Issues in Service Delivery for Bilingual Spanish-English Children: A Summary and Assessment of Speech-Language Pathologist Training and Implementation of Recommended Practices

An Honors Thesis (HONR 499)

by

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Abstract

Purpose: The present study included a review of current research literature regarding topics in speech-language pathology service delivery for bilingual Spanish-English children as well as an assessment of the amount and scope of pre-service training (education) that professional speech language pathologists (SLPs) received regarding bilingual/multicultural topics and an assessment of how highly various recommended practices were valued, compared with how frequently they were implemented by professional SLPs.
Method: A survey was distributed online to SLPs who are members of ISHA and ASHA SIG 01. 82 professionals completed the survey. Results for pre-service training were compared with results from Hammer et al.'s (2004) study. Results for recommended practices were compared within the present study.
Results: SLPs in the present study reported similar amounts of pre-service training to the participants in Hammer et al.'s study. A higher number of SLPs in the present study indicated receiving one to several courses. SLPs in the present study also reported that their coursework covered a scope of topics with greater frequency. Ratings for perceived value of recommended practices were consistently higher than ratings of actual implementation, especially for practices that would require proficiency in the Spanish language. A small sample of SLPs who listed themselves as bilingual service providers (N = 8) indicated a greater amount and scope of pre-service training, as well as lower discrepancies between perceived value and implementation of recommended practices.
Conclusions: Pre-service training in bilingual/multicultural topics appears to be generally increasing, but amounts of training similar to Hammer et al.'s study were reported. Practices that require functional usage of Spanish are supported in the literature, but appear to provide a particular challenge for SLPs who are monolingual service providers. Continuing education and/or collaboration with bilingual paraprofessionals are possible solutions to overcoming this discrepancy.

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1. Introduction

According to the United States Department of Commerce, Spanish is spoken in an estimated 37.6 million households, by far the second-most common language spoken in the US after English (United States Department of Commerce, 2013). The United States Department of Education reported in 2013 that nearly 10 percent of students enrolled in US public schools are

English language-learners (ELLs), that is, they learned a language other than English before learning English (Migration Policy Institute [MPI], 2015a). The vast majority of these children, 71%, learned Spanish as their primary language (PL) (MPI, 2015b). The increasing linguistic diversity in schools is relevant for the field of speech-language pathology, particularly for speech-language pathologists (SLPs) who work in the schools. Bilinguals tend to be overrepresented in special education services at the elementary school level, and static, traditional measures tend to over-identify Spanish-English bilingual children with primary language impairment (PLI), that is, deficient language skills without the presence of any accompanying cognitive or developmental disabilities (Kapantzoglou, Restrepo, & Thompson, 2012). The Equal Opportunities Act of 1974, the Individuals with Disabilities Education Act Part B of 2006, and the No Child Left Behind Act of 2001 all stipulate that English proficiency for students across the nation is mandatory (American Speech-Language Hearing Association [ASHA], 2013). These factors create a demand for bilingual SLPs or, at the very least, SLPs who have some base knowledge of bilingualism in general and Spanish in particular.

ASHA has attempted to respond to this need by advocating for pre-service training and continuing education on bilingual and multicultural issues, releasing position statements and other documents on these issues, organizing a special interest group devoted to cultural and linguistic diversity, and providing guidelines for bilingual service providers (ASHA, 2013). Researchers have also conducted a considerable amount of research in this area of speech-language pathology, especially in more recent years. However, there is still a great demand for research on accurate, appropriate diagnosis and efficacy of intervention for Spanish-English bilingual children. Restrepo (1998) reported that there is no current gold standard for diagnosis of PLI in bilingual children, and Thordardottir (2010) affirmed that, although several studies

have yielded promising results that suggest the efficacy of certain intervention practices with bilingual children, more studies that replicate these findings are required before a formal list of best practices with this population can be defined. What follows is a review of the current literature related to speech-language service delivery for Spanish-English bilingual children.

