLP)?" Only if "yes" was answered, the following question was displayed: "Select how many years you have been practicing. 1) less than 2 years 2) 2-5 years 3) 6-9 years 4) 10-15 years 5) more than 15 years." If "no" was selected the participant would automatically get the next question that did not ask for information regarding clinical experience. Please see the complete survey in Appendix 1.

The choice of a fully anchored rating scale was based on Johnson and Christensen (2014) recommendations on scale development. A 5-point fully anchored scale was used to assess the level of agreement with the questions. A neither agree nor disagree option was provided; the other responses were strongly agree, agree, strongly disagree, and disagree, respectively.

A link was created using Qualtrics that would allow participants access to the survey. The link was not individualized and permitted sharing of the link. A short informative paragraph was sent with the survey link. E-mails were gathered from publically accessed SLP e-mails in different settings as ASHA did not provide an option to purchase e-mail lists. SLPs who received the e-mails were encouraged to share with anyone who met the qualifications. No personal information was requested and responses were recorded anonymously.

**Questions.** Obtaining qualitative information on the respondents' exposure to bilingual education was crucial to determining a possible relationship between knowledge and exposure to bilingual information, and survey answers. Participants were asked to provide information on their bilingual education: Undergraduate, Graduate, Seminars or

other (allowing for text answers). Additionally, it was important for the researcher to understand how the participant viewed the intensity of such exposure. Three options were available: basic, intermediate, extensive.

Self-report of being considered a bilingual SLP by ASHA (i.e., able to read, understand, and communicate in a language other than English with native or near-native proficiency) and age of language acquisition was included to monitor possible influence of participant's bilingualism. Questions used for the remainder of the survey were developed from various studies, with emphasis on the work of Paradis, Genesee and Crago (2011) (see Appendix 1).

# CHAPTER III

## RESULTS

In order to determine whether bilingual education background influenced the survey answers, the participants were split in two groups. The first group consisted of participants with a more extensive and formal education on bilingualism (undergraduate, master, or doctorate degrees that included courses on bilingualism) (n= 62). The other group consisted of participants with little or no background on bilingualism (workshop/seminar, other) (n= 20). Seven respondents failed to complete the questions pertaining to bilingual education background. Participants were also split in terms of being an ASHA-certified SLP or a student bilingual with native or near-native proficiency (n=43), or being an ASHA-certified SLP or a student non-bilingual (n=36). Ten participants did not indicate their language group. This last comparison was used to determine whether survey preferences were due to the fact that the respondent was bilingual.

Statistical analysis using Pearson Chi-Square Cross tabulation were used to determine a relationship between participant groups and survey answers. Pearson Chi-Square analyzes and tests for differences between the categories of interest and determines independence or dependence among the groups. The null hypotheses include: The language class (bilingual and non-bilingual) is not related to the respondent's knowledge on bilingual language topics; and History of bilingual educational background is not related to the respondent's knowledge on bilingual language topics. A statistically significant p-value results in the rejection of the null hypothesis, and acceptance of the alternative hypothesis. The alternative hypotheses include: The language class (bilingual

and non-bilingual) is related to the respondent's knowledge on bilingual language topics; and history of bilingual educational background is related to the respondent's knowledge on bilingual language topics. Thus, a significant p-value indicates there is dependence among the variables. The five possible survey responses (strongly agree, agree, neutral, disagree, and strongly disagree) were grouped into three categories (strongly agree and agree; neutral; and disagree and strongly disagree).

The results comparing the findings of the ASHA-certified SLPs and students showed significant differences for questions 11, 12, and 20 relative to whether the respondent was bilingual or monolingual.
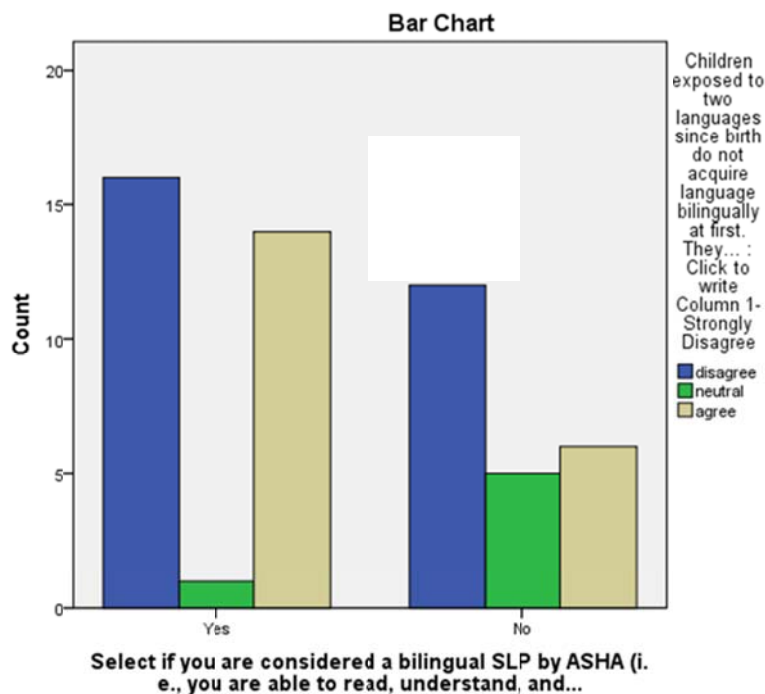
Figure 1. Question 11

Question 11 (Children exposed to two languages since birth do not acquire

language bilingually at first. They go through a stage when the two input languages are

treated as if they were part of a single language) showed marginally significant

differences ($\chi^2$=5.371, p= .06). This difference indicates a significant relationship

between bilingual and non-bilingual participants' responses relative to the three

categories of responses. Figure 1 above shows bilingual SLPs chose a great number of

both "agree" and "disagree" responses and few "neutral" responses while monolingual

SLPs had a tendency to "disagree" with this question. They also showed more "neutral

answers" than bilingual SLPs. The literature on bilingual language development shows

