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Efficacy of Brief Spanish Immersion Program: An effective model for SLP graduate students seeking to increase Spanish language skills and confidence for working with bilingual populations?

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Efficacy of Brief Spanish Immersion Program: An effective model for SLP graduate students seeking to increase Spanish language skills and confidence for working with bilingual populations?

by

JESSICA EDWARDS

B.A., Saint Michael's College, 2010

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This thesis entitled:

Efficacy of Brief Spanish Immersion Program: An effective model for SLP graduate students seeking to increase Spanish language skills and confidence for working with bilingual populations?

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The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.

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Efficacy of Brief Spanish Immersion Program: An effective model for SLP graduate students seeking to increase Spanish language skills and confidence for working with bilingual populations?

Thesis directed by Professor Christie Yoshinaga-Itano, Ph.D., CCC-A.

Abstract

Currently, there is a national dialogue regarding the increase in children who speak Spanish as their primary language (L1). The US Department of Education reported that in 2008-2009, 77.2% of English Language Learners (ELLs) in grades pre-kindergarten to 12 spoke Spanish as their primary language. In addition, there is a shortage of adequately trained bilingual service providers in the field of speech-language pathology to meet the needs of these ELLs. This paper will examine if 32 hours of immersive Spanish instruction during a two-week educational excursion to La Paz, Mexico is sufficient in improving SLP graduate students' level of fluency in conversational Spanish language skills and confidence in skills required to provide bilingual therapies of graduate level students. Findings suggest that in order to achieve fluency and confidence in skills required to provide bilingual therapies during this two-week immersive trip, Spanish language abilities must already be at an advanced level. If skills are not already at this advanced level, 32 hours of immersive Spanish instruction will improve linguistic abilities and increase confidence, but not achieve the level necessary to be effective bilingual service providers for all participants. Not surprisingly, the level of Spanish proficiency pre 32 hours of immersion is an important variable.

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Introduction

The current study examined the Spanish language skills and confidence in providing bilingual services of speech-language pathology (SLP) master's level students after participating in a personnel training pilot program designed by the University of Colorado at Boulder (CU Boulder). This pilot program, SLHS 6000: Issues in Bilingual Practices, was designed to provide an educational procedure that supports the training of future bilingual SLPs. Additionally, it also addresses the need for bilingual service providers that currently exists in the field of speech-language pathology. The following review of literature discusses these topics: (a) discrepancy analysis between bilingual populations and bilingual service providers, (b) expectations for bilingual professionals serving Spanish speaking populations, (c) review of literature that supports bilingual therapy, and (d) the current status of graduate school programs in providing Spanish-English bilingual training of master's level students. The introduction concludes with an explanation of the SLHS 6000: Issues in Bilingual Practices pilot program and the purpose of the current study.

Discrepancy of Spanish-English Bilingual SLP's to Bilingual Populations

Currently, there is a national dialogue regarding the increase in children who speak Spanish as their primary language (L1). The US Department of Education reported that in 2008-2009, 77.2% of English Language Learners (ELLs) in grades pre-kindergarten to 12 spoke Spanish as their primary language. 77.2% of ELLs totals approximately 3.6 million children, or 7.2 percent of all school aged children, living in the United States who are L1 Spanish speakers (Batalova & McHugh, 2010). According to the 2012 demographic profile of members, published by the American Speech-Language-Hearing Association (ASHA), there are 150,000 total Speech-Language service providers that are certified through ASHA. 'Speech-Language services providers' includes speech-language pathologists (SLPs), audiologists, and SLP assistants (SLPAs). Though, out of this group of 150,000 providers, only 4,000 service providers, or 2.7 percent, met the ASHA definition to be a bilingual Spanish-English therapist.

The ratio of all speech-language providers who do not qualify to be bilingual Spanish-English providers (146,000) to all students grades pre-K-12 and who are not L1 Spanish speakers is approximately 1:317, or one service provider for every 317 students. Calculating this same ratio but only with bilingual speech-language service providers to students whose first language is Spanish, the ratio is 1:900, or one bilingual service provider for every 900 students who are Spanish-English ELLs. Despite the fact that speech-language clinicians do not provide therapy for every single child in the United States, these ratios demonstrate that there is a discrepancy between the amount of service providers available to the general population versus those available to students who speak Spanish (the second most-spoken language in the United States) as their first language. The next step is to understand why this discrepancy is important to the field of speech-language pathology, and why children who are Spanish-speaking ELLs will benefit from an increase in Spanish-English bilingual therapists.

Historically, the advice given to families who primarily spoke a language other than English in the home was focused on linguistic and cultural assimilation. This meant that families were advised to speak English instead of the native language in the home, that their children should receive English-only in the school setting, and if their children were identified with a language disability they were told that learning a second language would only hinder their children's language development and academic success (Paradis, Crago, Genesee, & Rice, 2003). Over the past decade, new research has shown the exact opposite to be true in every one of these points. A review of the literature demonstrates how bilingual instruction supports language development contributing to better academic outcomes with ELLs.

Bilingualism and Bilingual Intervention

Definition of Bilingualism

The American Speech-Language-Hearing Association (ASHA) broadly defines bilingualism as the use of at least two languages by an individual. This definition is further clarified with the statement that

bilingualism is a fluctuating use of, and proficiency in, two languages that may change depending on the opportunities to use the languages and exposure to other users of the languages. This definition suggests that “bilingualism” or to be a “bilingual” speaker is not an absolute goal than can be definitively achieved, but is a dynamic and fluid process impacted by a number of every-changing domains such as experience, tasks, topics, and time (ASHA, 2004).

This dynamic definition of bilingualism was supported by a study conducted by Kohnert, Bates, and Hernandez (1999). They performed a cross-sectional analysis of the lexical-semantic fluency of ELLs who spoke Spanish at home and were first exposed to English when entering kindergarten. The subjects, aged 5 to young-adults, named pictures in Spanish-only, English-only, and Spanish-English cued conditions. The results found that there was a developmental cross-over from Spanish dominance in the youngest children, to period of relatively balanced Spanish and English skills in middle childhood, to a clear pattern of English dominance among adolescents and young adults in this picture naming task (Kohnert et al., 1999). These findings demonstrate that, in the case of lexical-semantic fluency, bilingualism of equal balance between languages is an elusive concept. For the subjects featured in this study, the picture-naming language balance achieved in the 11-13 year old group did not remain balanced in the older aged groups. The older children, who had received more formal schooling in English and exposure to an English-speaking culture, switched to dominance in English for the picture-naming measure (Kohnert et al., 2004).

This dynamic nature of bilingualism was not only demonstrated between age groups, but within age groups, especially the 8-10 year old group. This group had mixed results of which language was more “dominant” depending on the language component being assessed. For example, the 8-10 year olds had a *speed*-advantage in naming pictures in English, but could name significantly *more* pictures in Spanish. Therefore, this study suggests that typically developing sequential bilingual children balance their linguistic performance with different, emerging strengths, which is why their language abilities may

look different depending on which skills are measured (Kohnert et al., 1999). Also, it illustrates the variability in bilingualism, especially during development, and may suggest why it can be so difficult to assess bilingual language abilities for both children and adults.

Bilingualism and Literacy Development/Bilingual Interventions

In 2005, the National Center for Education Statistics found that 73% of ELLs fell below the basic reading proficiency level in the fourth grade (Thomason, Gorman, & Summers, 2007). In 2007, a review of the current research was conducted regarding English language development for ELLs and if Spanish instruction promotes or hinders English literacy development. In the corpus of studies reviewed and published in an Evidence Based Practice (EBP) Brief, zero studies indicated that native language instruction for Spanish speaking ELLs inhibited their literacy development in English, and several studies demonstrated that Spanish instruction actually promoted English literacy development (Thomason et al., 2007). One such study by Maldonado (1994) highlighted in the EBP Brief discusses how skills in language and reading are transferable from one language to another, and how learning to read in L1 will support ELLs' literacy development in L2:

Students who are literate in L1 progress much faster in L2 reading than those who are nonliterate in their L1. This offers ample reason for special education programs to use L1 as the language of instruction when the child's handicapping condition and functioning levels require it. (p. 133).

Another study conducted by Lopez and Tashakkori (2004) found that bilingual instruction appeared to not only help narrow the gap between monolingual English speakers and ELLs, but also help break the featured school's traditional pattern of achievement discrepancies between students with limited English proficiency and students proficient in English. This offers evidence that ELL English literacy development is better supported when given instruction in their native L1 language, and thereby

narrowing the academic achievement gap seen between students with limited English proficiency and students proficient in English.

In addition to typically developing bilingual learners, there is research regarding ELLs who also have a language disability. Parents of ELLs with language disabilities were traditionally counseled to speak only English to their children since it was originally thought that adding a second language to a child with a language disability would only make it more difficult for that child to learn language (Paradis et al., 2009). Contrary to this belief, results from Paradis et al. (2003) study demonstrated that bilingual and monolingual children with Specific Language Impairment (SLI) had similar mean accuracy scores for tense morphemes, indicating that the bilingual children did not exhibit more profound deficits than their monolingual peers. This study suggests that the bilingual children with SLI appeared similar to their monolingual peers for the aspects of grammatical morphology examined in each language. Similarities point to the possibility that learning a second language does not create an additional burden for those with SLI, but deficits will be seen equally in both languages as they would in one.

Since student success is not isolated in the classroom but contributes to a broader societal success, it is also important to look at the effects of language on familial relations. Lily Wong Fillmore (2000) discusses how the traditional recommendation for ELLs of speaking only English in the household can create devastating familial impacts considering that the vast majority of these children come from families who are also not proficient in English. If families are also not proficient English speakers, counseling families to speak “English only” isolate children from their families, deteriorate family relationships, separate children from their sense of familial belonging, create a loss of knowledge of self, lack of competence in language to communicate cultural nuances, and it is difficult for parents to maintain their authority figure. Therefore, It is recommended to slow subtractive language acquisition by supporting the L1 through family and bilingual educators (Fillmore, 2000).

Instructional methods that support the primary language of ELLs currently vary from integrated to supplemental bilingual education (Maldonado, 1994). In a study published by Restrepo et al. (2010), researchers found that even adding 30 minutes of daily supplemental Spanish oral language instruction produced positive outcomes for increasing sentence length, complexity, and grammaticality in Spanish-speaking children attending English-only preschools. Though bilingual program models and supporting evidence for their efficacy do exist, Maldonado (1994) writes:

In spite of... federal laws, the majority of special education programs as presently structured do not meet the needs of limited English proficiency exceptional students. Public Law 94-142 does not address the language of instruction issue. As a consequence, most special education programs are conducted in English. Total language immersion programs for students who have an exceptionality are inappropriate and do not provide the least restrictive environment mandated by federal laws. Also, these programs jeopardize the main principle of effective learning: the learner's ability to understand and interact with what is being presented (p. 132).

At this point, there are more ELLs than ever before in the United States school system, a body of research that substantiates bilingual instruction as best practice for supporting these students in their academic success, and yet there are still an overall lack of bilingual service providers to meet the needs of these students.

The Bilingual Professional

To focus again on the field of speech-language pathology, it is important to understand what it takes to be considered a bilingual service provider to better understand why there is a lack of these professionals. Though there is not yet an official bilingual SLP licensure, ASHA states that a bilingual therapist or service provider must possess qualifications across five areas of competency: (1) native or near-native proficiency in another language in the areas of vocabulary, word-meaning, phonology, grammar, and pragmatics; (2) knowledge of typical language development for *both monolingual and*

bilingual speakers of the language; (3) the ability to administer and interpret diagnostics in the other language and distinguish between a difference and a disorder; (4) the ability to provide treatment in the other language; (5) the ability to recognize cultural factors that may impact services (Cornish, 2011). These standards require bilingual SLPs to be qualified above and beyond their monolingual counterparts as well as be qualified above and beyond those who can “simply” speak Spanish. As Nathan Cornish (2011) states best:

Even native speakers sometime struggle to communicate certain concepts and terminology if they don't typically communicate about them in their first language. The ability to hold a flawless conversation about economics or politics in another language might not be the most helpful yardstick in determining whether you are ready to provide services in that language (p. 17).

That is, a bilingual service provider must possess an additional skill set that differs from ways we typically measure the fluency of another person's language abilities, for example: being “fluent enough” to navigate a foreign country and interact with the people may not be “fluent enough” to be clinically analytical of that other language or be a language model for the clients on a typical SLP's caseload. The additional lack of bilingual service providers to meet the current population of L1 Spanish speakers in the United States creates many inherent problems that include, though are not limited to, the misidentification of bilingual children with language disorders (Pena, Gilliam, Bedore, & Bohman, 2011), greater difficulty in implementing family-centered practice (Moore & Perez-Mendez, 2011), and less support for the child's primary language while acquiring the second language (Cummins, 1999). In order to reform these inherent problems, it is essential that more personnel be trained as bilingual professionals. Given the additional layer of expertise expected of these professionals, it can be presumed that appropriate graduate student training will be an integral part of the solution.

Review of Graduate Level Bilingual/Multicultural Emphasis Programs

In December 2013, the author of this study conducted a web-based search of speech-language pathology Master's level programs. The purpose of this search was to determine how these programs are addressing the current need for more trained bilingual [Spanish-English] professionals and how many of these programs offer student training that meet the ASHA bilingual service provider standards as outlined above. The web-based search was conducted through the ASHA EdFind tool; a tool that catalogs accredited Speech, Language and Hearing programs. After selecting the "Bilingual/Multicultural" filter, the search generated 26 institutions that provide this focus for speech-language pathology students at the master's level. A further web-based investigation was conducted of those 26 programs to determine which specifically provided a Spanish-English bilingual emphasis, and included a language proficiency requirement; a basic criterion as outlined by ASHA standards. By reviewing individual program websites, it was found that of the 26 listed programs only 9 programs offered a Spanish-English focus *and* required graduate students to demonstrate language proficiency as part of the bilingual emphasis program. Of these 9 programs, only one actually listed a recommended Spanish language course sequence, starting at the 300-level, as a means to support the Spanish language development of graduate students participating in the bilingual emphasis program.

It is understood that a web-based search does not completely encapsulate the full curriculum of what a student experiences during their graduate coursework, whether or not their school is marketed as having a "Bilingual/Multicultural" emphasis program. Some programs do enhance the students' knowledge and skills in the basics of second language acquisition, key strategies for accurate assessment, and intervention in bilingual practice through embedded teaching within existing courses, while other programs use an "add-on" strategy, or a separate course entirely, to teach these topics, knowledge, and skills. Even so, with the knowledge that a service provider must possess an additional skill set to deliver bilingual services effectively and ethically, it is inappropriate for only one university to

advertise a complete bilingual training program.

In summary, with increasing levels of ELLs attending the nation's schools, combined with a lack of bilingual service providers to meet their educational needs, it is time for universities to enhance their training of master's level students to produce adequately skilled bilingual SLPs to meet the current need for their services.

CU Boulder Pilot Program

The CU Boulder pilot program featured in this study, SLHS 6000: Issues in Bilingual Practices, was a two-part, two-credit course offered to first year master's level students in the Speech, Language, and Hearing Sciences (SLHS) Department. The first part of the course was a two-credit, semester long seminar that covered topics specific to bilingual practice such as current demographics and projected trends of bilingual populations, interviewing strategies for multicultural populations, family centered practices that are sensitive to differences yet recognize the danger of assumptions within and across cultures, current evidence-base for effective assessment and intervention, and appropriate use of cultural mediators and translators. The second part of the course was a two-week language immersion program in La Paz, Mexico that included experiences specifically designed for speech-language pathology students aspiring to be bilingual service providers. In the span of two weeks, students attended a local Spanish language school four days per week, four hours per day. This intensity totaled 32 hours of intensive and individualized Spanish language instruction that focused on improving conversational language skills and learning professional terminology related to the field of speech-language pathology. Spanish language practice was also embedded into additional professional and cultural experiences that included: (1) touring a pediatric rehabilitation facility, attending rehabilitation staff professional development trainings, and observing speech-language pathologists therapy sessions at the rehabilitation facility; (2) conducting ethnographic interviews with families of children with disabilities, providing family counseling and recommendations for supporting language development in

the home, and teaching interactive storybook reading to these families; and (3) hosting a coffee hour for local speech-language pathologists to discuss professional issues.

Purpose of Present Study

The purpose of this study is to analyze the efficacy of a two-week pilot immersion program in La Paz, Mexico, designed by the Speech, Language, and Hearing Sciences program at the University of Colorado at Boulder. This pilot program will be analyzed for its ability to increase the level of Spanish language skills and confidence in providing bilingual therapies of the graduate students in attendance. The provision of bilingual services is considered evidence based practice, as outlined in the above research, as the most effective intervention model for supporting the language growth and academic growth of bilingual clients. As the research displays, there is a discrepancy between bilingual SLPs and those bilingual children requiring services. Adding to this discrepancy is the lack of Master's level bilingual [Spanish-English] emphasis programs that are available to train graduate students in the skills required to provide effective services. Therefore, the results of this study will be utilized to provide recommendations in how to address the discrepancies within the bilingual realm of speech-language pathology at the graduate program level.

Research Question

The research question, which guides this thesis, is:

Are 32 hours of immersive Spanish instruction during a two-week educational excursion to La Paz, Mexico sufficient in improving MA-SLP graduate students' level of fluency in conversational Spanish language skills and confidence in skills required to provide bilingual therapies of graduate level students?

It is hypothesized that an immersive Spanish instruction experience during a 2-week period will result in an increase in expressive Spanish fluency and an increase in confidence of bilingual therapy skills. For the purpose of this study, fluency will be defined by three components: (1) rate of speech measured in

words per minute, (2) number of different words used, and (3) number of total words used. Level of confidence will be defined by a ratio of level of interest in providing bilingual services to the level of hesitancy in providing said services. Therefore, it is hypothesized that after a two-week educational excursion to La Paz, Mexico, fluency will improve participant rate of speech, number of different words used, and number of total words used will increase. Confidence will be measured by participant level of interest in providing bilingual services and will increase while their level of hesitancy will decrease. Finally, it is hypothesized that participants not attending the La Paz, Mexico trip will show no changes across fluency and confidence measures.