2. Literature Review

2.1 ASHA Policies and Recommendations for Bilingual Children

In 2013, ASHA released a document on its practice portal that presented ASHA's policies, guidelines, and recommendations for bilingual service delivery. ASHA does not have a formal certification process for bilingual SLPs, nor does it accredit or review bilingual graduate programs, but it demands that SLPs that list themselves as bilingual service providers have "native or near-native proficiency in lexicon, semantics, phonology, morphology/syntax, and pragmatics" in their second language. ASHA also asks that bilingual SLPs have a skill set that includes 1) knowledge of the process of normal speech and language acquisition, oral and written, for both of the client's languages, 2) ability to use formal and informal assessment measures that differentiate language disorder and language difference, and 3) ability to provide intervention for communication disorders in the language or mode of communication most appropriate for the needs of the individual (ASHA, 2013). At year-end 2015, 6% of its members listed themselves as bilingual service providers (ASHA, 2016). The practice portal gives details about the differences between simultaneous bilinguals—those who learn two languages at the same time, beginning prior to the age of three—and sequential bilinguals—those whose second language (L2) is introduced after some amount of proficiency has been established in the primary language (L1), usually after the age of three (ASHA, 2013). It also lists several linguistic

phenomena that commonly occur during second language acquisition (Table 1), and it provides an extensive list of recommended assessment procedures and treatment considerations (Table 2).

Table 1. Common linguistic phenomena during second language acquisition

Interference/Transfer - an error is made in L2 due to direct influence of an L1 structure.
Silent Period - emphasis on listening and comprehension over expression in early stages of second language acquisition.
Codeswitching - normal phenomenon in which speaker changes languages over phrases and sentences.
Language Loss/Attrition - loss of skills and fluency in L1 if L1 is not reinforced and maintained.
Accent, Dialect, Phonetic Patterns - order of language affects phoneme acquisition in other language, and accent may affect speech sound substitutions in each language.
Source: (ASHA, 2013)

Table 2. Practices Recommended for Bilingual Service Delivery

Early Intervening Services
Dynamic Assessment (DA)
Response to Intervention (RTI)
Assessment Procedures
Obtaining case history information
Parent questionnaires
Oral/peripheral examination
Criterion-referenced tests to assess client strengths, weaknesses
Accommodations and modifications of standardized instruments
Speech and language samples
Audiology assessments
Treatment Considerations
Selecting language of intervention based on unique factors for each individual
Selecting goals based on either a bilingual (targets error patterns common to both languages) or cross-linguistic approach (targets error patterns unique to each language), or some combination of both
Source: (ASHA, 2013)

2.2 Other Research on Speech and Language Assessment for Bilingual Children

One of the most significant challenges that SLPs face is distinguishing language impairment from language difference in bilingual children. Bilingual students are overrepresented in special education programs in elementary schools, likely due to increased

literacy demands starting in the third grade (Samson & Lesaux, 2009). There are very few standardized assessments of speech and language skills that have been developed for bilingual children: McLeod and Verdon (2014) identified only five different Spanish-English bilingual speech and language assessments, and only one (the Bilingual Spanish-English Assessment [BESA]) had strong psychometric properties. Furthermore, the norms that exist for standardized instruments in English cannot be applied to bilingual ELLs (ASHA, 2013). Finally, traditional, knowledge-based measures of language provide information only on what is known in a given language at a particular time, which may not be valid for bilingual ELLs due to differing levels of previous language experience (Kohnert, 2012).

Researchers have attempted to identify specific measures and/or methods of language assessment that more accurately discriminate typically developing bilingual Spanish-English children from those with PLI. Restrepo (1998) identified two procedural contexts—parental interview and spontaneous language-form analysis—that yielded four measures that successfully discriminated Spanish-speaking children with typical language development from those with PLI. Dynamic assessment (DA), an assessment method that utilizes a pretest-teaching-posttest method instead of a one-time evaluation, has also been suggested as an effective way to distinguish between bilingual children with PLI and those with a language difference (Kapantzoglou, Restrepo, & Thompson, 2012; ASHA, 2013). Kohnert (2012) suggested that true communication disorders will express themselves in both Spanish and English for bilingual children, and so the ability to perform assessments of both L1 (Spanish) and L2 (English) is important to gain a comprehensive understanding of a child's language skills.