23

that "disagree" is the appropriate answer. Note, however, that only 54 out of 89

participants answered this question.
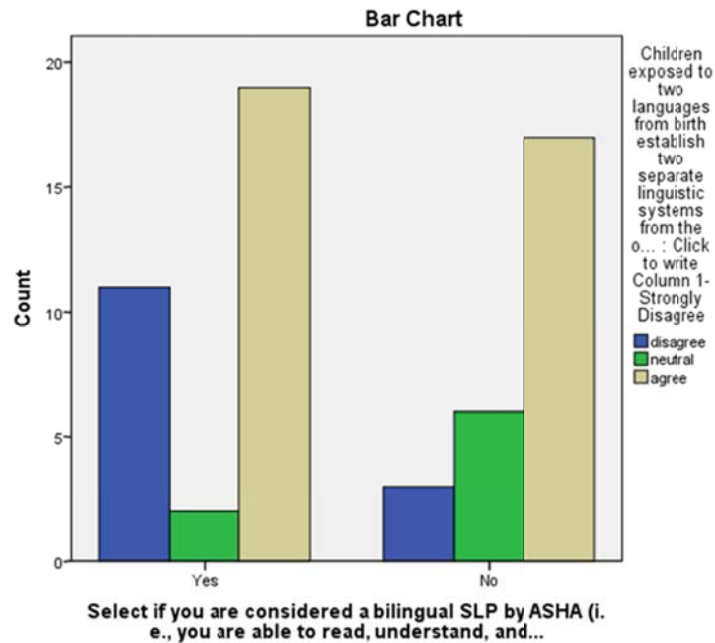


Figure 2. Question 12

Question 12 (Children exposed to two languages from birth establish two separate

linguistic systems from the outset of acquisition) showed a significant difference

($\chi^2$=6.127, p= .04) (number of answers= 58/89). Although both groups had a strong

preference for "agree", bilingual SLPs showed more disagree answers than monolingual

SLPs. The fact that both groups prefer the "agree" answer suggest that being a bilingual

ASHA-certified SLP/student or a monolingual SLP/student is not a main factor when

choosing the answer supported by the literature ("agree"). The difference in results

between question 11 and 12 might be related to the fact that question 11 is stated with a

negation. This might having confused the participants.
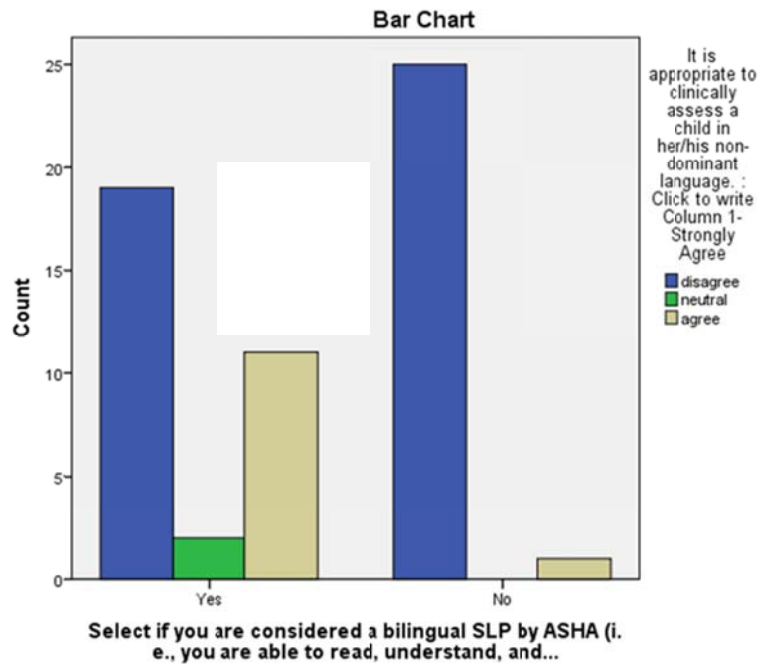


Figure 3. Question 20

As shown in figure 3, Question 20 (It is appropriate to clinically assess a child in

her/his non-dominant language) showed a highly significant finding ($\chi^2$=10.645, p= .005)

(number of answers 58/89). The significant finding indicated a relationship between

language class and their answer choices. Surprisingly, besides "disagree" answers (n=19),

bilingual SLPs/students also marked "agree" answers (n=11) to this question whereas just

monolingual SLPs/students had a strong preference to "disagree" answers.

No other significant relationships were found between the numbers of individuals responding to each of the three categories of response.

When comparing participants with an extensive or some background on bilingual development literature with participants with no or little background, several questions revealed a significant relationship (11, 13, 14, and 23). Typically, the no /little background group had 15 participants, and the extensive/some background group had 45 participants. Thus, these significant findings may not be present if more participants with little or no background participated. Although all chi-square tests were concluded valid, more data would support these significant response category differences.
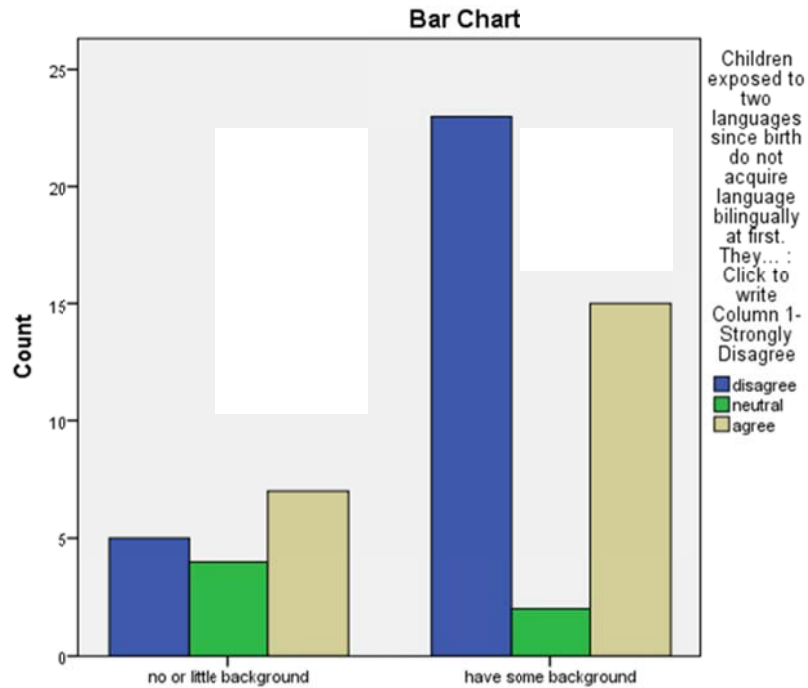
Figure 4. Question 11


Question 11 (Children exposed to two languages since birth do not acquire language bilingually at first. They go through a stage when the two input languages are treated as if they were part of a single language) showed a significant difference ($\chi^2$=5.95, p= .05) (number of responses 56/89) with participants with extensive or some education on bilingualism preferring the "disagree" answer and the participants with little or no education preferring the "agree" answer. As the literature on bilingual development suggests that children acquire language bilingually, then "disagree" is the more appropriate answer.