Methods

Participants

Participants included in this study were six graduate students actively enrolled in the SLHS Department class of 2015 at CU Boulder. Participants were homogenous in that they were all female, identified their race as 'white', were born in the United States, were native English speakers, and were living in Boulder, Colorado during the duration of the study. The participants were divided into two groups, experimental and control, based on those enrolled in the SLHS 6000: Issues in Bilingual Practice course and those who were not. The author of the study, who is also a member of the CU Boulder SLHS Department graduate class of 2015, recruited these participants. Additional requirements for the experimental group included attending the language immersion trip to La Paz, Mexico, some previous Spanish language abilities, and the ability to participate in the study throughout all three data point measures; a commitment of approximately five months. Additional requirements for the control group included not attending the language immersion trip to La Paz, Mexico, some previous Spanish language abilities, and the ability to participate in the study throughout all three data point measures; also a five month commitment. The experimental group had four participants and control group participants had two for a total of six participants who completed this study.

Additional demographic information and information regarding language exposure, language use, and language study of Spanish and English languages was collected during the initial pre-test survey completed by all participants as displayed in Table 1: *Demographic and Linguistic Information of Participants*.

Table 1: *Demographic and Linguistic Information of Participants*

Participant	Age	Age Exposed to English	Age Exposed to Spanish	Percent time speaking English growing up	Percent time speaking Spanish growing up	Years of formal Spanish language schooling
A1	24	Birth	5-6 years	95	5	10-12
A2	24	Birth	9-10 years	100	0	9-10
A3	30	Birth	13-14 years	100	0	5-6
A4	25	Birth	13-14 years	100	0	7-8
B1	28	Birth	13-14 years	100	0	3-4
B2	30	Birth	13-14 years	100	0	7-8

A1-4= Experimental group, B1-2= Control group

This demographic and linguistic data revealed that ages of participants ranged from 24 to 30 years, and all participants were first exposed to, and continued speaking, the English language since birth. Age of first exposure to the Spanish language ranged between 5-6 years (one participant), 9-10 years (one participant), and 13-14 years (four participants). Five of the six participants spoke English 100% of the time while growing up. One of the six participants spoke English 95% of the time and Spanish 5% of the time while growing up. The number of years of formal Spanish language schooling was the measure that revealed the most variation among participants. One participant had 3-4 years, one participant had 5-6 years, two participants had 7-8 years, one participant had 9-10 years, and one participant had 10-12 years of formal Spanish language schooling. The overall range in this measure was 3-4 years to 10-12 years, a difference of 7-8 years of formal Spanish language schooling received by study participants.

In sum, participants were overall quite uniform in terms of their demographic profile. All participants were young, white females in the same year of the same graduate program. All were born in the United States and living in Boulder, Colorado during the duration of the study. All participants were exposed to English from birth and primarily spoke English while growing up, demonstrating that all

participants spoke English as their primary (L1) language. In terms of the participants' secondary language of Spanish (L2), all were sequential L2 learners meaning they began acquiring Spanish after their first language (English) was already established (ASHA, 2015). Participant Spanish language history was the greatest variant in their overall profiles. Some participants were first exposed to the Spanish language in their early elementary to mid-elementary school years, while most participants were first exposed in their late middle school to early high school years. In addition, there was a 7-8 year spread in the participant that received the least amount of prior Spanish language schooling to the participant that received the most amount of prior Spanish language schooling.

Data Collection

To address the two part research question data were collected through three measures. These three measures included completion of a self-survey a 15-minute conversation facilitated by a native Spanish speaker, and narration of a word-less picture book. All three measures were collected three times in a pre-test, post-test 1, and post-test 2 format. For the experimental group, pre-test measures were collected the week before leaving for the La Paz, Mexico trip, and post-test measures were taken at approximately one month and four to six month intervals, respectively, following pre-test measures. Data for the control group were also collected in the same time-interval format. (See Table 2: *Dates Collection Dates and Time Intervals* for display of this information.)

Table 2: *Dates Collection Dates and Time Intervals*

Participant	Measure	Pre-Test	Post-Test 1	Post-Test 2 ¹
A1	Conversation	05/07/2014	06/09/2014 +1m, 2d	09/30/2014 +4m, 23d
	Narrative	05/07/2014	06/09/2014 +1m, 2d	09/30/2014 +4m, 21d
	Self-Survey	05/07/2014	06/10/2014 +1m, 3d	11/11/2014 +6m, 4d
A2	Conversation	05/07/2014	06/10/2014 +1m, 3d	10/10/2014 +5m, 3d
	Narrative	05/07/2014	06/10/2014 +1m, 3d	10/10/2014 +5m, 3d
	Self-Survey	05/07/2014	06/08/2014 +1m, 1d	11/11/2014 +6m, 4d

A3	Conversation	05/08/2014	06/05/2014 +0m, 28d	09/23/2014 +4m, 15d
	Narrative	05/08/2014	06/05/2014 +0m, 28d	09/23/2014 +4m, 15d
	Self-Survey	05/08/2014	06/10/2014 +1m, 2d	11/11/2014 +6m, 3d
A4	Conversation	05/08/2014	06/04/2014 +0m, 27d	10/8/2014 +5m, 0d
	Narrative	05/08/2014	06/04/2014 +0m, 27d	10/8/2014 +5m, 0d
	Self-Survey	05/08/2014	06/08/2014 +1m, 0d	11/11/2014 +6m, 3d
B1	Conversation	06/25/2014	07/23/2014 +0m, 28d	11/06/2014 +4m, 12d
	Narrative	06/25/2014	07/23/2014 +0m, 28d	11/11/2014 +4m, 17d
	Self-Survey	06/25/2014	07/21/2014 +0m, 26d	11/11/2014 +4m, 17d
B2	Conversation	06/27/2014	07/21/2014 +0m, 24d	11/10/2014 +4m, 14d
	Narrative	06/27/2014	07/23/2014 +0m, 26d	11/10/2014 +4m, 14d
	Self-Survey	06/27/2014	07/20/2014 +0m, 23d	11/11/2014 +4m, 15d

¹Post-Test 2 time intervals measured as difference from Pre-Test

A1-4= Experimental group, B1-2= Control group

Pre-test measures were used as the baseline for both Spanish language skills and confidence in abilities to be a bilingual therapist. Post-test 1 measures were collected to determine if language skills and confidence levels changed based on participation in the La Paz, Mexico immersive program. Post-test 2 measures were also collected to determine level of maintenance of skills across time, though will not be analyzed during this study. Additional post-test 2 information and perceived levels of participant maintenance of Spanish skills can be found in the Appendix A, Table A.1: *Self-reported Spanish language usage and immersion data*, Appendix B, Tables B.1-6, and Appendix D, Table D.1: *Perceived level of Spanish language skill maintenance from post-test 1 to post-test 2*.

To measure the level of fluency of the participants' conversational Spanish language skills, data were collected from a 15-minute conversation with a native Spanish speaker. The native Spanish speaker was recruited and trained by the author, and remained the same conversational partner for all

participants throughout the duration of the study. Though conversations were allowed to take a natural course, prompts and questions were prepared to assist in initiation of conversation and provide the opportunity for both Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 1999) to be included within the conversation. However, strict topic maintenance to the given prompts was not a requirement.

Additionally, to measure fluency skills in Spanish, participants narrated stories from word-less picture books selected from a standardized narrative assessment titled *Dynamic Assessment and Intervention: Improving Children's Narrative Abilities of Narratives*. This standardized assessment includes two word-less picture books used in this study. The participants narrated Book 1 (Two Friends) during the pre-test, Book 2 (A Bird and His Ring) during the post-test 1, and Book 1 (Two Friends) again during post-test 2. When completing the narrative portion of this study, participants were given the instructions to preview the story, and then create a narration in Spanish. They were not given a time limit or time minimum and were not given any models, cues, or prompts during the duration of their narrative. Each narrative was videotaped and saved for review during the coding process. To control for time, a one-minute sample of each narrative was additionally selected and coded as reported throughout the data analysis process.

Finally, to measure the level of confidence in skills required to provide bilingual therapies, an anonymous self-assessment survey was completed by all participants at all three data collection points. These surveys were also used to collect demographic information and a variety of information related to self-perception of Spanish language skills (Gollan, Weissberger, Runnqvist, Montoya, & Cera, 2012), success of the La Paz, Mexico pilot program, and recommendations for future training of graduate students to be effective bilingual therapists. Due to the considerable amount of participant data collected, not all data will be explicitly analyzed during this study. This additional participant data can be accessed in Appendix A, Table A.1: *Self-reported Spanish language usage and immersion data*; Appendix

A, Table: Table A.2: *Self-reported current levels of linguistic proficiency*; and Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*.

Coding

The author of this study completed the coding of the narrative and conversation videos in two stages. During stage one, videos were viewed on a computer, as many times as needed, and transcribed to a Microsoft Word Document. After the transcription was completed in full, the video was reviewed from beginning to end to check for edits and ensure accuracy of the transcript. During stage two the author converted the Microsoft Word Documents to the Spontaneous Analysis of Language Transcription (SALT) program ("SALT Software, LLC," 2012) to enable further analysis of the narrative and conversation samples. After being converted to the SALT program, transcriptions were coded so that accurate fluency measures of total words, different words, and words per minute could be calculated. Therefore, each transcript was coded for mazes, filled paused words, abandoned and interrupted utterances, unintelligible words/utterances, proper names and titles, sound effects, plural bound morphemes, bound pronominal clitics, error words, imitation words, code switched words, part words, and words repeated for emphasis as displayed in Table 3: *Coding key of SALT transcriptions*

Table 3: *Coding key of SALT transcriptions*.

Coding Title and Definition	Code	Example
Mazing: problems associated with utterance formulation and word finding.	()	(word or words)
Filled pause words: words or vocalizations that fill in pauses.	()	(ah, eh, er, hm, hmm, uh, um)
Abandoned utterances: the speaker does not complete his/her thought/utterance but has not been interrupted.	>	Well when I>
Interrupted utterances: the speaker is interrupted and does not complete his/her thought/utterance.	^	He said that^
Unintelligible word(s)/utterance: if a speaker's utterance cannot be understood after three listening attempts.	xxx	I forgot xxx.
Proper Names/Titles: when proper names or titles are used, give the speaker credit for just one word.	Word_Word	New_York

Sound Effects: non-word vocalizations that represent specific sounds.	%soundeffect	%oo
Plural Bound Morphemes: marks the use of plurals.	/	rana/s, verde/s
Bound Pronominal Clitics: marks the use of unstressed object pronouns.	+	da+me+lo
Error word: words that are used incorrectly when the intended word is known.	[EW]	errir[EW:error]
Imitation: identifies the first time that a word is supplied to the speaker by the examiner.	[I]	escuela[I]
Code Switch: English words used during an intended Spanish transcript.	[CS]	I[CS] don't[CS] know[CS]
Part Word: when a speaker fails to complete a word.	(wor*)	She saw the waterm*.
Words Repeated for Emphasis: when word repetitions are used for emphasis, give the speaker credit for just one word to avoid inflation of number of total words or mean length utterance.	word word_word	The dog ran ran_ran.

Note: From SALT software, LLC (Version 2012) [Computer software]. (2012).

Once transcripts were fully coded, each transcript was again reviewed in its entirety to check for errors and ensure that transcripts were an exact representation of the video recording. After coding was completed for the interview, full narrative, and one-minute narrative samples, data collection was completed using the SALT software analysis features. ("SALT Software, LLC," 2012) Raw data collected from SALT transcripts across the pre-test, post-test 1, and post-test 2 can be found in Appendix C, Tables C.1-6. Of the presented data in these tables, for the purpose of this study, focus was given to previously defined fluency measures of words per minute, total number of words, and number of different words.

Data Analysis

Individual Participant Trends

For the purpose of this study, individual participant data was analyzed for trends between pre-test and post-test 1 measures. The analysis includes data collected from self-surveys and SALT analyses of one-minute narrative samples and 15-minute interview samples (see Appendix B, Tables B.1-6 for complete raw data information of these measures).

Experimental Group

Participant A1:

In data collected from the self-survey, A1 was reportedly exposed to Spanish at the youngest age of all participants (5-6 years), received the most formal Spanish schooling (10-12 years), spoke the most amount of Spanish while growing up (5% Spanish to 95% English), and rated her baseline spoken Spanish as the highest of all participants (8- advanced mid). When comparing A1's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she increased across all measures: 8 (advanced mid) to 9 (advanced high) for her spoken Spanish, 6 (intermediate high) to 9 (advanced high) for her oral comprehension, 7 (advanced low) to 9 (advanced high) for her reading abilities, and 7 (advanced low) to 9 (advanced high) for her writing abilities. This means that after returning from the La Paz Mexico two-week program, A1 rated her post-test 1 Spanish language abilities to be 9 (advanced high) across all four language skill areas; an average increase of 2 points on the Likert scale between the pretest and post-test 1, and the highest reported level of Spanish of all participants. In addition, A1 rated her level of interest versus hesitancy in working with bilingual populations to have changed from 6:3 (very interested-somewhat not hesitant) to 7:1 (extremely interested-no hesitancy) between pretest and post-test 1 measures (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*). In regards to her self-perceptions of her abilities to work with bilingual populations (after returning from the La Paz, Mexico program) A1 commented:

I have always been passionate about using Spanish in my practice, but was feeling discouraged and didn't feel my language skills were sufficient. I now feel confident in my ability to continue to develop my Spanish language skills to be a competent provider for this population. Mexico also reminded me how much I love the language.

Based only on these self-survey measures, it shows that A1 perceived an increase in her Spanish language fluency, an increase in her interest for working with bilingual populations, and an overall increase in her confidence for working with these populations.

In data analyzed from the SALT transcriptions, percent change between A1's pre-test and post-test 1 measures were calculated (as displayed in Table 4: *A1 Percent change between pre-test and post-test 1* and Figure 1: *A1 Percent change between pre-test and post-test 1 measures*). Percent change revealed that A1's number of different words spoken increased by 40% in the narrative sample and 2.88% in the interview sample; the number of total words spoken increased by 45.9% in the narrative sample and 7% in the interview sample; and her rate of speech (words per minute) increased by 40% in the narrative sample and 4.9% in the interview sample.

Table 4: *A1 Percent change between pre-test and post-test 1*

Data Measure	1 minute Narrative Sample	Interview
# Different Words	+40	+2.88
# Total Words	+45.9	+7
Words Per Minute	+40	+4.9

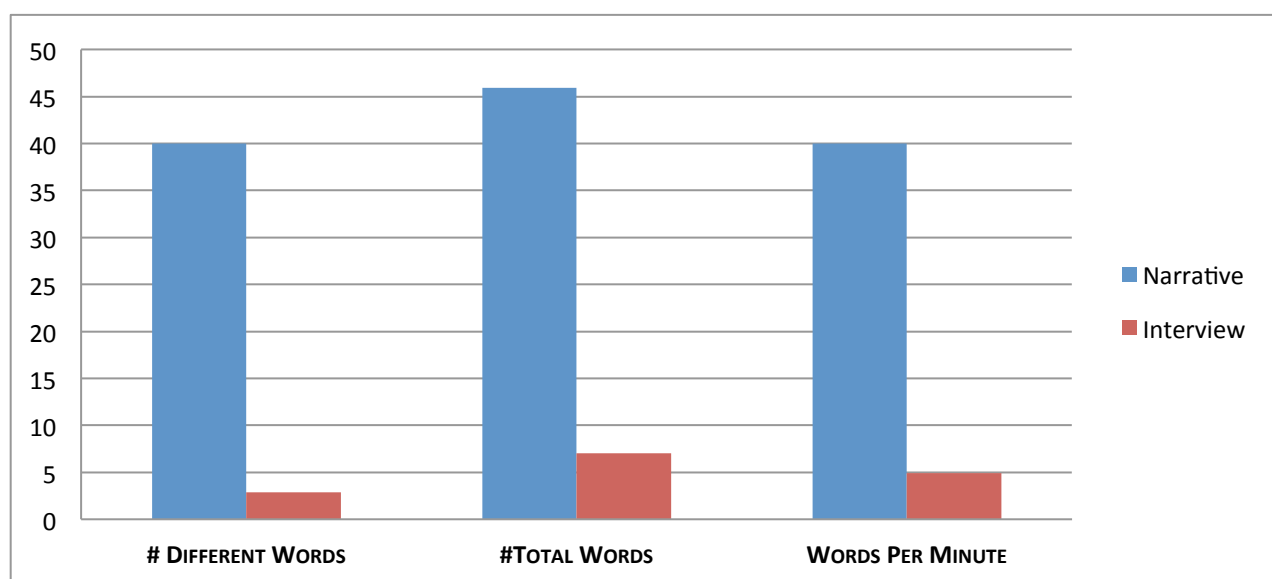


Figure 1: *A1 Percent change between pre-test and post-test 1 measures*. This figure illustrates percent change data, as displayed in Table 4, for A1's one-minute narrative sample and 15-minute interview sample.

As displayed in *Figure 1*, A1's greatest fluency gains were demonstrated in the narrative sample, though noted gains were made in the interview sample, even with A1's high baseline level of spoken Spanish. When comparing A1's self-survey to this transcript data, her perceived increase of spoken fluency of 8 (advanced mid) to 9 (advanced high) complements the increase in fluency measures as calculated from the transcript data. Also, when combining A1's reported increase in confidence levels in providing bilingual therapy, it can be concluded that the SLHS 6000: Issues in Bilingual Practices course was successful in increasing A1's Spanish language fluency and confidence to the level necessary to provide bilingual services.