Researchers have addressed a variety of individual topics regarding service delivery for bilingual Spanish-English children. A study of 33 children between the ages of 3:1 (years:

months) and 3:10 showed that bilingual children demonstrated similar or even expanded phonological inventories than monolingual peers, and though exposure to both English and Spanish may have resulted in a higher English phoneme error rate, bilingual children achieved similar improvement in phonological performance to their monolingual peers over time (Gildersleeve-Neumann, Kester, Davis, & Peña, 2008). Cooperson, Bedore, and Peña (2013) found within- and between-language correlations between phonological performance and performance on measures of morphosyntax among 186 bilingual Spanish-English children. They also found that children with more accurate phonological performance also produced grammatical structures of low phonetic salience (e.g. past tense *-ed* in English, adjective agreement in Spanish) with greater accuracy, indicating a possible negative correlation between phonological accuracy and language impairment. Another study of nine typically developing bilingual children aged 2:4-8:2 found that such children may demonstrate an inflated number of phonological errors in English due to allophonic variations that are common in their dialect of Spanish (Fabiano-Smith, L., Oglivie, T., Maiefski, O., & Schertz, J., 2015).

According to Kohnert (2012), proficiency in any language involves both the acquisition of knowledge (consistent form-function mappings) and the efficient use of this known information (processing). A series of cross-sectional and longitudinal studies of 100 sequential bilingual Spanish-English children that measured performance on lexical-semantic processing tasks of varying complexity in single- and mixed-language contexts revealed positive changes for both L1 (Spanish) and L2 (English) with increased age, a considerable degree of variability within and across groups, and a shift in language dominance from L1 to L2 with increased age (Kohnert, 2012). Both monolingual and bilingual children with PLI have demonstrated lower performance on processing-dependent language measures, such as performance on nonword-

repetition (NWR) tasks and semantic depth score, than their typically developing peers (Sheng, Peña, Bedore, & Fiestas, 2012; Kapantzoglou, Restrepo, & Thompson, 2012; Guiberson & Rodriguez, 2013; Windsor, Kohnert, Lobitz, & Pham, 2010). Results from these studies suggest that language-based processing tasks should be used as an integral part of the assessment battery for bilingual Spanish-English children.

2.3 Research on Speech and Language Intervention for Bilingual Children

Though there are a considerable number of studies about assessment of bilingual children, few studies have investigated language intervention practices with this population. Most research to date has provided theoretical frameworks to guide SLPs, but very few studies have reported on the efficacy of particular intervention practices with bilingual children. Research overwhelmingly indicates that bilingual exposure does not hinder language development and that, rather, intervention that uses both L1 and L2 may be more effective than monolingual intervention (Thordardottir, 2010). ASHA (2013) encourages SLPs to select goals and choose intervention tasks based on the language most appropriate for the individual child's needs, based on either a bilingual approach—one that targets errors and linguistic skills common to both languages—or a cross-linguistic approach—one that targets specific linguistic skills in each language independently. Thordardottir (2010) adds that, though conventional thought recommends intervention to be provided in a child's dominant language, SLPs should plan intervention tasks that incorporate both languages since bilingual children often use different languages in different contexts (L1 in the home, L2 at school); functional communication in all settings should be the primary focus of language intervention.

Pham, Ebert, and Kohnert (2015) invested gains in language and cognitive abilities for 48 bilingual children who had been diagnosed with moderate-severe PLI after receiving six weeks

of either English only, bilingual Spanish-English, or nonlinguistic cognitive processing treatment, and also did a follow-up assessment of the same abilities three months after treatment was discontinued. Participants in all three treatment conditions showed improvement or maintenance of the measured abilities even after therapy had been discontinued, and children who received English only or bilingual treatment displayed significant improvement in English language measures, with Spanish language skills remaining intact as well (Pham, Ebert, & Kohnert, 2015). It is notable that the children in this study who participated in the bilingual treatment program achieved similar gains in English language measures as those who participated in the English only treatment program, as it provides empirical support for the efficacy of intervention that targets both languages. Pham, Ebert, and Kohnert's (2015) study, however, is one of very few studies to date that have provided empirical data to support theories or frameworks for speech-language intervention with bilingual children. It is particularly difficult, therefore, for the field of speech-language pathology to identify any coherent list of best practices for bilingual Spanish-English children.