Bar Chart

Figure 5. Question 13

Question 13 (Bilingual children frequently show smaller vocabularies in each language than monolingual children on standardized tests) showed a significant difference, indicating a relationship between educational background and the three categories of response ($\chi^2$=10.000[a], p= .007) (number of answers 60/89). Participants with education preferred the correct answer "agree" (n=35) while participants with no/little education had similar numbers of "agree" (5) and "disagree" (9) answers.

Figure 6. Question 14

Question 14 (Bilingual children typically have vocabularies of an age-appropriate size when vocabularies from both languages are added together (combined vocabulary) showed a significant relationship ($\chi^2$=12.557[a], p= .002) (number of answers 62/89). Respondents with an educational background had a higher response rate for "agree" (n=44) than "disagree" (n=1) and no "neutral" answers were chosen. Although participants with little/no background also preferred "agree" answers (n==11), in some cases, these respondents also preferred to be neutral (n=4). One participant in this group showed "disagree".
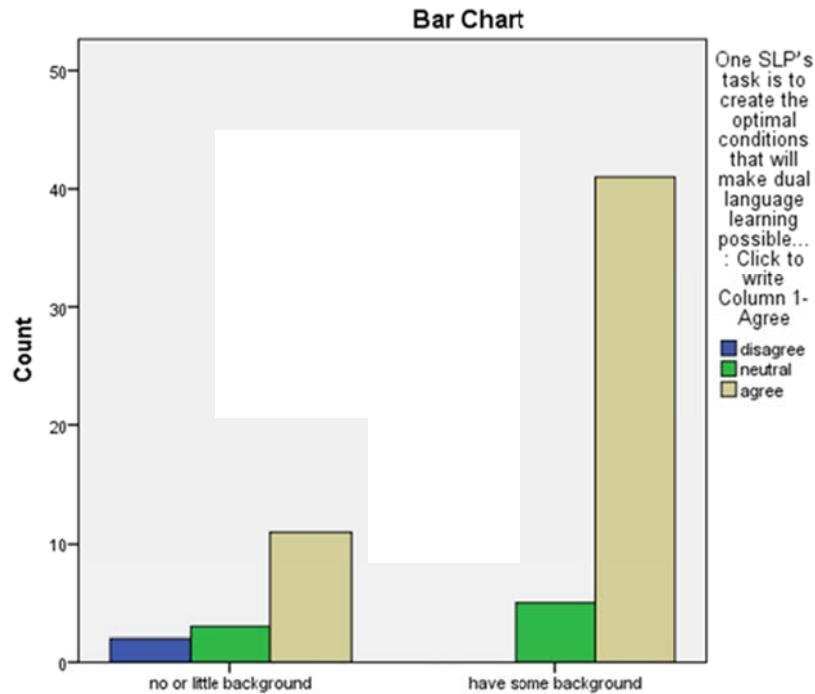
Figure 7. Question 23

As shown in Figure 7, Question 23 (SLP's task is to create the optimal conditions that will make dual language learning possible given the capacities that children with and without impairments have) showed a significant difference ($\chi^2$=6.909[a], p=.03) (number of answers 62/89). The group with no/some education chose "disagree" responses (n=2) while the group with formal education did not. The majority of both groups responded with "agree," education participants (n=41) and little/no background (n=11). Thus, although both groups preferred "agree" answers, the group with little/no education also chose "disagree" answers.

# CHAPTER IV

# DISCUSSION

The purpose of this study was to obtain information on practicing SLPs' knowledge of bilingual issues, including bilingual language development, bilingual assessments, diagnosis and treatment while also considering whether any academic background on bilingualism guides SLP's diagnostic and treatment options. History of bilingual education and participant bilingual status were compared by examining differences in responses. Pearson Chi-Square Cross tabulation was used to test for independence. The study was conducted via a 26-question survey.

The results suggest that education on bilingual topics might influence some of the SLPs responses relative to various issues on bilingualism. However, it is important to mention that several questions did not result in any significant differences related to amount of education on bilingualism. Thus, both groups (formal education and little/no education) agree that, for example, *there is no systematic evidence that bilingual children are slower than monolingual children to pass through early critical milestones such as babbling and use of first word combinations* and that *children with specific language impairment are capable of learning more than one language*. Also, both groups disagree that *it is best to learn one language well first before acquiring another*, that *code mixing reflects linguistic confusion* and that *dual language exposure is a risk factor in language development*.

These answers are very promising because they indicate SLPs do not view bilingualism as a burden or a risk factor as once hypothesized. This may be due to

exposure to literature that suggest bilingual exposure is not detrimental to language

development, and will not negatively impact milestones (Paradis, Genesee, & Crago,

2011). These findings also indicate a preference for the Dual Language Hypothesis, in

that both language systems are represented separately and there is no need to learn one

language before the other (Genesee, 1989). The capacity of children with specific

language impairment to be multi-lingual does not appear to be viewed as restricted or

harmful to language growth (Paradis, 2010). Code mixing also does not appear to be

considered a sign of confusion (Genesee, Nicoladis, & Paradis, 1995; Genesee &

Nicoladis, 2005; Meisel, 1994).

Although participants with no/little education on bilingualism showed "agree"

(n=5) and "disagree" (n=9) answers to the question *it is appropriate to clinically assess a*

*child in her/his non-dominant language,* participants with education on bilingualism had

a strong preference for "disagree" (n=37) answers with few "agree" (n=7) answers, this

association did not show significance. Thus, both groups would prefer to assess a child in

her dominant language. This may indicate that confusion persists on how bilingual

assessment should be exercised; language skillsets in both languages should be assessed.