Participant A2:

In data collected from the self-survey, A2 was reportedly exposed to Spanish at the second youngest age of all participants (9-10 years), received the second most formal Spanish schooling (9-10 years), spoke only English while growing up, and rated her baseline spoken Spanish as the lowest of the experimental group participants (6- intermediate high). When comparing A2's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she remained the same or increased across measures: 6 (intermediate high) to 8 (advanced mid) for her spoken Spanish, remained at 8 (advanced mid) for her oral comprehension, 8 (advanced mid) to 9 (advanced high) for her reading abilities, and 5 (intermediate mid) to 7 (advanced low) for her writing abilities. This means that after returning from the La Paz Mexico two-week program, A2 rated her post-test 1 Spanish language abilities to be 7 (advanced low) to 9 (advanced high) across all four language skill areas; an average increase of 1.25 points on the Likert scale between pretest and post-test 1 measures. In terms of A2's level interest versus hesitancy in working with bilingual populations (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*) she initially rated herself 3:6 (somewhat interested-very hesitant) This rating changed minimally to 3:5 (somewhat interested-somewhat not hesitant) for which A2 commented:

I do not have an interest in targeting literacy and language development and don't believe my model of Spanish would be sufficient. I am, however, setting a goal to establish proficiency in providing services to Spanish-speaking patients. My hesitancy lies in my still-limited exposure to everyday, rapid Spanish and my limited range of vocabulary in understanding what patients share with me.

Based only on these self-survey measures, it shows that A2 perceived an increase in her Spanish language fluency and a minor decrease in her hesitancy to work with bilingual populations, though no increase in her interest to work with bilingual populations.

In data analyzed from the SALT transcriptions, percent change between A2's pre-test and post-test 1 measures were calculated (as displayed in Table 5: *A2 Percent change between pre-test and post-test 1* and Figure 2: *A2 Percent change between pre-test and post-test 1 measures*). Percent change revealed that A2's number of different words spoken increased by 23% in the narrative sample and 25% in the interview sample; the number of total words spoken increased by 58% in the narrative sample and 42% in the interview sample; and her rate of speech (words per minute) increased by 54% in the narrative sample and 14% in the interview sample.

Table 5: *A2 Percent change between pre-test and post-test 1*

Data Measure	1 minute Narrative Sample	Interview
# Different Words	+23	+25
# Total Words	+58	+42
Words Per Minute	+54	+14

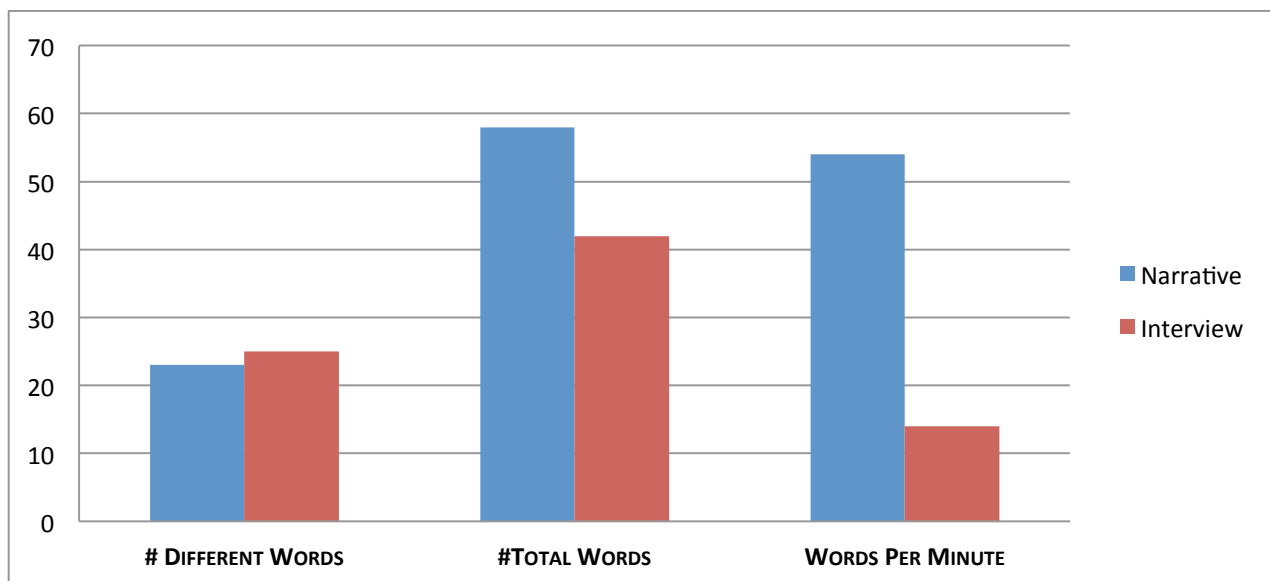


Figure 2: A2 Percent change between pre-test and post-test 1 measures. This figure illustrates percent change data, as displayed in Table 5, for A2's one-minute narrative sample and 15-minute interview sample.

As displayed in *Figure 2*, A2 made impressive gains in both interview and narrative samples across fluency measures. However, even with increased linguistic ability, these gains did not translate to increased interest in providing bilingual services. For A2, it can be concluded that while the SLHS 6000: Issues in Bilingual Practices course was successful in improving her Spanish language fluency, it did not increase her linguistic and confidence to the level necessary to provide bilingual services as an SLP.

Participant A3:

In data collected from the self-survey, A3 was reportedly exposed to Spanish at 13-14 years (the age selected for most participants), received 5-6 years of formal Spanish schooling, spoke only English while growing up, and was the only participant to have never spent time in a Spanish-speaking country. When comparing A3's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she remained the same or increased across measures: 7 (advanced low) to 8 (advanced mid) for her spoken Spanish, remained at 6 (intermediate high) for her oral comprehension, 6 (intermediate high) to 8 (advanced mid) for her

reading abilities, and 6 (intermediate high) to 7 (advanced low) for her writing abilities. This means that after returning from the La Paz Mexico two-week program, A3 rated her post-test 1 Spanish language abilities to be 6 (intermediate high) to 8 (advanced mid) across all four language skill areas; an average increase of 1 point on the Likert scale between the pretest and post-test 1. In addition, A3 rated her level of interest versus hesitancy in working with bilingual populations to have improved markedly from 3:6 (somewhat interested-very hesitant) to 6:3 (very interested-somewhat not hesitant) between pretest and post-test 1 measures (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*). In regards to her self-perceptions of her abilities to work with bilingual populations (after returning from the La Paz, Mexico program) A3 commented “I remembered how much I love speaking Spanish and gained confidence in using Spanish with native speakers. I would love to work with this population at least some of the time, but feel I have some learning to do first.” Based only on these self-survey measures, it shows that A3 did perceive an increase in her Spanish language fluency, as well as a notable increase in her interest and an equally notable decrease in her hesitancy for working with bilingual populations.

In data analyzed from the SALT transcriptions, percent change between A3’s pre-test and post-test 1 measures were calculated (as displayed in Table 6: *A3 Percent change between pre-test and post-test 1* and *Figure 3: A3 Percent change between pre-test and post-test 1* measures). Percent change revealed that A3’s number of different words spoken increased by 8.8% in the narrative sample and 21% in the interview sample; the number of total words spoken increased by 15% in the narrative sample and 16% in the interview sample; and her rate of speech (words per minute) increased by 1.3% in the narrative sample and 29% in the interview sample.

Table 6: *A3 Percent change between pre-test and post-test 1*

Data Measure	1 minute Narrative Sample	Interview
# Different Words	+8.8	+21
# Total Words	+15	+16
Words Per Minute	+1.3	+29

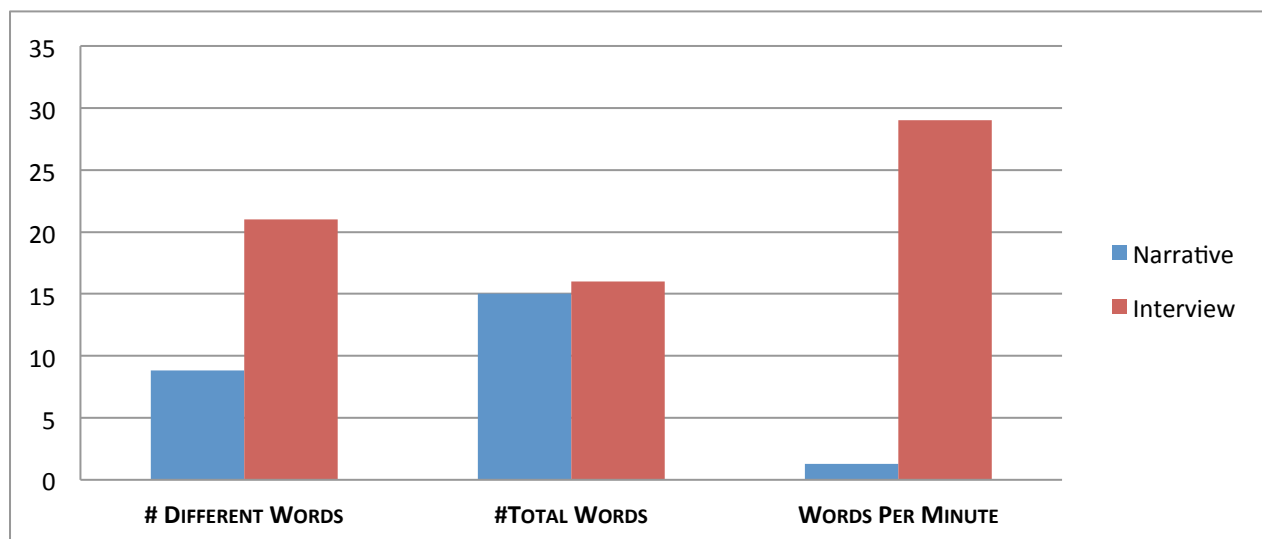


Figure 3: A3 Percent change between pre-test and post-test 1 measures. This figure illustrates percent change data, as displayed in Table 6, for A3's one-minute narrative sample and 15-minute interview sample.

As displayed in *Figure 3*, A3 made impressive improvements in her conversational fluency as measured in the interview sample with additional gains observed in the narrative sample as well. When comparing A3's self-survey to this transcript data, her perceived increase in spoken fluency of 6 (intermediate high) to 8 (advanced mid) complements the increase in fluency measures as calculated from the transcript data. This noted increase in linguistic fluency does complement A3's reported increase in confidence levels in providing bilingual therapy. However, even with improvements in linguistic fluency and interest levels, A3's hesitancy level was reported as a 3 (somewhat not hesitant) and she noted that further "learning" would be required before she could provide bilingual services. Therefore, for A3, it can be concluded that while the SLHS 6000: Issues in Bilingual Practices course was successful in improving her Spanish language fluency and confidence levels, it did not increase her linguistic abilities and confidence to the level necessary to provide bilingual services as an SLP.

Participant A4:

In data collected from the self-survey, A4 was reportedly exposed to Spanish at 13-14 years (the age selected for most participants), received 7-8 years of formal Spanish schooling, and spoke only English while growing up. When comparing A4's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she increased across all measures: 7 (advanced low) to 8 (advanced mid) for her spoken Spanish, 8 (advanced mid) to 9 (advanced high) for her oral comprehension, 8 (advanced mid) to 9 (advanced high) for her reading abilities, and 8 (advanced low) to 9 (advanced high) for her writing abilities. This means that after returning from the La Paz Mexico two-week program, A4 rated her post-test 1 Spanish language abilities to be 8 (advanced mid) to 9 (advanced high) across all four language skill areas; an average increase of 1 point on the Likert scale between the pretest and post-test 1. In addition, A4 rated her level of interest versus hesitancy in working with bilingual populations to have changed from 7:4 (extremely interested-indifferent) to 7:2 (extremely interested-minimal hesitancy) between pretest and post-test 1 measures (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*). In regards to her self-perceptions of her abilities to work with bilingual populations (after returning from the La Paz, Mexico program) A4 commented:

I am certain that I want to incorporate the use of my Spanish language skills into the profession because I know there is a huge need and feel that I can make a difference by utilizing the skills I have. I am confident that my skills are at a level that I can begin to help families and that I am already at a point where we can communicate about individual needs and family goals effectively. By continuing to work with, improve, and maintain my Spanish I will gain confidence in my ability to make a solid difference in the bilingual Spanish-English community.

Based only on these self-survey measures, it shows that A4 perceived an overall increase in her Spanish language fluency and confidence levels, and feels prepared to beginning working with bilingual populations.

In data analyzed from the SALT transcriptions, percent change between A4's pre-test and post-test 1 measures were calculated (as displayed in Table 7: *A4 Percent change between pre-test and post-test 1*, and Figure 4: *A4 Percent change between pre-test and post-test 1 measures*). Percent change revealed that A4's number of different words spoken increased by 22% in the narrative sample and 8.6% in the interview sample; the number of total words spoken increased by 2.9% in the narrative sample and 29% in the interview sample; and her rate of speech (words per minute) remained the same in the narrative sample and increased by 24% in the interview sample.

Table 7: *A4 Percent change between pre-test and post-test 1*

Data Measure	1 minute Narrative Sample	Interview
# Different Words	+22	+8.6
# Total Words	+2.9	+29
Words Per Minute	0	+24

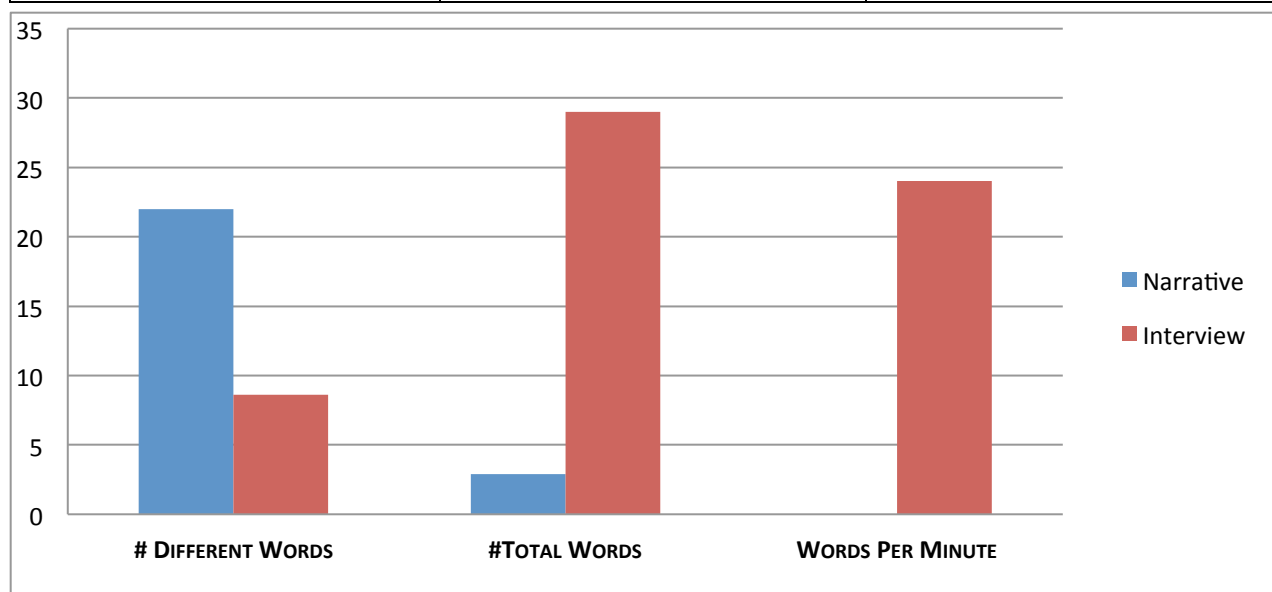


Figure 4: *A4 Percent change between pre-test and post-test 1 measures*. This figure illustrates percent change data, as displayed in Table 7, for A4's one-minute narrative sample and 15-minute interview sample.

As displayed in *Figure 4*, A4 had moderate overall improvements in the narrative sample with increased improvements in the interview sample. When comparing A4's self-survey to this transcript data, her perceived increase of spoken fluency of 7 (advanced low) to 8 (advanced mid) complements the increase in fluency measures as calculated from the transcript data. Also, when combining A4's reported increase in confidence levels in providing bilingual therapy, and comments regarding her preparedness in providing these services, it can be concluded that the SLHS 6000: Issues in Bilingual Practices course was successful in increasing A4's Spanish language fluency and confidence to the level necessary to provide bilingual services.

Control Group

Participant B1:

In data collected from the self-survey, B1 was reportedly exposed to Spanish at 13-14 years (the age selected for most participants), received the least amount of formal Spanish schooling (3-4 years), spoke only English while growing up, and rated her baseline spoken Spanish as the lowest of all participants (2- novice mid). When comparing B1's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she remained the same or decreased across measures: remained at 2 (novice mid) for her spoken Spanish, 4 (intermediate low) to 3 (novice high) for her oral comprehension, 4 (intermediate low) to 3 (novice high) for her reading abilities, and remained at 3 (novice high) for her writing abilities. Therefore, B1 rated her post-test 1 Spanish language abilities to be 2 (novice mid) to 3 (novice high) across all four language skill areas, an average decrease of .5 points on the Likert scale between the pretest and post-test 1. In addition, B1 rated her level of interest versus hesitancy in working with bilingual populations as not changing but remaining at 3:5 (somewhat interested-somewhat hesitant) for both pretest and post-test 1 measures (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*). In regards to her self-perceptions of her abilities to work with bilingual

populations, B1 commented, "I would need to improve my Spanish skills a lot." Based only on these self-survey measures, it shows that B1 perceived a mild decrease in her Spanish language abilities (not observed in the experimental participants), and no change in her "somewhat interested-somewhat hesitant" confidence levels for working with bilingual populations.