2.3 The Present Study: Purpose and Rationale

Researchers have also performed studies that assess the level of training and continuing education that SLPs receive in service delivery for bilingual children. Hammer, Detwiler, Detwiler, Blood, and Qualls (2004) administered a questionnaire to professional SLPs that examined the amount of training on bilingual and multicultural issues that they had received in their coursework, specific topics covered in this coursework, and level of confidence in working with Spanish-speaking children and their families. Hammer and her colleagues found that, in 2004, over one-third of SLPs had received no coursework related to bilingual and multicultural issues, and a very small minority of SLPs been received multiple lectures or courses on these

topics. About one-third of SLPs had received no training in technical issues related to service delivery for bilingual children, and almost half of SLPs had received no training on cultural competency. SLPs also reported low confidence levels when assessing and serving bilingual children whose L1 is Spanish, especially among monolingual SLPs (bilingual SLPs reported much higher confidence levels). In the more than 10 years since Hammer et al.'s study, the population of Spanish-speaking bilinguals in the United States has increased dramatically, especially in public schools, making it even more important that SLPs receive adequate training on bilingual and multicultural issues when they are students.

The present study seeks to update the findings of Hammer and her colleagues. The two primary research aims were 1) to determine if training for SLPs in bilingual service delivery has increased in the time since Hammer et al.'s study, and 2) to assess how currently practicing SLPs both value and implement various assessment and intervention strategies that show promise as possible best practices for bilingual Spanish-English children based on the current literature. These research aims were addressed through the administration of a survey to professional SLPs. It was hypothesized that SLPs would report being better trained both in areas concerning technical service delivery and cultural competence (fewer SLPs reporting receiving no coursework, more SLPs reporting multiple lectures and/or multiple courses). The hope was to find that undergraduate and graduate SLP-training programs have responded to the growing number of bilingual Spanish-English children on SLP caseloads by including more coursework on topics related to bilingual and multicultural issues. It was also hypothesized that SLPs will value the strategies listed on the survey more than they implemented them in their own practice. Only six percent of professional SLPs are listed as bilingual service providers (ASHA, 2016), and so though SLPs may have received training on bilingual service delivery issues, they may

lack the specific skills necessary to provide the services that have been recommended in the current literature.

3. Method

3.1 Design of Survey

The survey was built using the online software Qualtrics. It included four sections: 1) Demographic Information, 2) Pre-Service Training Received, 3) Actual Implementation of Recommended Practices, and 4) Perceived Value of Recommended Practices.

Section One (demographic information) asked respondents questions related to their status as professional SLPs, whether they identify themselves as bilingual service providers, the state in which they primarily practice, the type of facility at which they are primarily employed, and number of years that they have been practicing as a speech-language pathologist.

Section Two (pre-service training) included questions taken directly from Hammer et al.'s (2004) study that asked respondents how much coursework they received on multicultural/bilingual service delivery issues as well as which specific topics were covered in that coursework (including both technical service delivery and cultural topics). Possible answers on the amount of coursework ranged from "none" to "more than one course that focused on these issues", and all possible answers in this section were taken directly from Hammer et al.'s questionnaire as well, with a few exceptions. Hammer et al.'s survey included the item "How to work with interpreters" under topics on service delivery in their survey, but this item was not included in the present study, as the SLPs in Hammer et al.'s study consistently reported high levels of confidence working with interpreters despite the fact that only a very small percentage of them had received training in this area (Hammer et al., 2004). Therefore, working with interpreters may not be a skill that is relevant for pre-service training. The present study also

added two items to the technical service delivery topics: "Response to Intervention (RTI)" and "Choosing appropriate language of intervention". RTI was added to the list of items because it is mentioned as an early intervening service recommended by ASHA for bilingual children (see Table 1), and an item related to selection of appropriate language intervention was included because it is a topic discussed in ASHA's (2013) position statement, as well as being a relevant current topic in research (Thordardottir, 2010; Pham, Ebert, & Kohnert, 2015).

Only respondents who indicated that they had bilingual Spanish-English children on their caseloads completed the third and fourth sections (actual implementation and perceived value of recommended practices). The respondents were limited in this way in order to obtain a more accurate report of the discrepancies between perceived value and implementation of various practices; SLPs who had no bilingual children on their caseloads would likely have reported higher value than implementation precisely because they do not serve bilingual children in their practice. Respondents were asked how frequently they implemented various practices when working with bilingual Spanish-English children on a four-point likert scale (*1-Never/Very infrequently, 2-Somewhat infrequently, 3-Somewhat frequently, 4-Always/Very frequently*), and then were asked how much they valued the same practices on a four point likert scale (*1-None/Very little, 2-Little, 3-A moderate amount, 4-Highly*). Mean results for perceived value responses and actual implementation responses were calculated and compared to identify practices with high degrees of discrepancy.