It may also suggest misinterpretations of standardized results for bilingual children when

evaluated in one language or in their non-dominant language.

The questions that showed a significant finding between the two bilingual

educational groups suggest that participants with little or no background still believe that

*children exposed to two languages since birth do not acquire language bilingually at*

*first*. Nevertheless, because both groups agree with the statement *children exposed to two*

*languages from birth establish two separate linguistic systems from the outset of*

*acquisition*, the above difference could have been a reflection of the negation statement in the first question ("do not acquire") and not to the participants' view on bilingualism development. Thus, these particular findings should be viewed with caution.

The other two questions that showed significant findings between the group that received an education on bilingualism and the group that received little/no education are related to vocabulary development. Participants with little/no background on bilingualism have a tendency to disagree with the stat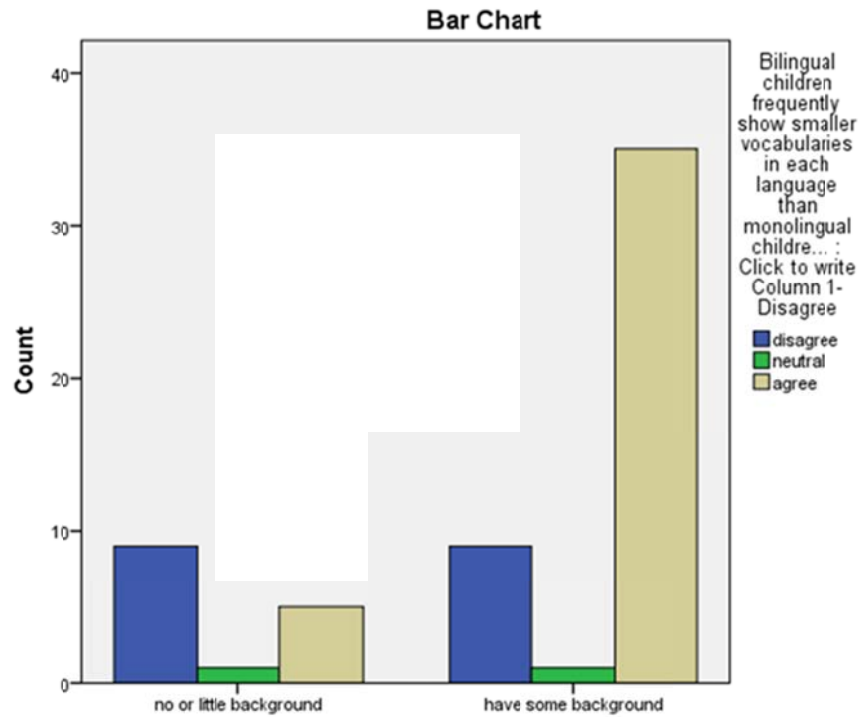ements *bilingual children frequently show smaller vocabularies in each language than monolingual children on standardized tests* and to be more neutral about the stat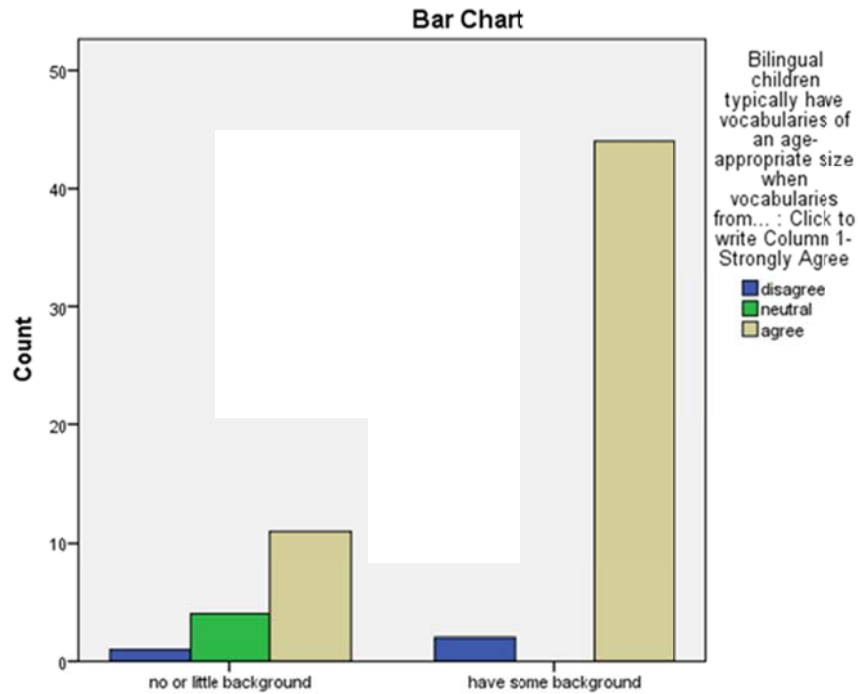ement *bilingual children typically have vocabularies of an age-appropriate size when vocabularies from both languages are added together (combined vocabulary)*. This is a sign of concern since research shows that to appropriately assess a bilingual child, the vocabulary of both languages should be considered (Bornstein, De Houwer & Putnick, 2013; Fernandez, Oller & Pearson, 1993).

There were also some significant differences between respondents who were bilingual versus those who were non-bilingual for two questions. For question 12, *children exposed to two languages from birth establish two separate linguistic systems from the outset of acquisition*, both groups show a higher choice for "agree," however, bilingual participants chose a greater number of "disagree" than the non-bilingual group. As mentioned previously, there might have been some confusion due to the negation stated in the similar question, number 11. Question 20, *it is appropriate to clinically assess a child in her/his non-dominant language* also showed a significant difference. Both groups chose a great amount of "disagree" responses; however, bilingual participants also had a large amount of "agree" and some "neutral" choices. This

tendency could have been influenced by personal experience, having been assessed in the community's mainstream language. However, this was not asked directly in the survey.

No other differences were found between the bilingual and non-bilingual participant responses. This is encouraging for non-bilingual practitioners because it suggests there is not an advantage to being a bilingual SLP in the assessment and treatment of bilingual patients; however, contemporary research should be applied for the most advantageous evaluation and intervention of this growing population.