In data analyzed from the SALT transcriptions, percent change between B1's pre-test and post-test 1 measures were calculated (as displayed in Table 8: *B1 Percent change between pre-test and post-test 1*, and *Figure 5: B1 Percent change between pre-test and post-test 1 measures*). Percent change revealed that B1's number of different words spoken decreased by 24% in the narrative sample and increased by 20% in the interview sample; the number of total words spoken decreased by 6% in the narrative sample and increased by 17% in the interview sample; and her rate of speech (words per minute) increased by 21% in the narrative sample and 17% in the interview sample.

This pattern of decreases in the narrative sample and increases in the interview sample, a pattern that differs from the experimental group, can be explained by an increased amount of code-switched words used by B1 during her interview samples. That is, for all three fluency measures (i.e., number of different words, number of total words, and words per minute) the values are calculated with the inclusion of code-switched words. For the other five participants, their total number of code-switched words used during the interview sample was only a fraction of their total completed words, an average of .81% of code-switched words to total completed words. Conversely, B1's percent of code-switched words to total completed words was 16% for the interview pre-test and 28% for the interview post-test 1. Unlike the other participants, B1's number of code-switched words impacted increases data measures such as number of different words, number of total words, and words per minute. Therefore, her percent change for the interview sample across these measures should be interpreted with the consideration that the values are inflated. When number of total words was calculated with the exclusion of the code-switched words (as displayed in Table B and *Figure 5*), it showed that B1

decreased by 2% from pre-test to post-test 1 in the interview sample. For the number of total words measure alone, B1's use of code-switched words inflated this value by 21%, thereby requiring the other interview sample data to be interpreted with this level of inflation.

Table 8: B1 Percent change between pre-test to post-test 1

Data Measure	1 minute Narrative Sample	Interview
# Different Words	-24	+20
# Total Words	-6	+19
#Total Words Not Code-Switched	-	-2.0
Words Per Minute	+21	+17

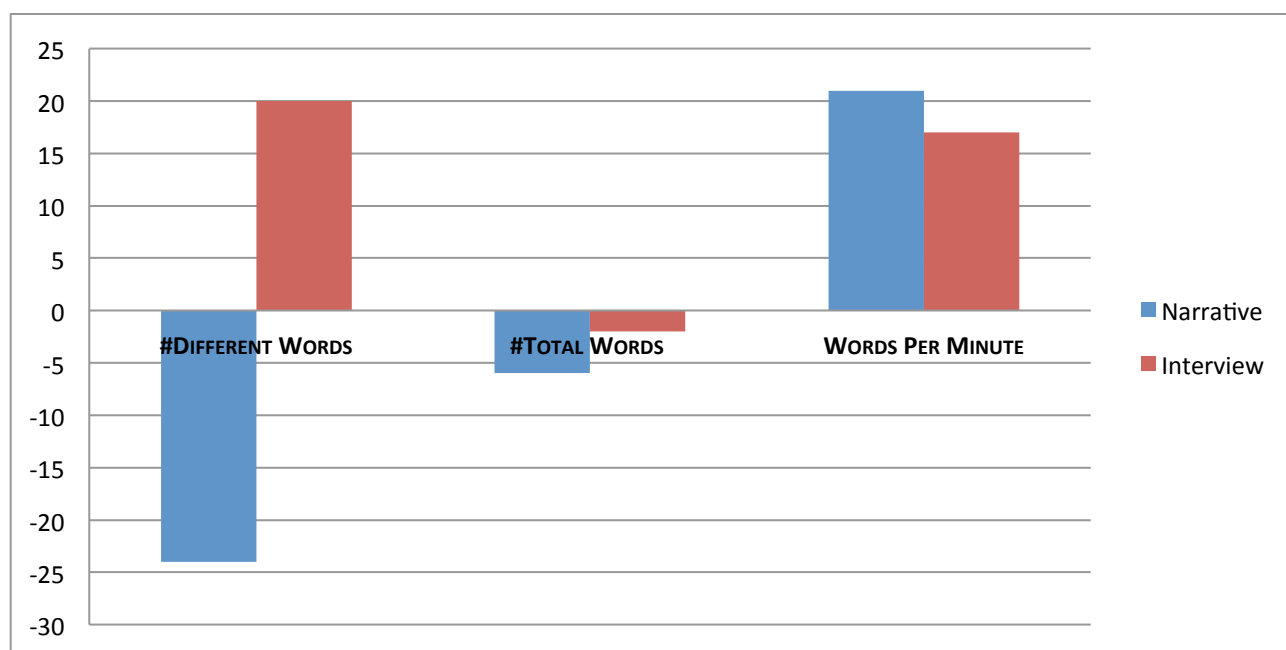


Figure 5: B1 Percent change between pre-test and post-test 1 measures. This figure illustrates percent change data, as displayed in Table 8, for B1's one-minute narrative sample and 15-minute interview sample. The number of total words measure for interview sample displays B1's number of total words not code-switched.

As displayed in Figure 5, though B1 had an increase in her narrative sample rate of speech measure, her decrease in number of different words and total words in the narrative sample and substantially increased use of code-switched words in the interview sample do not support an improvement of spoken Spanish fluency. Also, when combining B1's reported decrease in linguistic skills and no change to her low confidence levels, it can be concluded that B1's post-test 1 outcomes did not

mirror the outcomes of those that participated in the SLHS 6000: Issues in Bilingual Practice course, and that B1 does not possess the necessary linguistic abilities and confidence levels to provide bilingual services as an SLP.

Participant B2:

In data collected from the self-survey, B2 was reportedly exposed to Spanish at 13-14 years (the age selected for most participants), received 7-8 years of formal Spanish schooling, and spoke only English while growing up. When comparing B2's pre-test to post-test 1 self-rated Spanish language abilities (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*) she remained the same or increased across measures: 7 (advanced low) to 8 (advanced mid) for her spoken Spanish, 9 (advanced high) to 9 (advanced high) for her oral comprehension, 8 (advanced mid) to 9 (advanced high) for her reading abilities, and 7 (advanced low) to 9 (advanced high) for her writing abilities. Therefore, B2 rated her post-test 1 Spanish language abilities to be 8 (advanced mid) 9 (advanced high) across all four language skill areas, an average increase of 1 point on the Likert scale between the pretest and post-test 1. In addition, B2's level of interest versus hesitancy in working with bilingual populations remained the same at 7:2 (extremely interested-minimal hesitancy) for both pretest and post-test 1 measures (as displayed in Appendix C, Table C: *Self-reported level Interest and hesitancy for working with bilingual populations*). In regards to her self-perceptions of her abilities to work with bilingual populations, B2 commented:

I love to use Spanish and I am passionate about access to culturally and linguistically appropriate assessment and services. I am slightly hesitant because I am not a native speaker and I am not culturally from this population, so I know there is some barrier to be navigated in providing services appropriately.

Based only on the self-survey measure, it shows that B2 perceived an increase in her Spanish language abilities, while there was no change to her high confidence levels for providing bilingual services.

In data analyzed from the SALT transcriptions, percent change between B2's pre-test and post-test 1 measures were calculated (as displayed in Table 9: *B2 Percent change between pre-test and post-test 1*, and Figure 5: *B2 Percent change between pre-test and post-test 1 measures*). Percent change revealed that B1's number of different words spoken decreased by 25% in the narrative sample and 1.3% in the interview sample; the number of total words spoken increased by 5.9% in the narrative sample and increased by 2.3% in the interview sample; and her rate of speech (words per minute) increased by 5.9% in the narrative sample and 1.4% in the interview sample.

Table 9: *B2 Percent change between pre-test and post-test 1*

Data Measure	1 minute Narrative Sample	Interview
# Different Words	-25	-1.3
# Total Words	+5.9	+2.3
Words Per Minute	+5.9	+1.4

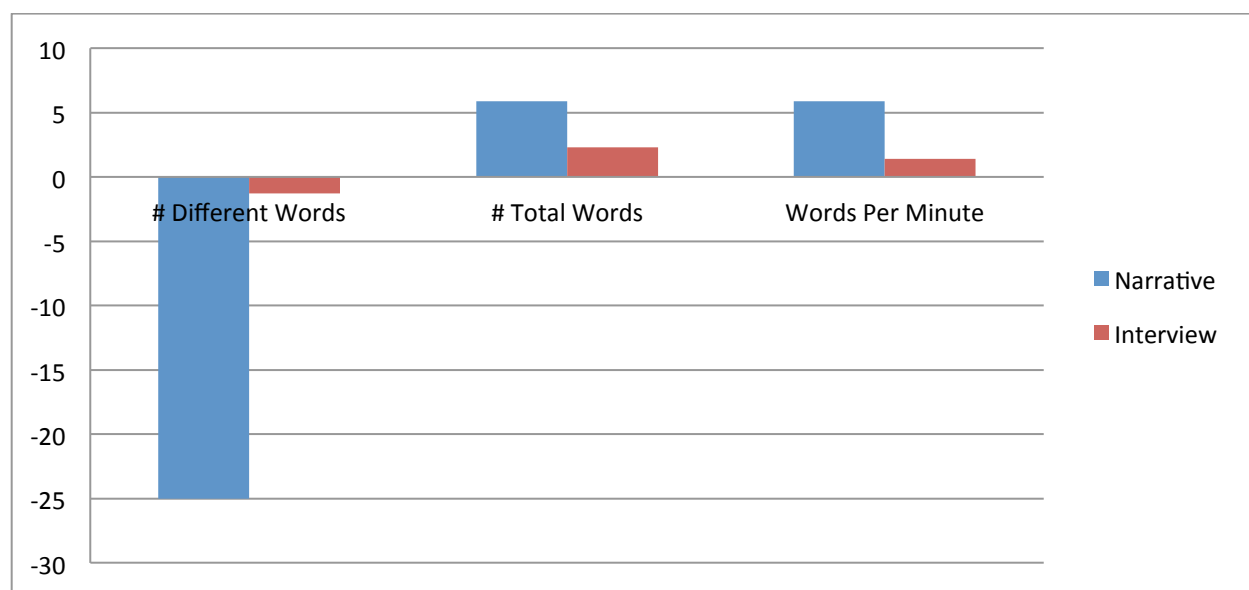


Figure 6: B2 Percent change between pre-test and post-test 1 measures. This figure illustrates percent change data, as displayed in Table 9, for B2's one-minute narrative sample and 15-minute interview sample.

As displayed in Figure 6, B2's percent changes were contradictory to perceived changes as reported in her self-survey. B2's Spanish language abilities reportedly increased an average of 1-point on the Likert scale, and therefore can be compared to experimental group participants A3 and A4 who also

reported an average Likert scale increase of 1-point. In transcript data, participants A3 and A4 also demonstrated increases of 8.6-29% across fluency measures and no decreases across any fluency measures. In contrast, B2's greatest increase was 5.9% with decreases in the narrative sample, while her interview sample stayed virtually the same across all fluency measures. Additionally, unlike all members from the experimental group and just like control group participant B1, B2 reported no change to her confidence levels in providing bilingual services. Therefore, it can be concluded that B2 post-test 1 outcomes did not mirror the outcomes of those that participated in the SLHS 6000: Issues in Bilingual Practice course, and that B2 had no substantiated increases to her Spanish language fluency, and no change to her confidence level in providing bilingual services.

Trends Between Experimental and Control Groups:

When comparing results from the self-survey between pre-test and post-test 1, the experimental group's average change the Spanish abilities Likert rating scale was an increase of 1.31 points; the control group's average was an increase of .25 points. The experimental group generally rated an overall improvement in their Spanish language abilities with some measures staying the same, while the control group had more variable results. One participant perceived her Spanish abilities decreased or remained the same, while the other perceived her abilities remained the same or increased (as displayed in Appendix A, Table A.2: *Self-reported current levels of linguistic proficiency*).

When comparing change of interest versus hesitancy, the experimental group had an average increase of 1 point (ranging of 0-3 points) with their interest in working with bilingual populations, and an average decrease of 2 points (ranging of 1-3 points) with their hesitancy in working with bilingual populations. This increase in interest and decrease in hesitancy presumes an overall increase in confidence with working with bilingual populations between pre-test and post-test 1 measures for the experimental group. For the control group, there was no change between either participant's reported

interest versus hesitancy levels demonstrating no change in their perceived confidence levels for working with bilingual populations.

Experimental and control group average percent change across transcript fluency measures was calculated from individual participant data as displayed in Table 10: *Average percent change between participants from pre-test to post-test 1* and Figure 7: *Average percent change between participants*.

Table 10: *Average percent change between participants from pre-test to post-test 1*

<i>Data Measure</i>	<i>Experimental Group</i>		<i>Control Group</i>	
	Narrative Sample	Interview	Narrative Sample	Interview
# Different Words	+23.5	+14.4	-24.5	+9.35 ²
# Total Words	+30.5	+23.5	-.05	+0.15 ³
Words Per Minute	+23.8	+18.0	+13.5*	+9.2 ²

²includes B1 code switched words

³using "total words excluding code switched words" for B1 participant

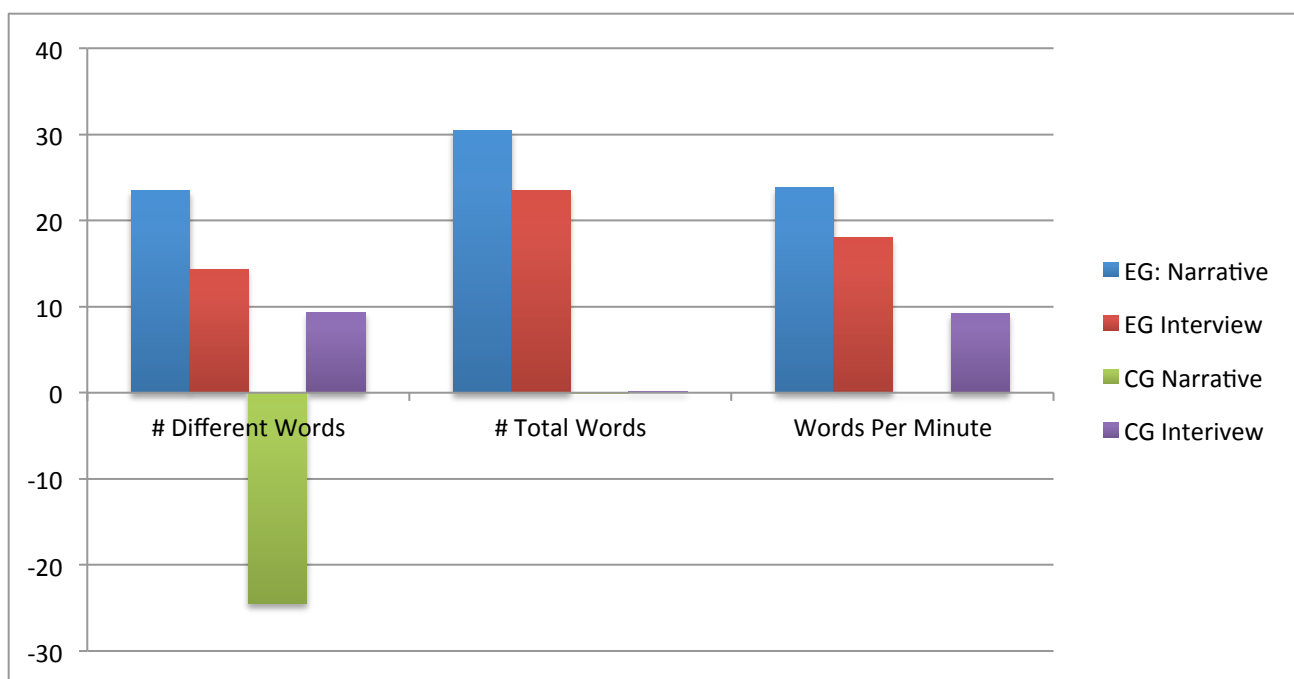


Figure 7: *Average percent change between participants*. This figure displays average percent change between the experimental group (EG) and control group (CG) participants from pre-test to post-test 1 as displayed in Table 10.

For the number of different words the experimental group participants on average increased by 23.5% for the narrative sample and 14.4% for the interview sample, while it decreased by 24.5% and increased

by 9.35% including the inflation of B1's code switched words. For number of total words, the experimental group participants increased on average by 30.5% for the narrative sample and 23.5% for the interview sample, while the control group decreased by .05% and increased by .15%. For words per minutes, the experimental group on average increased by 23.8% for the narrative sample and 18% for the interview sample, while the control group increased by 13.45% and 9.2% including the inflation of B1's code switched words.

To summarize these group trends, for the number of different words, even with the inclusion of B1's code switched words in the control group interview sample data, the experimental group exhibits substantial positive changes over the control group. For the number of total words, the experimental group exhibited marked positive changes while the control group exhibited virtually no change in this measure. Finally, for words per minute, the experimental group also exhibited marked positive changes while the control exhibited positive change with the inclusion of B1's code switched words in the data calculation.

In conclusion, the experimental group perceived and exhibited consistent increases in their spoken Spanish language fluency in addition to consistent reported increases in their confidence levels for working with bilingual populations. In contrast, the control group perceived and exhibited inconsistent results in their spoken Spanish language fluency and had no change to their perceived levels of confidence in working with bilingual populations.

Conclusion

This thesis asked the question: Are 32 hours of immersive Spanish instruction during a two-week educational excursion to La Paz, Mexico sufficient in improving MA-SLP graduate students' level of fluency in conversational Spanish language skills and confidence in skills required to provide bilingual therapies? Overall, the experimental group participants did improve component factors that relate to their spoken Spanish fluency and increased their self-rated skills and confidence in providing bilingual

therapies greater than that of the control group. Thus, demonstrating that improvements reflected in the experimental group as a whole can be attributed to the 32 hours of immersive Spanish instruction during a two-week educational excursion to La Paz, México. However, when analyzing individual participants while all experimental group participants made marked improvements, not all made improvements to the level necessary to market oneself as a bilingual service provider. In fact, only half of the participants felt that this two-week immersive program enabled them to achieve a bilingual service provider level. The other two participants felt that there was work yet to be done before they could consider themselves a bilingual provider. The two participants who did achieve sufficient language abilities and confidence to provide bilingual services, rated their Spanish the highest in both the pre-test and post-test 1 measures. Therefore, it can be concluded that in order to achieve fluency in conversational Spanish language skills and confidence in skills required to provide bilingual therapies during this two-week immersive trip, a participant's Spanish language abilities must already be at an advanced level. If skills are not at this advanced level before partaking on this trip, 32 hours of immersive Spanish instruction will be sufficient to improve linguistic abilities and even increase confidence, but mostly likely will not be long enough for participants to achieve the levels necessary to be effective bilingual service providers. Finally, it can be concluded that the SLHS 6000: Issues in Bilingual Practices does produce marked improvements in the Spanish conversational ability of graduate level students, and this course can be an important step in supporting them toward the path of becoming a bilingual service provider.