These preliminary results suggest that academic background on bilingualism might be related to bilingual vocabulary assessment interpretations, specifically that SLPs with no/little background on bilingualism might not consider the importance of both vocabularies of a bilingual child during assessment. This suggests that when encountering vocabulary size differences between bilingual and monolingual children on standardized tests, SLPs might erroneously conclude that bilingual children have a smaller vocabulary than monolingual children. These findings also suggest a history of bilingual education may increase the likelihood of promoting a dual-language environment for bilingual children with and without impairments. More research is needed to explore this conclusion.

**Limitations**

This study presents two major limitations. The first one is related to the fact that the groups are not balanced regarding education/background on bilingualism and little or no education/background.  The group that received some education on bilingualism topics was much larger (n= 45) than the group that did receive little or no education on

bilingualism (n= 15). However, there were no complications with the validity of the chi-square tests. The assumption for the chi-square test to be valid requires a certain percentage of expected counts to be higher than 5. If the criterion is not satisfied, then the test is considered invalid.

Secondly, some participants did not answer some of the survey questions. Surprisingly, the majority of questions received around 54 to 62 answers, meaning that not all the 89 participants answered all the questions. Some open-ended (text-box) questions were also left unanswered. For example, questions "what percentage of your current caseload is considered bilingual?" and "how many bilingual children do you typically screen for speech, language, or hearing services in a year?" were answered by 12 SLPs only. Initially, upon the activation of the survey, some participants reported not having access to the text box; the problem was solved within 5 days of activation.

Another factor to consider in interpreting these data is the overwhelming majority of respondents from South Florida which contains a high population of bilinguals. Exposure to bilingual clients and personal experience of multiple-language acquisition should be considered as influential in responses.

**Summary and Conclusions**

This thesis presents results that suggest that a formal education on bilingual topics can have an influence on some areas of SLPs' practice, especially with the encouragement of dual-language environments. Also, the results impact the evaluation and the interpretation of assessment results for bilingual patients, specifically vocabulary. Being a bilingual SLP was not a variable of impact in this study; however, the majority of

respondents were bilingual. These results should be further investigated with a larger and more diverse population that includes more SLPs with little or no background on bilingualism to understand how bilingual education can influence the assessment and intervention of bilingual clients. Future studies should also have a balanced population in order to allow for direct comparison between groups.

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Appendix 1

Survey questions

1. What is your age?
2. Select your gender. 1) Female 2) Male 3) Prefer not to answer
3. What is your ethnicity?  1) White/ Caucasian 2) Black or African American  3) Hispanic or Latino 4) Asian 5) Native Hawaiian/ Pacific Islander 6) Middle Eastern 7) South Asian 8) Other: [text box]
4. Are you an ASHA-certified speech-language pathologist (SLP)?
    a. If yes: Select how many years you have been practicing. 1) less than 2 years 2) 2-5 years 3) 6-9 years 4) 10-15 years 5) more than 15 years
5. What is the zip code in which you currently work?
6. Are you currently a student enrolled in a Communication sciences and Disorders program?
    a. If yes: Have you taken at least one academic course with an emphasis in bilingual development, bilingual diagnosis and/or bilingual intervention?
7. Select your highest level of completed education.  1) Bachelor's Degree 2) Master's Degree 3) Doctorate Degree
8. Have you received any formal education on bilingual development, bilingual diagnosis and/or bilingual intervention?
    a. If yes, please select from the following: 1) Undergraduate Degree 2) Master's Degree 3) Doctorate Degree 4) Workshops/Seminars 5) Other: [text box]
9. Select if you are considered a bilingual SLP by ASHA (i.e., you are able to read, understand, and communicate in a language other than English with native or near-native proficiency)? 1) Yes 2) No
    a. If yes: Select at what age you began having exposure to both languages. 1) Birth- 12 months 2) 13 months – 36 months (3 years) 3) 4 years old– 6 years old 4) 7 years old – 16 years old 5) After 16 years old
10. Do you currently work with children 18 years old and under? 1) Yes 2) No
    a. If yes, answer the following questions:
    b. What percentage of your current caseload is considered bilingual?
    c. How many bilingual children do you typically screen for speech, language, or hearing services in a year?
11. Children exposed to two languages since birth do not acquire language bilingually at first. They go through a stage when the two input languages are treated as if they were part of a single language.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly disagree | Disagree | Neutral | Agree | Strongly agree |

12. Children exposed to two languages from birth establish two separate linguistic systems from the outset of acquisition.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly disagree | Disagree | Neutral | Agree | |

Strongly agree

13. Bilingual children frequently show smaller vocabularies in each language than monolingual children on standardized tests.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
5

| Strongly disagree | Disagree | Neutral | Agree |
|---|---|---|---|

Strongly agree

14. Bilingual children typically have vocabularies of an age-appropriate size when vocabularies from both languages are added together (combined vocabulary).

| 1 | 2 | 3 | 4 |
|---|---|---|---|
5

| Strongly disagree | Disagree | Neutral | Agree |
|---|---|---|---|

Strongly agree

15. There is no systematic evidence that bilingual children are slower than monolingual children to pass through early critical milestones such as babbling and use of first word combinations

| 1 | 2 | 3 | 4 |
|---|---|---|---|
5

| Strongly disagree | Disagree | Neutral | Agree |
|---|---|---|---|

Strongly agree

16. Literary skills, especially in the early stages, are transferable from one language to another

| 1 | 2 | 3 | 4 |
|---|---|---|---|
5

| Strongly disagree | Disagree | Neutral | Agree |
|---|---|---|---|

Strongly agree

17. It is best to learn one language well first before acquiring another.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
5

| Strongly disagree | Disagree | Neutral | Agree |
|---|---|---|---|

Strongly agree

18. Children with specific language impairment are capable of learning more than one language.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

19. Code mixing reflects linguistic confusion.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

20. It is appropriate to clinically assess a child in her/his non-dominant language.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

21. Dual language exposure is a risk factor in language development.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

22. Infants being raised in bilingual environments establish the phonetic representations for each of their two languages in much the same manner and on the same time course as infants establishing monolingual representations.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

23. SLP's task is to create the optimal conditions that will make dual language learning possible given the capacities that children with and without impairments have.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |
| Strongly disagree | Disagree | Neutral | Agree | |
| Strongly agree | | | | |

24. Bilingual children should be considered typically developing only when they appear to be like monolingual children.

|  | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 5 | | | | |

Strongly disagree     Disagree     Neutral     Agree
Strongly agree

25. Caregivers of bilingual children should try to speak only English at home.

|  | 1 | 2 | 3 | 4 |
| --- | --- | --- | --- | --- |

5

Strongly disagree     Disagree     Neutral     Agree
Strongly agree

26. Children who have been exposed go two languages should receive treatment bilingually.

|  | 1 | 2 | 3 | 4 |
| --- | --- | --- | --- | --- |

5

Strongly disagree     Disagree     Neutral     Agree
Strongly agree

Appendix 2

| | | | Final |
|---|---|---|---|
| **1. What is your age?** | | | |

| # | Answer | | Response | % |
|---|---|---|---|---|
| 1 | 20 - 30 | | 53 | 60% |
| 2 | 31- 40 | | 20 | 22% |
| 3 | 41-50 | | 8 | 9% |
| 4 | 50+ | | 8 | 9% |
| | Total | | 89 | 100% |

| Statistic | Value |
|---|---|
| Min Value | 1 |
| Max Value | 4 |
| Mean | 1.67 |
| Variance | 0.95 |
| Standard Deviation | 0.97 |
| Total Responses | 89 |

| **2. Select your gender.** | | | |
|---|---|---|---|

| # | Answer | | Response | % |
|---|---|---|---|---|
| 1 | Male | | 9 | 10% |
| 2 | Female | | 80 | 90% |
| | Total | | 89 | 100% |

| Statistic | Value |
|---|---|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.90 |
| Variance | 0.09 |
| Standard Deviation | 0.30 |
| Total Responses | 89 |

## 3. What is your ethnicity?

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | White/ Caucasian | | 21 | 24% |
| 2 | Black or African American | | 3 | 3% |
| 3 | Hispanic or Latino | | 63 | 71% |
| 4 | Asian | | 1 | 1% |
| 5 | Native Hawaiian/ Pacific Islander | | 0 | 0% |
| 6 | Middle Eastern | | 1 | 1% |
| 7 | South Asian | | 0 | 0% |
| 8 | Other | | 0 | 0% |
| | Total | | 89 | 100% |

| Other Statistic | Value |
|-----------------|-------|
| Min Value | 1 |
| Max Value | 6 |
| Mean | 2.54 |
| Variance | 0.89 |
| Standard Deviation | 0.94 |
| Total Responses | 89 |

## 4. Are you an ASHA-certified speech-language pathologist (SLP)?

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | No | | 53 | 60% |
| 2 | Yes | | 36 | 40% |
| | Total | | 89 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.40 |
| Variance | 0.24 |
| Standard Deviation | 0.49 |
| Total Responses | 89 |

**5. Select how many years you have been practicing.**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Less than 2 years | | 3 | 9% |
| 2 | 2-5 years | | 3 | 9% |
| 3 | 6-9 years | | 8 | 25% |
| 4 | 10-15 years | | 7 | 22% |
| 5 | More than 15 years | | 11 | 34% |
| | Total | | 32 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 5 |
| Mean | 3.63 |
| Variance | 1.73 |
| Standard Deviation | 1.31 |
| Total Responses | 32 |

**6. What is the zip code in which     you currently work?**

| Text Response |
|---|
| 60526 |
| 60526 |
| 33125 |
| 33035 |
| 60126 |
| 33160 |
| 33155 |
| 33160 |
| 33145 |
| 33134 |
| 33130 |
| 33155 |
| 33014 |
| 33175 |
| 33351 |
| 33016 |
| 32832 |
| 33155 |
| 30909 |
| 45220 |
| 99223 |
| 32609 |
| 33196 |
| 33196 |
| 33133 |
| 33016 |
| 84148 |
| 33134 |
| 33176 |

| Statistic | Value |
|---|---|
| Total Responses | 29 |

**7. Are you currently a student     enrolled in a Communication sciences and Disorders program?**

| # | Answer | | Response | % |
|---|---|---|---|---|
| 1 | Yes | | 54 | 62% |
| 2 | No | | 33 | 38% |
| | Total | | 87 | 100% |

| Statistic | Value |
|---|---|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.38 |
| Variance | 0.24 |
| Standard Deviation | 0.49 |
| Total Responses | 87 |

**8. Have you taken at least one academic course with an emphasis in bilingual development, bilingual diagnosis and/or bilingual intervention?**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Yes | | 52 | 96% |
| 2 | No | | 2 | 4% |
| | Total | | 54 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.04 |
| Variance | 0.04 |
| Standard Deviation | 0.19 |
| Total Responses | 54 |

**9. Select your highest level of completed education.**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Bachelor's Degree | | 48 | 57% |
| 2 | Master's Degree | | 32 | 38% |
| 3 | Doctorate Degree | | 4 | 5% |
| | Total | | 84 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 3 |
| Mean | 1.48 |
| Variance | 0.35 |
| Standard Deviation | 0.59 |
| Total Responses | 84 |

**10. Have you received any education on bilingual development, bilingual diagnosis and/or bilingual intervention?**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Yes | | 75 | 90% |
| 2 | No | | 8 | 10% |
| | Total | | 83 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.10 |
| Variance | 0.09 |
| Standard Deviation | 0.30 |
| Total Responses | 83 |

**11. Please select when education bilingual development, bilingual diagnosis and/or bilingual intervention was received**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Undergraduate Degree | | 2 | 3% |
| 2 | Master's Degree | | 60 | 81% |
| 3 | Doctorate Degree | | 0 | 0% |
| 4 | Workshops/Seminars | | 7 | 9% |
| 5 | Other: | | 5 | 7% |
| | Total | | 74 | 100% |

| Other: |
|--------|
| Undergrad and masters |
| Undergrad, grad, and workshops and seminars |
| Class while doing the Master's |
| Undergraduate and Master's degrees |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 5 |
| Mean | 2.36 |
| Variance | 0.89 |
| Standard Deviation | 0.94 |
| Total Responses | 74 |