Study Limitations and Recommendations

If this study is to be replicated or enhanced, it is recommended that a greater sample size be assessed in order to account for typical variations that occur during day-to-day expressive language. However, in any single graduate class, having 6 of 32 graduate student participants in a Spanish-speaking study is notable. Though, it would enhance the study to have potential participants complete a

pre-survey to better match experimental and group members and control for variables such as number of years of Spanish language schooling, and perceived level of Spanish language abilities within study participants. Due to some limitations of the abilities in coding Spanish language samples, transcripts were not coded for syntactical accuracy or variability which could provide a broader insight of changes between pre-test and post-test samples, and represent improvements in expressive Spanish language abilities more detailed than measures i.e., total number of words and words per minute as used in this study. This study was also limited in that inter-rater reliability testing was not performed within the coded SALT transcripts. Therefore, inclusion of reliability testing will enhance a future study of this kind. Though this study collected post-test 2 data, this data was outside the scope of this study and therefore not analyzed. A future study could further analyze longitudinal data that addresses how well participants maintained (or did not maintain) their Spanish language skills as a function of the number of clinical assignments and amount of Spanish consistently spoken. Finally, significance testing has not yet been conducted for this study to determine statistical differences between and within participants. This study will benefit from further analysis of statistical findings. “Language fluency” and “bilingualism” are not only dynamic concepts, but are challenging concepts to quantitatively measure. This study attempted to measure components of linguistic fluency, (i.e. total number of words, different words, words per minute) though it can be argued that these components better reflect speech fluency than linguistic proficiency. Finding ways to better assess linguistic proficiency accurately with time-sensitivity will be a beneficial direction for future research.

Discussion

A competent bilingual service provider requires very refined skills. Because the field of speech-language pathology is a profession aiding those with communication needs, the clinician’s number one role is to be a model of what is expected from clients. Therefore, SLPs are articulation models, expressive vocabulary models, healthy voice models, fluency models, pragmatic language models, etc.

With training and practice, this is an attainable skill that becomes second nature to most clinicians, but one that is far more difficult to attain if providing services in a language other than a native one. Since it is expected that bilingual providers do not simply communicate a message with their clients, but also are a language models and a constant analyzer of the client's language production, it is critical that universities consider how they are supporting the development of bilingual service providers. Most graduate programs will have students in their midst with some linguistic competence in a second language and the interest in providing bilingual services, but lacking the means or support to get them there. Brief language immersion programs like the La Paz, Mexico trip analyzed is one model for adding efficient language and skill "boosters" for graduate students. Though, for many students, just this type of program will not be enough. Appendix D, Table D.2: *Recommendations to enhance a future bilingual personnel training program* lists the suggestions selected by this study's participants in the post-test 2 self-survey for further ideas on how universities can support the development of skills to be a bilingual service provider. These ideas included: teaching speech-language pathology specific content in Spanish, a Spanish language course focusing on content related to the field of speech language pathology, more supervised Spanish clinical assignments, a one-credit Spanish course add-on per semester, and the offering of a Bilingual certification track that combines coursework, language support, and clinical placements.

One of the ASHA standards to be considered a bilingual speech-language is near-native language proficiency, (Cornish, 2011) even though language proficiency can be a challenging target to assess. This study found that while self-reported linguistic skills was mostly accurate, having multiple data points through collection of both narrative and conversational transcripts created a more accurate picture of the participants' linguistic abilities. Since it unreasonable to expect university programs to transcribe large language samples as done in this study, a smaller conversational samples of 2-5 minutes or a

fluency rating by a native speaker to complement self-reported linguistic proficiency, may offer the best profile of a graduate student's language ability while respecting limited time budgets.

Like with any aspect related to the field of speech-language pathology, competence is supported by adequate graduate clinician training, supervision, and practical experience. As we begin to accept the vast discrepancy between skilled bilingual service providers and the number of students needing these services, it may be time to turn toward the universities and take a serious look at how more students can graduate with the ability to provide bilingual services to our nation's populations in need.

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APPENDIX A

Table A.1: *Self-reported Spanish language usage and immersion data*

Test	Participant	Total time in a Spanish-speaking country	Amount of time in La Paz, Mexico	Average weekly use of Spanish	Total number of bilingual clinical assignments	Number of Bilingual Internship Placements
PT	A1	4-6 mos.	-	0-1 hrs.	-	-
P1		-	11 days	-	-	-
P2		-	-	0-2 hrs.	3	1
PT	A2	1-3 mos.	-	0-1 hrs.	-	-
P1		-	12 days	-	-	-
P2		-	-	0-2 hrs.	1	N/A
PT	A3	<1 mo.	-	0-1 hrs.	-	-
P1		-	14 days	-	-	-
P2		-	-	0-2 hrs.	1	1
PT	A4	4-6 mos.	-	0-1 hrs.	-	-
P1		-	15 days	-	-	-
P2		-	-	4-6 hrs.	3	2
PT	B1	4-6 mos.	-	0-1 hrs.	-	-
P1		-	0 days	-	-	-
P2		-	-	0-2 hrs.	0	0
PT	B2	1-1.5 yrs.	-	2-4 hrs.	-	-
P1		-	0 days	-	-	-
P2		-	-	0-2 hrs.	3	1

PT= pre-test, P1= post-test 1, P2= post-test 2, A1-4= experimental group, B1-2= control group

Note: Data collected from pre-test, post-test 1, and post-test 2 self-surveys.

Table A.2: *Self-reported current levels of linguistic proficiency*

Test	Participant	English				Spanish			
		S	OC	R	W	S	OC	R	W
PT	A1	10	10	10	10	8	6	7	7
P1		10	10	10	10	9	9	9	9
P2		10	10	10	10	9	8	8	8
PT	A2	9	8	10	9	6	8	8	5
P1		10	10	9	9	8	8	9	7
P2		9	10	9	9	7	8	7	6
PT	A3	10	10	10	10	7	6	6	6
P1		10	10	10	10	8	6	8	7
P2		10	10	10	10	8	7	8	8
PT	A4	10	10	10	10	7	8	8	8
P1		10	10	10	10	8	9	9	9
P2		10	10	10	10	8	9	9	9
PT	B1	10	10	10	10	2	4	4	3
P1		10	10	10	10	2	3	3	3
P2		10	10	10	10	2	2	3	2
PT	B2	10	10	10	10	7	9	8	7
P1		10	10	10	10	8	9	9	9
P2		10	10	10	10	7	9	9	8

S= speaking, OC= oral comprehension, R= reading, W= writing

PT= pre-test, P1= Post-Test 1, P2= Post-Test 2

1=Novice Low, 2=Novice Mid, 3=Novice High, 4=Intermediate Low, 5=Intermediate Mid, 6=Intermediate High, 7=Advanced Low, 8=Advanced Mid, 9=Advanced High, 10=Superior

Note: Data collected from pre-test, post-test 1, and post-test 2 self-surveys.

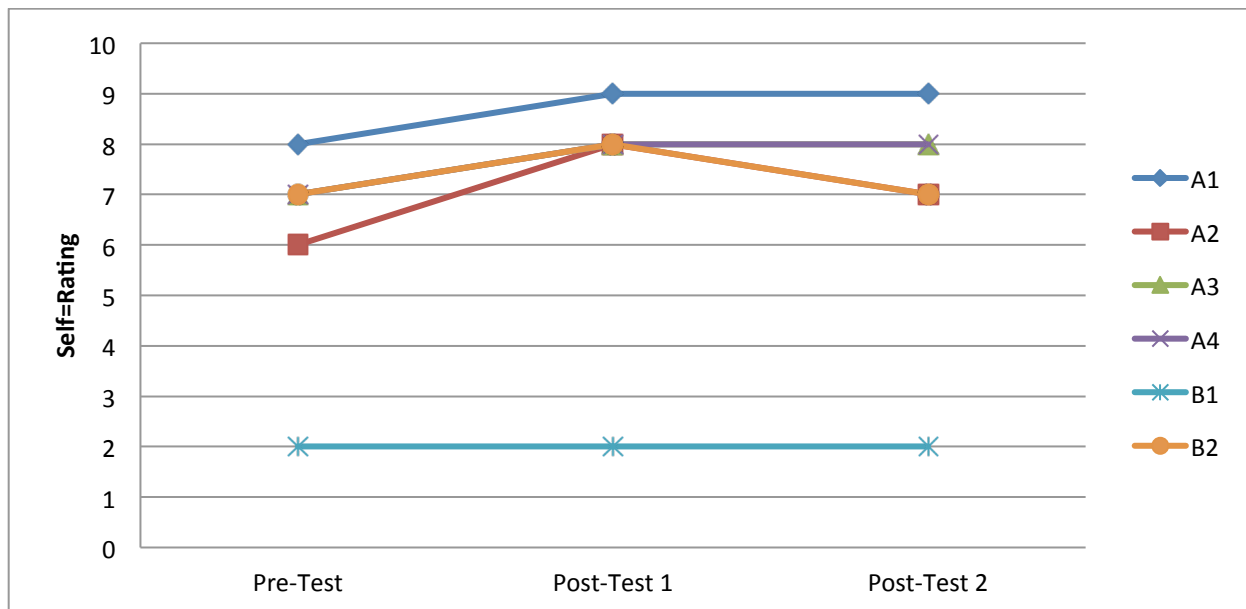


Figure A.1: Self-rated Spanish speaking abilities. This figure displays self-rated Spanish speaking abilities collected from experimental group (A1-4) and control group (B1- 2) participants and displayed In Table A.2: *Self-reported current levels of linguistic proficiency*.

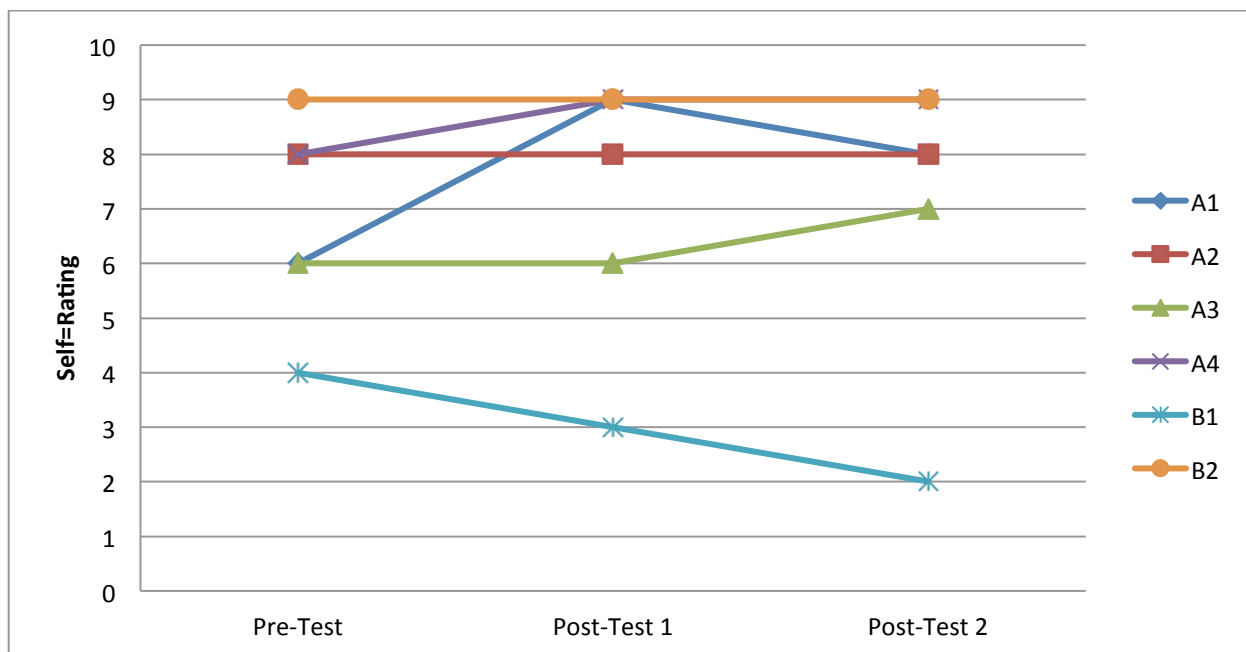


Figure A.2: Self-rated Spanish oral comprehension abilities. This figure displays self-rated Spanish oral comprehension abilities collected from experimental group (A1-4) and control group (B1- 2) participants and displayed In Table A.2: *Self-reported current levels of linguistic proficiency*

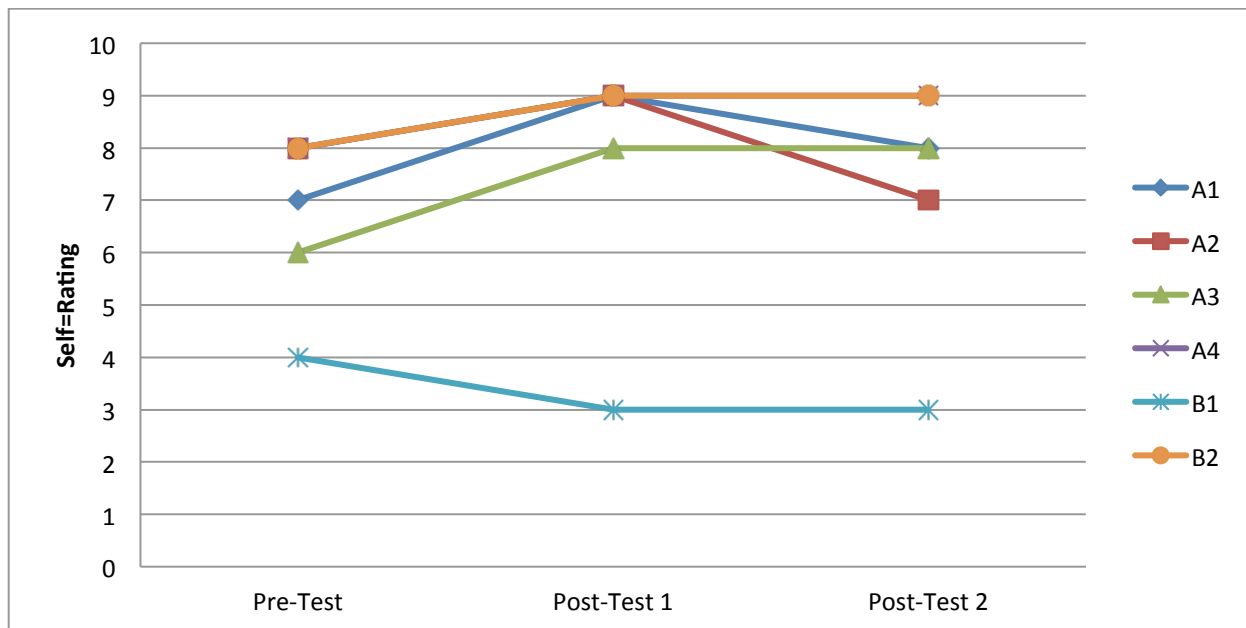


Figure A.3: Self-rated Spanish reading abilities. This figure displays self-rated Spanish reading abilities collected from experimental group (A1-4) and control group (B1- 2) participants and displayed In Table A.2: *Self-reported current levels of linguistic proficiency.*

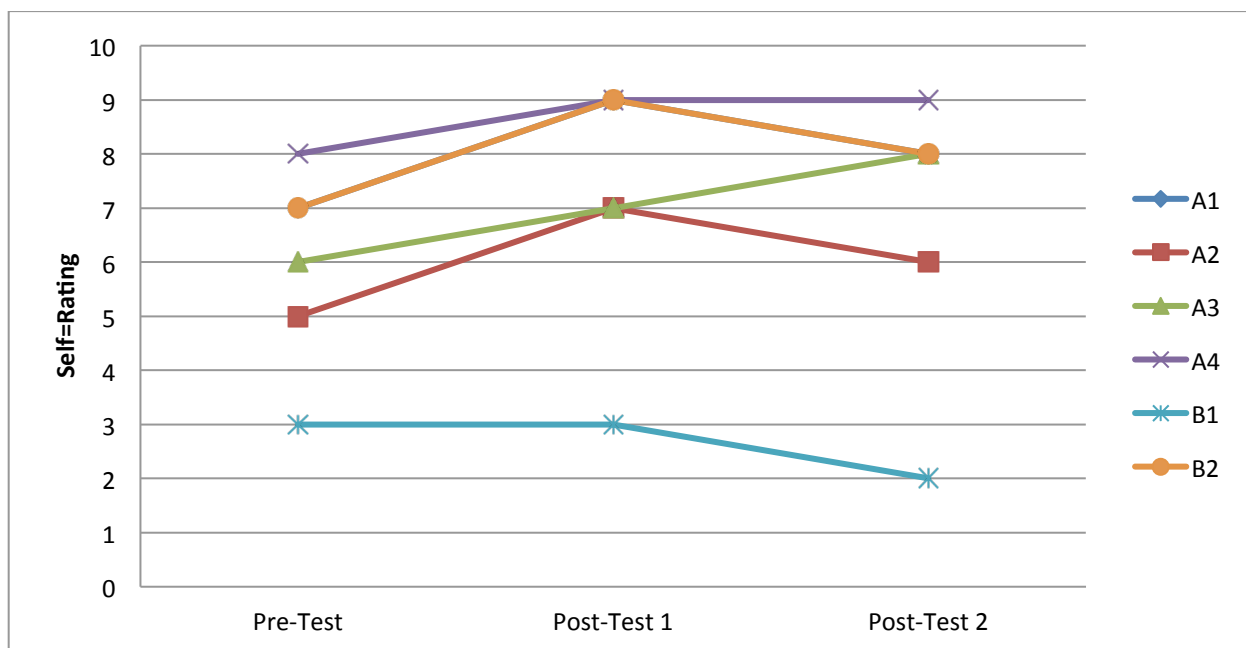


Figure A.4: Self-rated Spanish writing abilities. This figure displays self-rated Spanish writing abilities collected from experimental group (A1-4) and control group (B1- 2) participants and displayed In Table A.2: *Self-reported current levels of linguistic proficiency*