**12. What would you consider the     level of intensity from your educational exposure to be?**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Basic | | 18 | 24% |
| 2 | Intermediate | | 39 | 53% |
| 3 | Extensive | | 17 | 23% |
| | Total | | 74 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 3 |
| Mean | 1.99 |
| Variance | 0.48 |
| Standard Deviation | 0.69 |
| Total Responses | 74 |

**13. Select if you are considered a bilingual SLP by ASHA (i.e., you are able to read, understand, and communicate in a language other than English with native or near-native proficiency)?**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Yes | | 43 | 54% |
| 2 | No | | 36 | 46% |
| | Total | | 79 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.46 |
| Variance | 0.25 |
| Standard Deviation | 0.50 |
| Total Responses | 79 |

**14. Select at what age you began having exposure to both languages.**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Birth- 12 months | | 25 | 58% |
| 2 | 13 months – 36 months (3 years) | | 5 | 12% |
| 3 | 4 years old– 6 years old | | 5 | 12% |
| 4 | 7 years old – 16 years old | | 7 | 16% |
| 5 | After 16 years old | | 1 | 2% |
| | Total | | 43 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 5 |
| Mean | 1.93 |
| Variance | 1.59 |
| Standard Deviation | 1.26 |
| Total Responses | 43 |

**15. Do you currently work with children 18 years old and under?**

| # | Answer | | Response | % |
|---|--------|---|----------|---|
| 1 | Yes | | 50 | 61% |
| 2 | No | | 32 | 39% |
| | Total | | 82 | 100% |

| Statistic | Value |
|-----------|-------|
| Min Value | 1 |
| Max Value | 2 |
| Mean | 1.39 |
| Variance | 0.24 |
| Standard Deviation | 0.49 |
| Total Responses | 82 |

**16. What percentage of your current caseload is considered bilingual?**

| Text Response |
|---------------|
| 30 |
| 50% |
| 10-20 |
| 80% |
| 50% |
| 80% |
| 70% |
| 10% |
| 65 |
| 90% |
| |
| 3 |

| Statistic | Value |
|-----------|-------|
| Total Responses | 12 |

**17. How many bilingual children do you typically screen for speech, language, or hearing services in a year?**

| Text Response |
|---------------|
| 20 |
| 138 |
| 5-10 |
| 50 |
| 10 |
| 60 |
| 20+ |
| 5 |
| 50% |
| 70 |
| one every 2 yrs |
| 0 |

| Statistic | Value |
|-----------|-------|
| Total Responses | 12 |

**18.  (11.) Children exposed to two languages since birth do not acquire language bilingually at first. They go through a stage when the two input languages are treated as if they were part of a single language.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 17 | 17 | 1.00 | |
| 2 | Disagree | 21 | 21 | 1.00 | |
| 3 | Neither Agree nor Disagree | 9 | 9 | 1.00 | |
| 4 | Agree | 21 | 21 | 1.00 | |
| 5 | Strongly Agree | 9 | 9 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 17 | 21 | 9 | 21 | 9 | **77** |
| Rounded Percentage | 22% | 27% | 12% | 27% | 12% | |

**19. (12.) Children exposed to two languages from birth establish two separate linguistic systems from the outset of acquisition.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|---|
| 1 | Strongly Disagree | 5 | 5 | 1.00 | |
| 2 | Disagree | 11 | 11 | 1.00 | |
| 3 | Neither Agree nor Disagree | 9 | 9 | 1.00 | |
| 4 | Agree | 29 | 29 | 1.00 | |
| 5 | Strongly Agree | 13 | 13 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 5 | 11 | 9 | 29 | 13 | **67** |
| Rounded Percentages | 7.5% | 16.4% | 13.4% | 43.3% | 19.4% | |

**20. (13.) Bilingual children frequently show smaller vocabularies in each language than monolingual children on standardized tests.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|---|
| 1 | Strongly Disagree | 6 | 6 | 1.00 | |
| 2 | Disagree | 16 | 16 | 1.00 | |
| 3 | Neither Agree nor Disagree | 3 | 3 | 1.00 | |
| 4 | Agree | 28 | 28 | 1.00 | |
| 5 | Strongly Agree | 15 | 15 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 6 | 16 | 3 | 28 | 15 | **68** |
| Rounded Percentages | 9% | 24% | 4% | 41% | 22% | |

**21. (14.)(Bilingual children typically have vocabularies of an age-appropriate size when vocabularies from both languages are added together (combined vocabulary).**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|---|
| 1 | Strongly Disagree | 0 | 0 | 0.00 | |
| 2 | Disagree | 3 | 3 | 1.00 | |
| 3 | Neither Agree nor Disagree | 4 | 4 | 1.00 | |
| 4 | Agree | 25 | 25 | 1.00 | |
| 5 | Strongly Agree | 32 | 32 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|---|
| Min Value | - | 1 | 1 | 1 | 1 | |
| Max Value | - | 1 | 1 | 1 | 1 | |
| Mean | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 0 | 3 | 4 | 25 | 32 | **64** |
| Rounded Percentages | 0% | 5% | 6% | 39% | 50% | |

**22. (15.)There is no systematic evidence that bilingual children are slower than monolingual children to pass through early critical milestones such as babbling and use of first word combinations**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|--|
| 1 | Strongly Disagree | 23 | 23 | 1.00 | |
| 2 | Disagree | 28 | 28 | 1.00 | |
| 3 | Neither Agree nor Disagree | 5 | 5 | 1.00 | |
| 4 | Agree | 9 | 9 | 1.00 | |
| 5 | Strongly Agree | 2 | 2 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|--|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 23 | 28 | 5 | 9 | 2 | **67** |
| Rounded Percentages | 34% | 42% | 7.5% | 13% | 3.5% | |

**23. (16.)Literary skills, especially in the early stages, are transferable from one language to another**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 1 | 1 | 1.00 | |
| 2 | Disagree | 4 | 4 | 1.00 | |
| 3 | Neither Agree nor Disagree | 10 | 10 | 1.00 | |
| 4 | Agree | 33 | 33 | 1.00 | |
| 5 | Strongly Agree | 17 | 17 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 1 | 4 | 10 | 33 | 17 | **65** |
| Rounded Percentages | 2% | 6% | 16% | 51% | 26% | |

**24. (17.)It is best to learn one language well first before acquiring another.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 35 | 35 | 1.00 | |
| 2 | Disagree | 22 | 22 | 1.00 | |
| 3 | Neither Agree nor Disagree | 8 | 8 | 1.00 | |
| 4 | Agree | 3 | 3 | 1.00 | |
| 5 | Strongly Agree | 2 | 2 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 35 | 22 | 8 | 3 | 2 | **70** |
| Rounded Percentages | 50% | 31.4% | 11.4% | 4.2% | 3% | |

**25. (18.) Children with specific language impairment are capable of learning more than one language.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|---|
| 1 | Strongly Disagree | 1 | 1 | 1.00 | |
| 2 | Disagree | 0 | 0 | 0.00 | |
| 3 | Neither Agree nor Disagree | 2 | 2 | 1.00 | |
| 4 | Agree | 29 | 29 | 1.00 | |
| 5 | Strongly Agree | 34 | 34 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|---|
| Min Value | 1 | - | 1 | 1 | 1 | |
| Max Value | 1 | - | 1 | 1 | 1 | |
| Mean | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 1 | 0 | 2 | 29 | 34 | **66** |
| Rounded Percentages | 1.5% | 0% | 3% | 44% | 51.5% | |

**26. (19.) Code mixing reflects linguistic confusion.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 32 | 32 | 1.00 | |
| 2 | Disagree | 18 | 18 | 1.00 | |
| 3 | Neither Agree nor Disagree | 11 | 11 | 1.00 | |
| 4 | Agree | 4 | 4 | 1.00 | |
| 5 | Strongly Agree | 1 | 1 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 32 | 18 | 11 | 4 | 1 | **66** |
| Rounded Percentages | 48.5% | 27% | 17% | 6% | 1.5% | |

**27. (20.) It is appropriate to clinically assess a child in her/his non-dominant language.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 36 | 36 | 1.00 | |
| 2 | Disagree | 19 | 19 | 1.00 | |
| 3 | Neither Agree nor Disagree | 2 | 2 | 1.00 | |
| 4 | Agree | 11 | 11 | 1.00 | |
| 5 | Strongly Agree | 4 | 4 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 36 | 19 | 2 | 11 | 4 | **72** |
| Rounded Percentages | 50% | 26% | 3% | 15% | 6% | |

**28. (21.) Dual language exposure is a risk factor in language development.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 40 | 40 | 1.00 | |
| 2 | Disagree | 22 | 22 | 1.00 | |
| 3 | Neither Agree nor Disagree | 1 | 1 | 1.00 | |
| 4 | Agree | 1 | 1 | 1.00 | |
| 5 | Strongly Agree | 2 | 2 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 40 | 22 | 1 | 1 | 2 | **66** |
| Rounded Percentages | 60% | 33% | 2% | 2% | 3% | |

**29. (22.)Infants being raised in bilingual environments establish the phonetic representations for each of their two languages in much the same manner and on the same time course as infants establishing monolingual representations.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|----------|----------|-----------------|------|---|
| 1 | Strongly Disagree | 1 | 1 | 1.00 | |
| 2 | Disagree | 11 | 11 | 1.00 | |
| 3 | Neither Agree nor Disagree | 8 | 8 | 1.00 | |
| 4 | Agree | 35 | 35 | 1.00 | |
| 5 | Strongly Agree | 13 | 13 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|-----------|-------------------|----------|----------------------------|-------|----------------|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 1 | 11 | 8 | 35 | 13 | **68** |
| Rounded Percentages | 1.5% | 16% | 12% | 51.5% | 19% | |

**30. (23.) SLP's task is to create the optimal conditions that will make dual language learning possible given the capacities that children with and without impairments have.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 1 | 1 | 1.00 | |
| 2 | Disagree | 2 | 2 | 1.00 | |
| 3 | Neither Agree nor Disagree | 8 | 8 | 1.00 | |
| 4 | Agree | 21 | 21 | 1.00 | |
| 5 | Strongly Agree | 32 | 32 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 1 | 2 | 8 | 21 | 32 | **64** |
| Rounded Percentages | 1.5% | 3% | 12.5% | 33% | 50% | |

**31. (24.) Bilingual children should be considered typically developing only when they appear to be like monolingual children.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 27 | 27 | 1.00 | |
| 2 | Disagree | 28 | 28 | 1.00 | |
| 3 | Neither Agree nor Disagree | 7 | 7 | 1.00 | |
| 4 | Agree | 4 | 4 | 1.00 | |
| 5 | Strongly Agree | 2 | 2 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 27 | 28 | 7 | 4 | 2 | **68** |
| Rounded Percentages | 40% | 41% | 10% | 6% | 3% | |

**32. (25.) Caregivers of bilingual children should try to speak only English at home.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 36 | 36 | 1.00 | |
| 2 | Disagree | 22 | 22 | 1.00 | |
| 3 | Neither Agree nor Disagree | 4 | 4 | 1.00 | |
| 4 | Agree | 2 | 2 | 1.00 | |
| 5 | Strongly Agree | 0 | 0 | 0.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | - | |
| Max Value | 1 | 1 | 1 | 1 | - | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 36 | 22 | 4 | 2 | 0 | **64** |
| Rounded Percentages | 56.3% | 34.4% | 6.3% | 3% | 0% | |

**33. (26.)Children who have been exposed go two languages should receive treatment bilingually.**

| # | Question | Answer 1 | Total Responses | Mean | |
|---|---|---|---|---|---|
| 1 | Strongly Disagree | 2 | 2 | 1.00 | |
| 2 | Disagree | 4 | 4 | 1.00 | |
| 3 | Neither Agree nor Disagree | 10 | 10 | 1.00 | |
| 4 | Agree | 33 | 33 | 1.00 | |
| 5 | Strongly Agree | 19 | 19 | 1.00 | |

| Statistic | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | |
|---|---|---|---|---|---|---|
| Min Value | 1 | 1 | 1 | 1 | 1 | |
| Max Value | 1 | 1 | 1 | 1 | 1 | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Variance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Standard Deviation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Responses | 2 | 4 | 10 | 33 | 19 | **68** |
| Rounded Percentages | 3% | 5.8% | 14.7% | 48.5% | 28% | |