APPENDIX B

Table B.1: Participant A1 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	9	7	12	32	34	50	193	222	223
Total Completed Words	80	112	91	204	361	357	1227	1284	1322
Elapsed Time (min)	1	1	1	2.33	3.42	3.68	15	15	15
MLU Words	8.22	15.4	7.08	6.16	10.2	6.86	5.74	5.26	5.64
MLU Morphemes	8.22	15.6	7.17	6.25	10.2	7.12	6.18	5.57	6.03
# Different Words	40	56	43	80	105	128	313	322	343
# Total Words	74	108	95	197	346	343	1028	1100	1174
% Different Words/Total Words	54	52	45	41	30	37	30	30	29
Utterances w/ Mazes	3	3	4	5	9	10	56	39	52
# Mazes	4	3	5	5	12	11	81	61	68
# Maze Words*	7	4	8	8	17	17	124	95	99
% Maze Words/Total Completed Words*	9	4	9	4	5	5	11	8	8
Average Mazes/Utter.	0.44	0.43	0.42	0.16	0.35	0.22	0.49	0.31	0.32
Average Words/Maze	1.75	1.33	1.6	1.6	1.42	1.55	1.47	1.59	1.43
Abandoned Utterances	0	0	0	0	0	0	9	4	11
WPM	80	112	91	87	106	97	82	86	88
# Bound Morphemes	0	1	1	3	2	12	81	70	81
# Bound Clitics	0	0	2	0	0	4	4	4	9
Filler Words*	0	0	1	0	0	2	56	26	38
% Filler Words/Total Completed Words*	0	0	1	0	0	1	5	2	3
Incomplete Words	1	0	2	1	2	2	14	18	13
# Code Switched Words	0	0	0	0	0	0	21	12	7
EW:Total*	2	2	1	2	6	5	4	3	8
EW:not corrected	2	2	1	2	6	4	3	3	8
EW:corrected	0	0	0	0	0	1	1	0	0
# Different EW	1	1	1	1	2	3	4	3	7

PT= pre-test, P1= post-test 1, P2= post-test 2

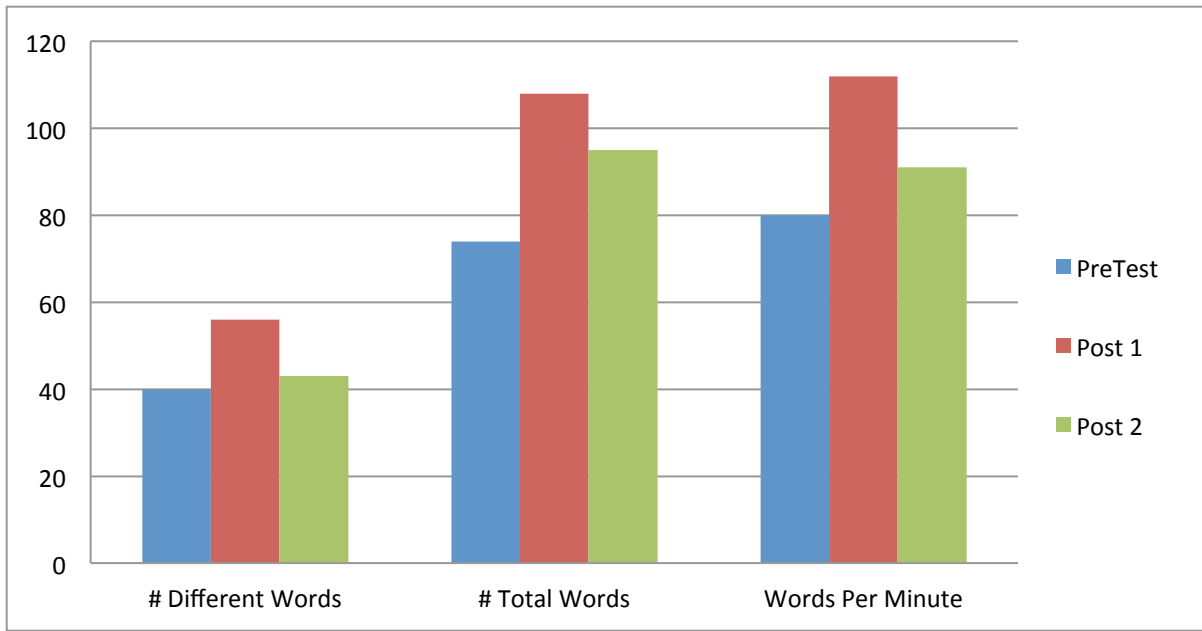


Figure B.1: A1 one-minute narrative sample data. This figure displays participant A1's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.1: Participant A1 SALT transcription raw data.

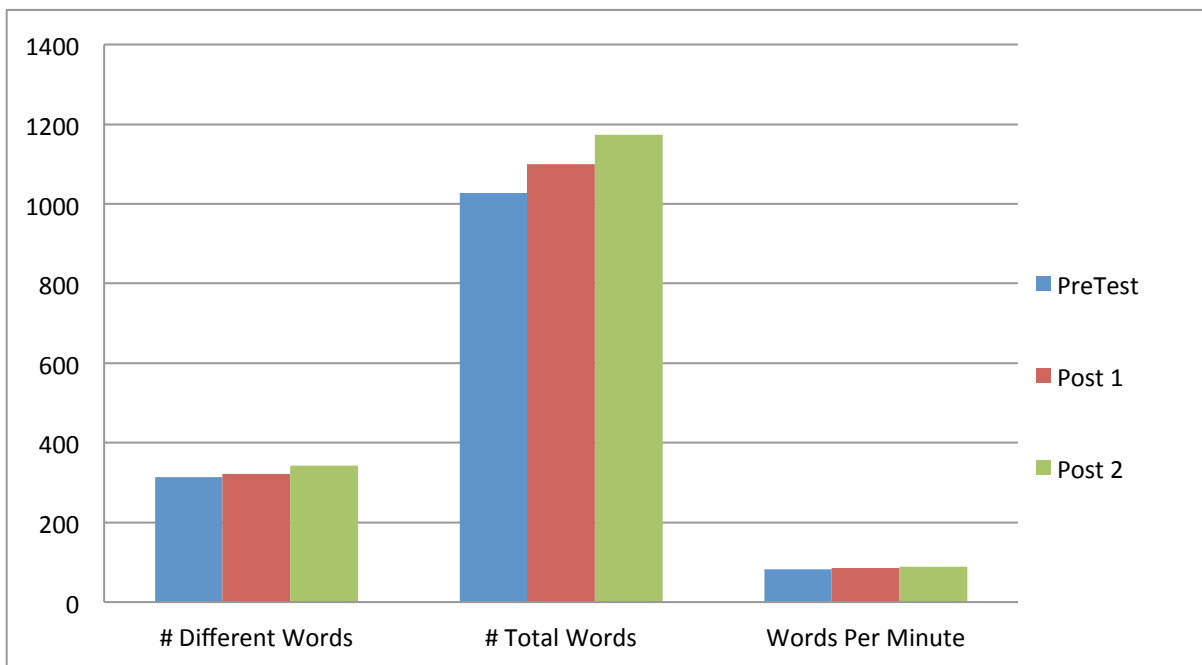


Figure B.2: A1 15-minute interview sample data. This figure displays participant A1's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.1: Participant A1 SALT transcription raw data.

Table B.2: Participant A2 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	11	15	6	47	75	55	177	168	228
Total Completed Words	70	108	95	331	548	519	1156	1322	1429
Elapsed Time (min)	1	1	1	4.42	5.82	5.57	15	15	15
MLU Words	5.5	7.25	13.5	5.59	6.64	8.13	4.96	6.66	5.32
MLU Morphemes	6	7.42	15	5.85	6.85	8.58	5.15	7.05	5.52
# Different Words	39	48	52	108	164	172	257	321	325
# Total Words	55	87	81	257	478	431	724	1032	1101
% Different Words/Total Words	71	55	64	42	34	40	35	31	30
Utterances w/ Mazes	3	5	5	20	24	26	64	69	84
# Mazes	11	8	13	36	37	43	149	143	151
# Maze Words*	14	12	16	78	69	79	256	212	277
% Maze Words/Total Completed Words*	20	12	16	23	13	15	26	17	20
Average Mazes/Utter.	1	0.64	2.17	0.77	0.51	0.81	1.08	0.95	0.71
Average Words/Maze	1.27	1.56	1.23	2.17	1.86	1.84	1.67	1.49	1.87
Abandoned Utterances	1	2	0	1	2	2	14	9	9
WPM	70	108	95	75	94	93	77	88	95
# Bound Morphemes	5	2	9	12	14	24	34	71	42
# Bound Clitics	0	0	0	1	0	1	1	0	0
Filler Words*	5	4	6	22	21	26	149	103	124
% Filler Words/Total Completed Words*	7	4	6	7	4	6	13	8	9
Incomplete Words	0	0	2	4	7	5	17	18	23
# Code Switched Words	0	0	0	3	3	0	27	13	32
EW:Total*	0	1	0	2	3	3	4	8	9
EW:not corrected	0	1	0	2	2	3	3	8	8
EW:corrected	0	0	0	0	1	0	1	0	1
# Different EW	0	1	0	2	3	2	4	7	7

PT= pre-test, P1= post-test 1, P2= post-test 2

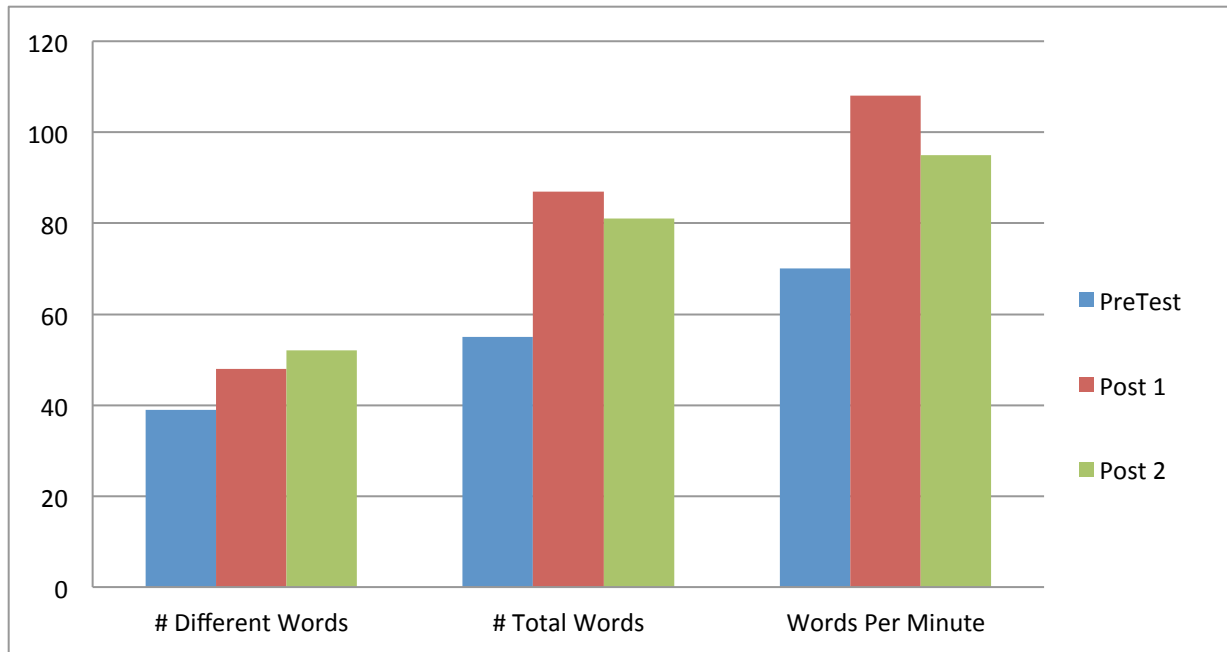


Figure B.3: A2 one-minute narrative sample data. This figure displays participant A2's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.2: Participant A2 SALT transcription raw data.

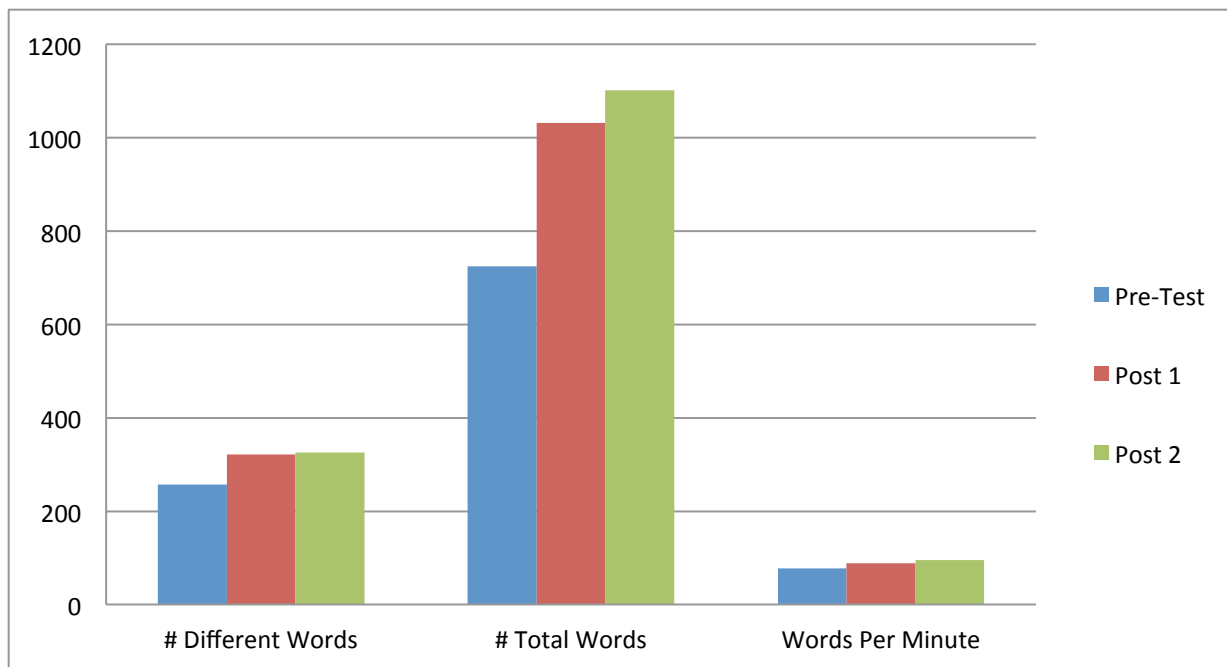


Figure B.4: A2 15-minute interview sample data. This figure displays participant A2's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.2: Participant A2 SALT transcription raw data.

Table B.3: Participant A3 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	11	10	9	27	37	25	214	175	186
Total Completed Words	77	78	72	203	282	162	840	1085	1012
Elapsed Time (min)	1	1	1	2.7	3.33	2.35	15	15	15
MLU Words	6.18	7.8	7.67	6.85	7.43	6.28	3.47	5.04	4.3
MLU Morphemes	6.18	7.8	7.67	7	7.46	6.48	3.61	5.31	4.51
# Different Words	34	37	38	77	93	73	238	287	265
# Total Words	68	78	69	185	275	157	711	827	749
% Different Words/Total Words	50	47	55	42	34	46	33	35	35
Utterances w/ Mazes	6	1	2	13	7	4	61	85	85
# Mazes	8	1	2	15	8	4	95	179	173
# Maze Words*	10	1	3	20	9	6	115	237	221
% Maze Words/Total Completed Words*	13	1	4	10	3	4	14	22	23
Average Mazes/Utter.	0.73	0.1	0.22	0.56	0.22	0.16	0.49	1.08	1
Average Words/Maze	1.25	1	1.5	1.33	1.13	1.5	1.2	1.31	1.31
Abandoned Utterances	0	0	0	0	0	0	2	2	5
WPM	77	78	72	75	85	69	56	72	67
# Bound Morphemes	0	0	0	4	1	4	30	45	35
# Bound Clitics	0	1	1	0	2	1	3	2	4
Filler Words*	6	0	2	9	6	3	97	158	177
% Filler Words/Total Completed Words*	8	0	2	4	2	2	12	15	17
Incomplete Words	1	1	0	2	2	1	3	10	3
# Code Switched Words	0	0	0	0	0	0	5	4	7
EW:Total*	0	0	0	1	0	2	1	2	2
EW:not corrected	0	0	0	1	0	1	0	3	0
EW:corrected	0	0	0	0	0	1	1	0	2
# Different EW	0	0	0	1	0	2	1	3	2

PT= pre-test, P1= post-test 1, P2= post-test 2

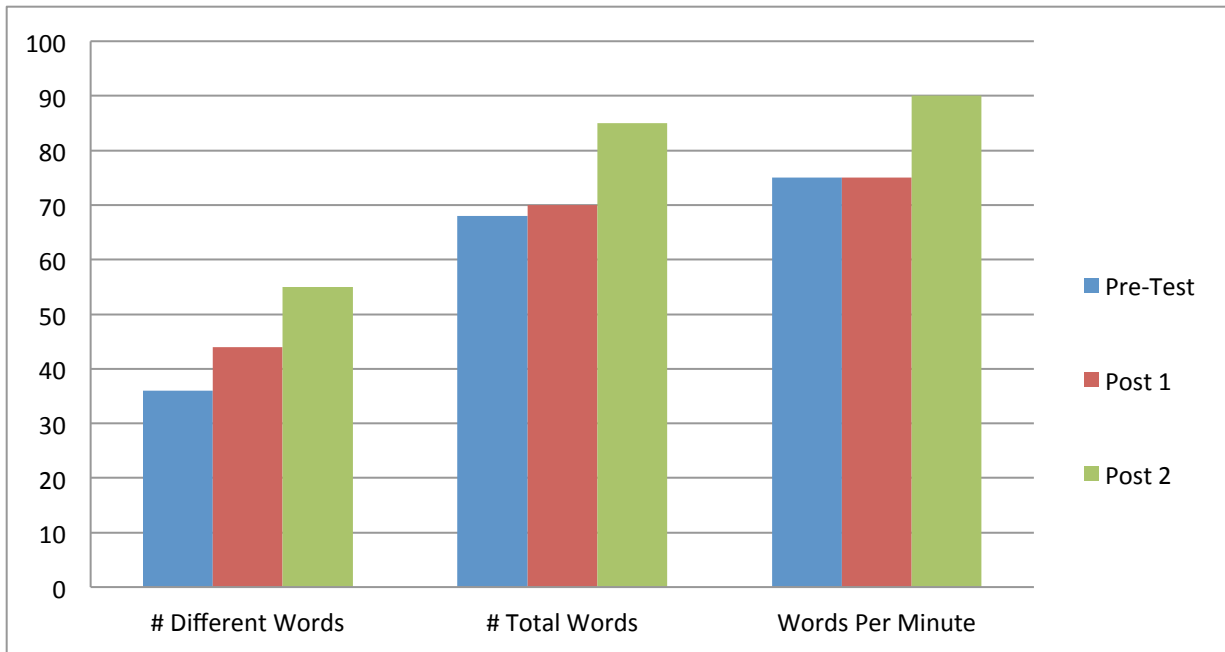


Figure B.5: A3 one-minute narrative sample data. This figure displays participant A3's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.3: *Participant A3 SALT transcription raw data*.

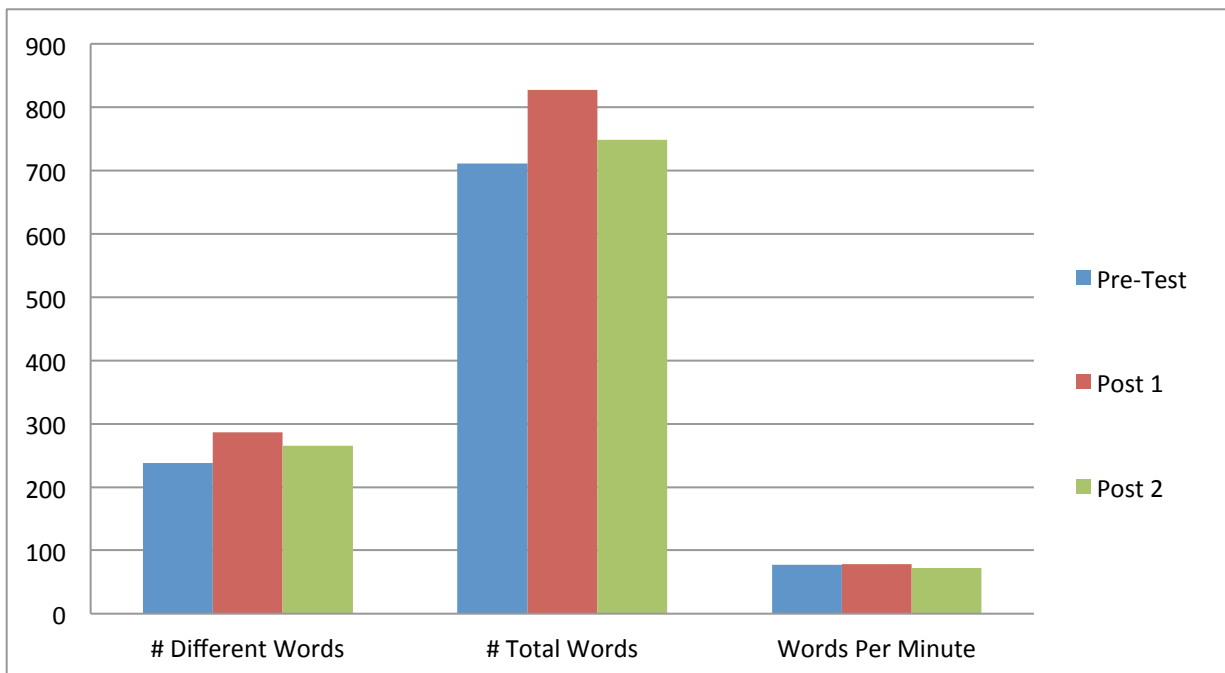


Figure B.6: A3 15-minute interview sample data. This figure displays participant A3's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.3: *Participant A3 SALT transcription raw data*.

Table B.4: Participant A4 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	8	5	8	39	51	56	210	164	230
Total Completed Words	75	75	90	280	466	488	1048	1298	1265
Elapsed Time (min)	1	1	1	3.7	6.05	5.5	15	15	15
MLU Words	8.5	14	10.7	6.62	7.9	8.07	3.94	6.32	4.5
MLU Morphemes	8.63	14	11.1	6.9	8.1	8.4	4.18	6.95	4.83
# Different Words	36	44	55	101	156	171	256	278	312
# Total Words	68	70	85	258	403	444	757	973	946
% Different Words/Total Words	53	63	65	39	39	39	34	29	33
Utterances w/ Mazes	3	3	5	13	24	22	66	83	98
# Mazes	3	4	6	15	34	24	154	192	191
# Maze Words*	7	5	7	26	66	49	236	264	250
% Maze Words/Total Completed Words*	9	7	8	9	14	10	24	21	21
Average Mazes/Utter.	0.38	0.8	0.75	0.38	0.67	0.44	0.82	1.26	0.92
Average Words/Maze	2.33	1.25	1.17	1.73	1.94	2.04	1.54	1.38	1.28
Abandoned Utterances	0	0	0	0	0	0	6	7	8
WPM	75	75	90	76	77	89	70	87	84
# Bound Morphemes	1	1	3	10	10	18	47	99	72
# Bound Clitics	0	0	1	0	1	3	2	2	5
Filler Words*	1	4	1	2	23	11	156	187	164
% Filler Words/Total Completed Words*	1	5	1	1	5	2	15	14	13
Incomplete Words	0	0	1	3	3	6	10	7	16
# Code Switched Words	0	0	0	0	0	1	4	4	7
EW:Total*	0	1	0	2	1	1	1	1	2
EW:not corrected	0	1	0	2	1	1	0	0	2
EW:corrected	0	0	0	0	0	0	1	1	0
# Different EW	0	1	0	2	1	1	1	1	2

PT= pre-test, P1= post-test 1, P2= post-test 2

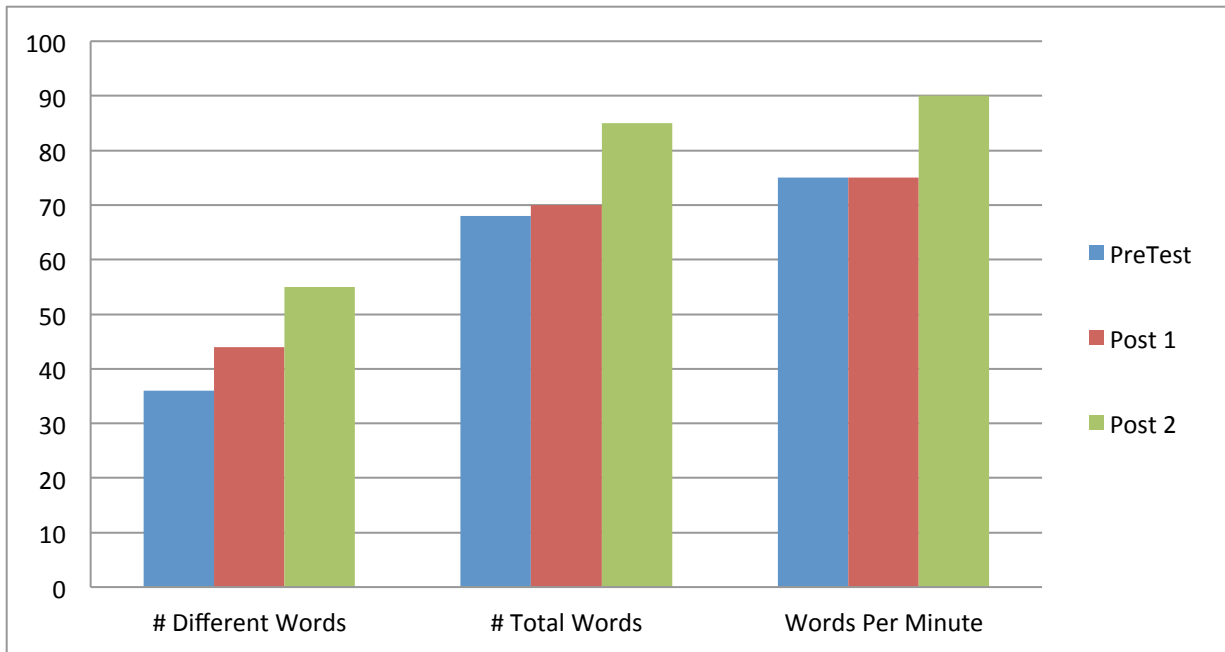


Figure B.7: A4 one-minute narrative sample data. This figure displays participant A4's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.4: Participant A4 SALT transcription raw data.

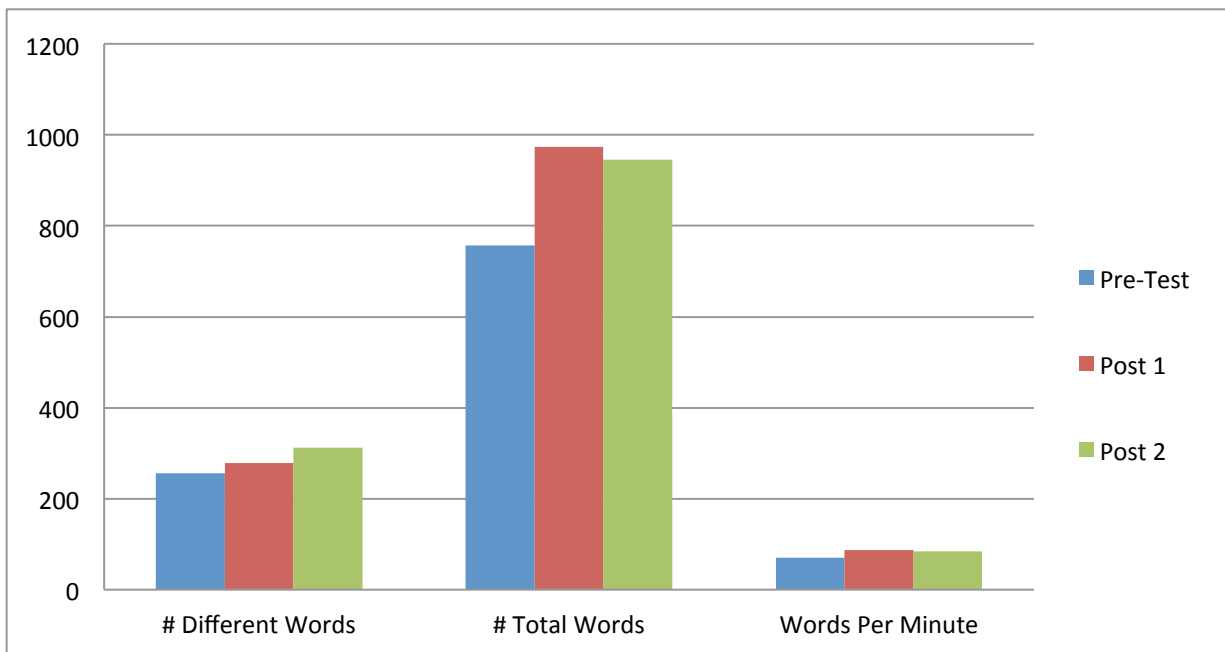


Figure B.8: A4 15-minute interview sample data. This figure displays participant A4's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.4: Participant A4 SALT transcription raw data.

Table B.5: Participant B1 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	9	8	8	20	13	19	204	236	214
Total Completed Words	52	63	63	124	102	129	725	845	750
Elapsed Time (min)	1	1	1	2.28	1.6	2	15	15	15
MLU Words	5.56	7.83	8.29	5.84	7.64	6.94	3.14	3.22	3.23
MLU Morphemes	5.56	8	8.57	5.84	7.82	7.19	3.23	3.33	3.32
# Different Words	33	25	33	55	36	46	241	289	274
# Total Words	50	47	58	111	84	111	616	732	652
% Different Words/Total Words	66	53	57	50	43	41	39	39	42
Utterances w/ Mazes	1	2	2	3	3	6	61	46	44
# Mazes	2	2	3	5	4	8	81	57	56
# Maze Words*	3	2	3	7	4	10	98	78	69
% Maze Words/Total Completed Words*	6	4	5	6	5	8	14	10	10
Average Mazes/Utter.	0.22	0.75	0.5	0.25	0.62	0.47	0.44	0.27	0.3
Average Words/Maze	1.5	1	1.5	1.4	1	1.44	1.2	1.34	1.22
Abandoned Utterances	0	2	1	1	2	3	1	2	3
WPM	52	63	63	54	64	65	48	56	50
# Bound Morphemes	0	0	2	0	2	4	19	26	20
# Bound Clitics	2	0	0	3	0	0	0	0	0
Filler Words*	1	1	2	2	5	5	81	57	51
% Filler Words/Total Completed Words*	2	2	3	2	5	4	11	7	7
Incomplete Words	1	1	3	1	1	3	8	7	8
# Code Switched Words	4	6	0	14	6	0	113	239	206
EW:Total*	1	0	0	2	1	0	1	1	1
EW:not corrected	0	0	0	0	0	0	1	1	1
EW:corrected	1	0	0	2	1	0	0	0	0
# Different EW	1	0	0	2	1	0	1	1	1

PT= pre-test, P1= post-test 1, P2= post-test 2

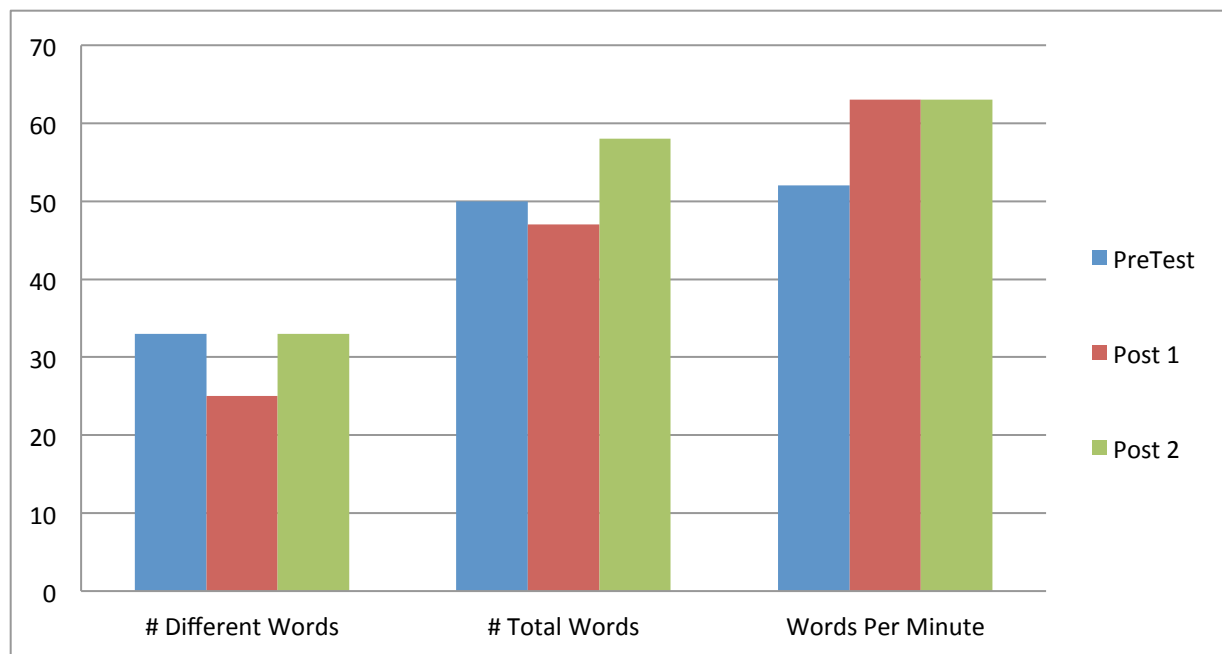


Figure B.9: B1 one-minute narrative sample data. This figure displays participant B1's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.5: Participant B1 SALT transcription raw data.

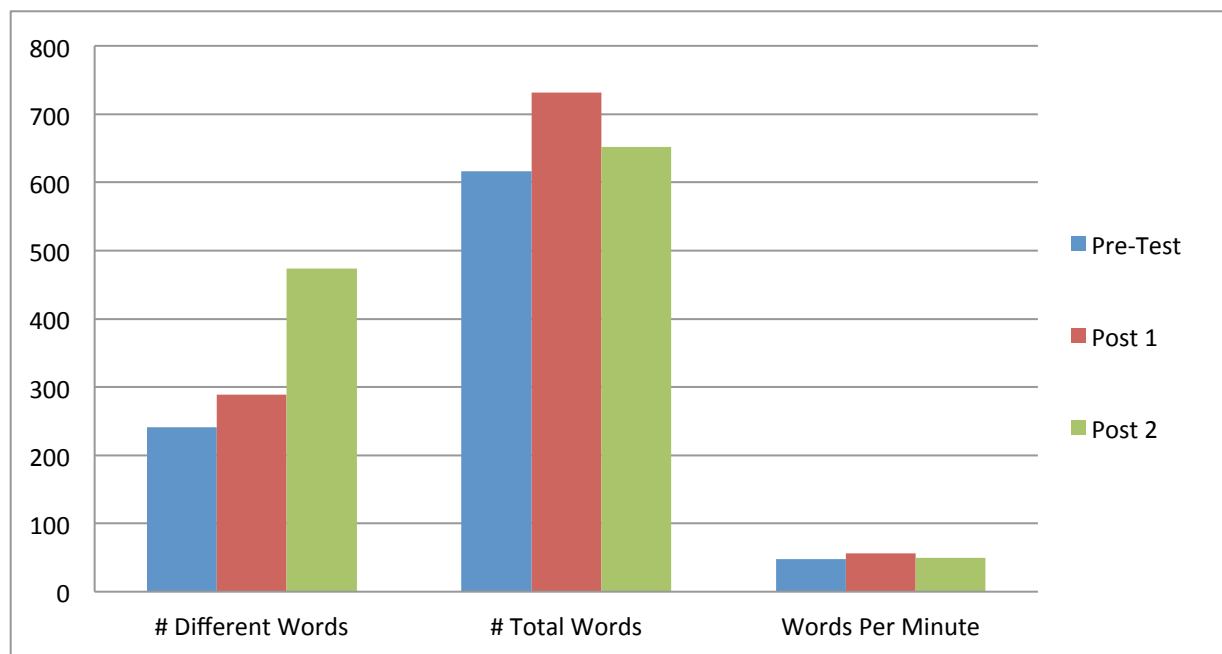


Figure B.10: B1 15-minute interview sample data. This figure displays participant B1's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.5: Participant B1 SALT transcription raw data.

Table B.6: Participant B2 SALT transcription raw data

Sample Source	1 minute Narrative Sample			Narrative			Interview		
	PT	P1	P2	PT	P1	P2	PT	P1	P2
Total Utterances	11	9	9	21	27	23	167	178	177
Total Completed Words	68	72	69	170	190	189	1105	1118	997
Elapsed Time (min)	1	1	1	2.42	2.67	2.72	15	15	15
MLU Words	6.18	8	7.22	7.8	7	8	5.94	5.71	4.94
MLU Morphemes	6.18	8	7.44	7	7.15	8.22	6.26	6.04	5.24
# Different Words	40	30	37	70	83	84	299	295	253
# Total Words	68	72	65	156	189	184	933	954	830
% Different Words/Total Words	59	42	57	45	44	46	32	31	30
Utterances w/ Mazes	0	0	3	2	1	4	58	52	54
# Mazes	0	0	3	2	1	4	94	78	79
# Maze Words*	0	0	5	3	1	6	122	115	96
% Maze Words/Total Completed Words*	0	0	7	2	1	3	12	11	10
Average Mazes/Utter.	0	0	0.33	0.14	0.04	0.17	0.62	0.49	0.5
Average Words/Maze	0	0	1.67	2.33	1	1.5	1.29	1.47	1.3
Abandoned Utterances	0	0	0	1	0	0	3	4	6
WPM	68	72	69	70	71	70	74	75	67
# Bound Morphemes	0	0	2	2	3	4	52	58	53
# Bound Clitics	0	0	0	0	1	0	8	2	4
Filler Words*	0	0	1	2	1	2	74	65	31
% Filler Words/Total Completed Words*	0	0	1	1	1	1	7	6	3
Incomplete Words	0	0	1	0	0	1	15	9	8
# Code Switched Words	2	0	0	5	0	0	1	5	5
EW:Total*	2	0	0	0	0	0	1	3	2
EW:not corrected	2	0	0	0	0	0	1	3	2
EW:corrected	0	0	0	0	0	0	0	0	0
# Different EW	1	0	0	0	0	0	1	3	2

PT= pre-test, P1= post-test 1, P2= post-test 2

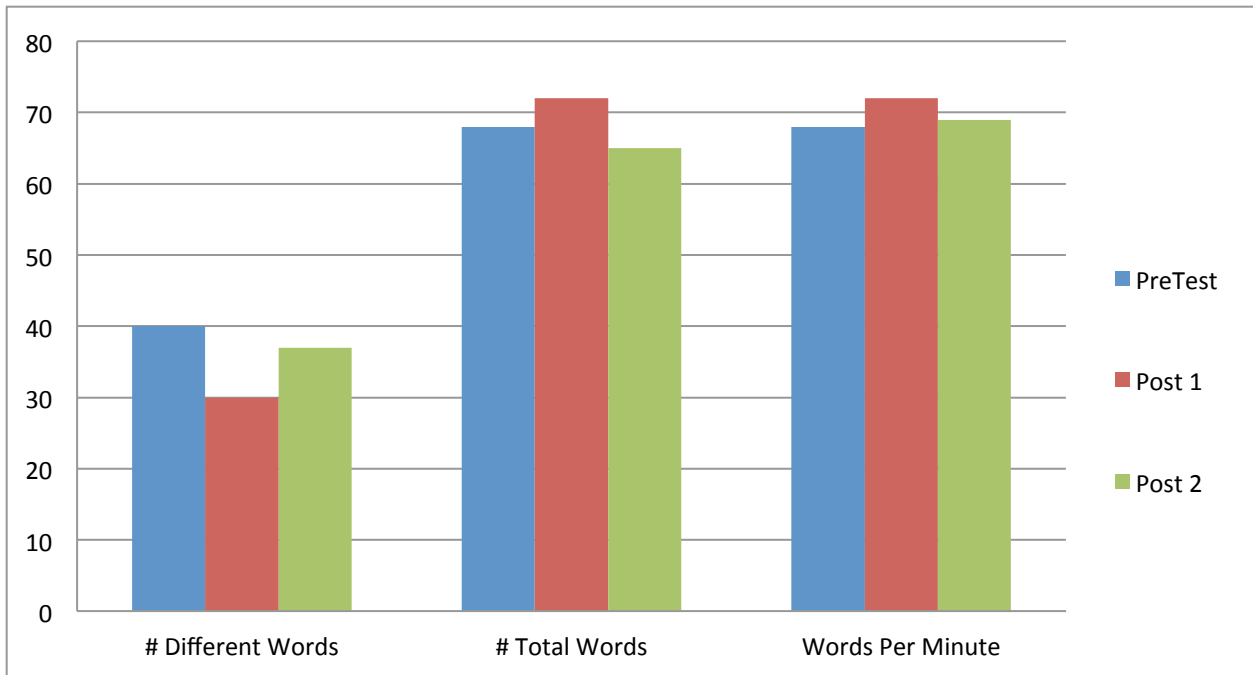


Figure B.11: B2 one-minute narrative sample data. This figure displays participant B2's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.6: *Participant B2 SALT transcription raw data*.

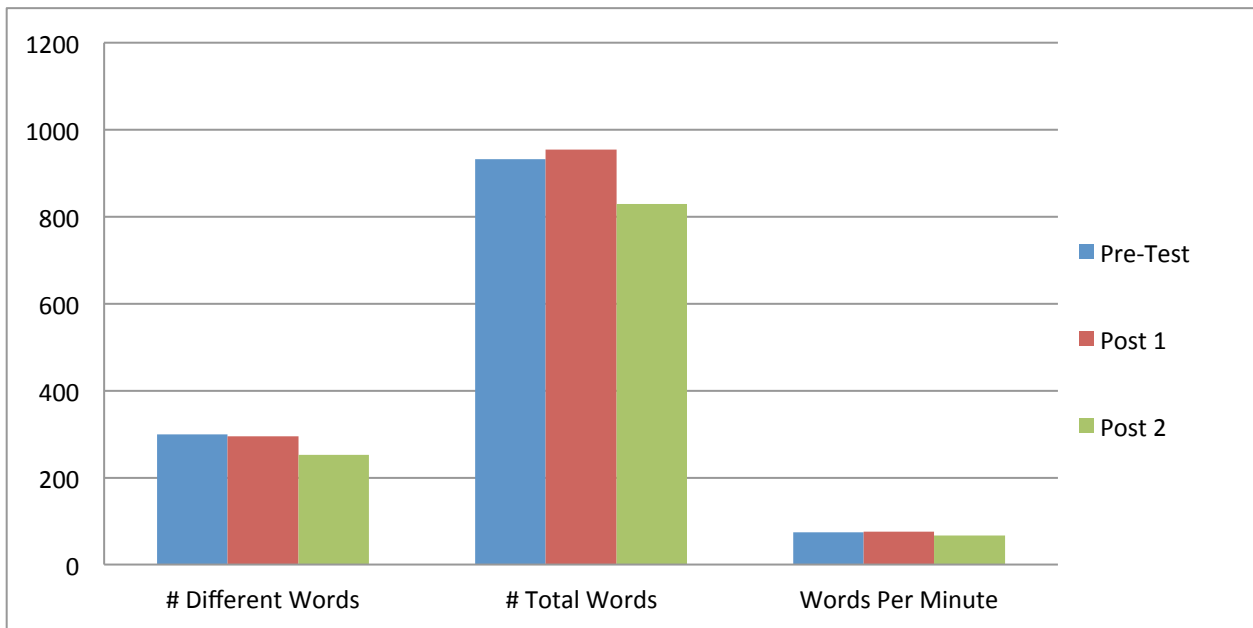


Figure B.12: B2 15-minute interview sample data. This figure displays participant B2's fluency measures raw data as collected from the one-minute narrative sample and displayed in Table B.6: *Participant B2 SALT transcription raw data*.

APPENDIX C

Table C: Self-reported level Interest and hesitancy for working with bilingual populations

Participant	Pre-test		Post-Test 1		Post-Test 2	
	Interest	Hesitancy	Interest	Hesitancy	Interest	Hesitancy
A1	6	3	7	1	7	2
Comments	I am very interested in working with bilingual populations, but am slightly hesitant as I want to offer the highest quality services possible and worry that my weaknesses in Spanish will result in miscommunications that will compromise the quality of service provided.		I have always been passionate about using Spanish in my practice, but was feeling discouraged and didn't feel my language skills were sufficient. I now feel confident in my ability to continue to develop my Spanish language skills to be a competent provider for this population. Mexico also reminded me how much I love the language.		I worry about my ability to identify phonological/semantic paraphasias in Spanish-speaking patients with aphasia.	
A2	3	6	3	5	6	5
Comments	I would like to work with elements not directly related to language (voice). I would like to live in a city and understand that Spanish will be crucial for my future hiring chances.		I do not have an interest in targeting literacy and language development and don't believe my model of Spanish would be sufficient. I am, however, setting a goal to establish proficiency in providing services to Spanish-speaking patients. My hesitancy lies in my still-limited exposure to everyday, rapid Spanish and my limited range of vocabulary in understanding what patients share with me.		I want to be able to use my Spanish in my professional work. I am hesitant that I am competent enough in the language to serve patients fully.	
A3	3	6	6	3	6	2
Comments	I would like to be able to work with bilingual Spanish-English populations, however it is not my primary career goal. I have never spent any time speaking Spanish other than during classes and a little when I worked in customer service, so I feel my skills are "untested".		I remembered how much I love speaking Spanish and gained confidence in using Spanish with native speakers. I would love to work with this population at least some of the time, but feel I have some learning to do first.		I know that the expectation on the part of our clients will not be perfect and fluent language skills, but that they can be adequately served by working with someone who has decent language skills, and that my occasional subject-verb agreement errors will not interfere significantly.	
A4	7	4	7	2	7	2
Comments	I think there is a need for bilingual services and would like to fill that need. I am nervous about getting		I am certain that I want to incorporate the use of my Spanish language skills into the profession because I know there		I am interested in working with bilingual populations as a focus in my career and feel more comfortable	

	my language skills up to a place where I can provide effective services in Spanish and for other languages I don't speak, but I also realize I can already help more than someone with less experience in multi linguistic practice.	is a huge need and feel that I can make a difference by utilizing the skills I have. I am confident that my skills are at a level that I can begin to help families and that I am already at a point where we can communicate about individual needs and family goals effectively. By continuing to work with, improve, and maintain my Spanish I will gain confidence in my ability to make a solid difference in the bilingual Spanish-English community.	doing so because my Spanish skills continue to improve as I use the language. I think that I am definitely at a level where I could effectively serve clients and their families in Spanish.			
B1	3	5	3	5	3	5
Comments	I would really need to improve my Spanish skills before I would be able to work as an SLP in Spanish.	I would need to improve my Spanish skills a lot.			I'd need to improve my Spanish a lot.	
B2	7	2	7	2	7	2
Comments	I love to use Spanish and I am passionate about access to culturally and linguistically appropriate assessment and services. I am slightly hesitant because I am not a native speaker and I am not culturally from this population, so I know there is some barrier to be navigated in providing services appropriately.	I am sensitive to the fact that I am not a native speaker and want to provide appropriate services.			I know that receiving services from someone with my level of Spanish will be superior to receiving them from someone without Spanish knowledge and using an interpreter. Even if it isn't perfect, it will still be beneficial!	

Interest: 1= no Interest, 2= very little interest, 3= somewhat interested, 4= indifferent, 5= somewhat interested, 6= very interested, 7= extremely interested

Hesitancy: 7= extremely hesitant, 6= very hesitant, 5= somewhat hesitant, 4= indifferent, 3= somewhat not hesitant, 2= minimal hesitancy, 1= no hesitancy

A1-4= Experimental Group, B1-2= Control Group

Note: Data collected from pre-test, post-test 1, and post-test 2 self-surveys.

APPENDIX D

Table D.1: *Perceived level of Spanish language skill maintenance from post-test 1 to post-test 2*

Participant	Perceived Level of Maintenance	
A1	S- Slight Decrease	OC- Decrease
	R- Slight Decrease	W- Slight Decrease
A2	S – Decrease	OC- Slight Decrease
	R- Slight Decrease	W- Slight Decrease
A3	S – Slight Increase	OC- Slight Increase
	R- Slight Increase	W- Slight Increase
A4	S- Slight Increase	OC-Slight Increase
	R- Remained Same	W- Remained Same
B1	S- Remained Same	OC- Remained Same
	R- Remained Sam	W- Remained Same
B2	S- Slight Decrease	OC- Remained Same
	R- Remained Same	W- Remained Same

S=speaking OC=oral comprehension R=reading W= writing

Note: Data collected during post-test 2 self-surveys.

Table D.2: *Recommendations to enhance a future bilingual personnel training program*

Participant	Participant Recommendations
A1	<ul style="list-style-type: none"> -SLHS content/courses taught in Spanish -Spanish Language course focusing on content related to the field of Speech-Language Pathology -Spanish Language course per semester (even if just 1 credit) -More Spanish/bilingual clinical assignments -Bilingual "certification" program with combined coursework/language support/clinical placements -OTHER: "I recommend all of them, ESPECIALLY the offering of a class taught in Spanish at least once per semester."
A2	<ul style="list-style-type: none"> -SLHS content/courses taught in Spanish -Spanish Language course focusing on content related to the field of Speech-Language Pathology - Spanish Language course per semester (even if just 1 credit) -More Spanish/bilingual clinical assignments -Bilingual "certification" program with combined coursework/language support/clinical placements
A3	<ul style="list-style-type: none"> -SLHS content/courses taught in Spanish -Spanish Language course focusing on content related to the field of Speech-Language Pathology -Spanish Language course per semester (even if just 1 credit) -More Spanish/bilingual clinical assignments -Bilingual "certification" program with combined coursework/language support/clinical placements

A4	<ul style="list-style-type: none"> -SLHS content/courses taught in Spanish -Spanish Language course focusing on content related to the field of Speech-Language Pathology -Bilingual "certification" program with combined coursework/language support/clinical placements -OTHER: "I think that taking a Spanish Language course outside of the program would be too difficult since most that I took in college were incredibly intense and focused on terms/vocab related to other areas such as literature, art, theater, etc. I think that if grad students in the SLHS program were recommended to take additional language courses for their Spanish skills, it would be best to have those courses tailored to their degree to maximize the application to our field and the functionality of the experience for our role as SLP's. I feel that with the La Paz trip as a recurrent option for students along with the multiple bilingual clinical assignment options, a bilingual certification program could be good. I think that recognition for a strong focus in bilingualism could help set people ahead. On the other hand, I think that by including coursework and bilingual experiences in your coursework and written statements, a person's expertise and passion for Spanish can come across just as well. The bilingual certification would therefore be another helpful "sticker" as it were to add to someone's resume to quickly set them apart, but it I don't know that it would necessarily give anyone an advantage in terms of the knowledge they could acquire, since I feel that I have gained the same sort of experience as people in a bilingual certification program might but of my own accord."
B1	<ul style="list-style-type: none"> -Spanish Language course focusing on content related to the field of Speech-Language Pathology -Spanish Language course per semester (even if just 1 credit) -Bilingual "certification" program with combined coursework/language support/clinical placements
B2	<ul style="list-style-type: none"> -SLHS content/courses taught in Spanish -Spanish Language course focusing on content related to the field of Speech-Language Pathology -More Spanish/bilingual clinical assignments -Bilingual "certification" program with combined coursework/language support/clinical placements -OTHER: "Course focused on SLP-related content specific to language differences (phonology, morphology, syntax) that would be expected in bilingual speakers. What are the developmentally appropriate errors and ages in Spanish? What would be common appropriate transfer errors to English?"

A1-4= Experimental Group, B1-2= Control Group

Note: Displayed data was collected from participant post-test 2 surveys.