3.2 Selection of Recommended Practices

Items listed for Sections Three and Four were included based on findings from the literature review (see above). Many items were also included based upon their presence in ASHA's (2013) position statement, which provides the most current and comprehensive official

list of recommended practices for SLPs working with bilingual clients. Table 3 shows all items included in Sections Three and Four of the survey, along with the study or studies that provided the rationale for their inclusion.

Table 3. Items included in Sections Three and Four of Survey and Research Rationales

Item	***Recommended in:***
Obtaining case history information about child	ASHA, 2013; Restrepo, 1998
Interviewing parents about child's language skills	ASHA, 2013; Restrepo, 1998
Eliciting and assessing language samples in English	ASHA, 2013; Kohnert, 2012; Thordardottir, 2010
Eliciting and assessing language samples in Spanish	ASHA, 2013; Kohnert, 2012; Thordardottir, 2010
Assessing phonological performance in English	Cooperson, Bedore, & Peña, 2013; Fabiano-Smith et al., 2015
Assessing phonological performance in Spanish	Cooperson, Bedore, & Peña, 2013; Fabiano-Smith et al., 2015; Gildersleeve et al., 2008
Use of English-based non-word repetition (NWR) tasks	Guiberson & Rodriguez, 2013; Kapantzoglou, Restrepo, & Thompson, 2012; Windsor, Kohnert, Lobitz, & Pham, 2010
Use of Spanish-based non-word repetition (NWR) tasks	Guiberson & Rodriguez, 2013; Kapantzoglou, Restrepo, & Thompson, 2012; Windsor, Kohnert, Lobitz, & Pham, 2010
Assessing performance on English morphemes	ASHA, 2013; Cooperson, Bedore, & Peña, 2013
Assessing performance on Spanish morphemes	ASHA, 2013; Cooperson, Bedore, & Peña, 2013
Using dynamic assessment model	ASHA, 2013; Kapantzoglou, Restrepo, & Thompson, 2012
Accommodation/Modification of standardized assessment instruments	ASHA, 2013
Determining appropriate language of intervention	ASHA, 2013; Thordardottir, 2010
Providing speech/language intervention tasks in English	Pham, Ebert, & Kohnert, 2015; Thordardottir, 2010
Providing speech/language intervention tasks in Spanish	Pham, Ebert, & Kohnert, 2015; Thordardottir

3.3 Participants and Demographics

Professional members of the Indiana Speech-Language and Hearing Association (ISHA) and professional members of ASHA's Language Learning and Education Special Interest Group

(SIG 01) were invited via email to complete the 15-question survey, which was administered and completed online. The survey remained open from March 18, 2016 until April 1, 2016. A total of 82 professional SLPs completed the survey. 10% of respondents indicated that they listed themselves as bilingual service providers (N = 8). The majority of respondents worked in schools (N = 55, 67%), while the rest worked in private practices (N = 14, 17%), health care facilities (N = 3, 4%), or other facilities (N = 10, 12%). Close to half of respondents primarily practiced in the state of Indiana (N = 40, 49%), and respondents outside of Indiana (N = 82, 51%) practiced in 21 different states. 59% of all respondents indicated that they have bilingual Spanish-English children on their caseloads (N = 48). By comparison, 55% of respondents from Indiana indicated that they have bilingual children on their caseloads (N = 22), while 62% of respondents from outside-Indiana indicated the same (N = 26).

4. Results

4.1 Amount of Pre-Service Training Received

Almost one-third of respondents indicated that they had received no training on bilingual or multicultural issues when they were students (Table 4). Respondents from Indiana indicated receiving no training with much greater frequency (45%) compared with respondents from outside Indiana (17%), and respondents from outside Indiana reported a greater amount of pre-service training in general. Respondents reported varying amounts of coursework on these topics. Only a very small amount of SLPs had received more than one course (2%).

Table 4. Pre-Service Training Received

Amount of Pre-Service Training	**All Respondents N = 82, (%)**	**IN Respondents N = 40, (%)**	**Outside-IN Respondents N = 42, (%)**
None	31	45	17
One or two lectures	29	28	32
Several lectures in one course	11	10	12
Many lectures included throughout many courses	17	10	24

One course devoted to these issues	10	8	12
More than one course that focused on these issues	2	0	5

Results on the amount of coursework that SLPs reported receiving on bilingual and multicultural topics did not vary greatly from Hammer et al.'s (2004) findings. About one-third of SLPs in the present study and in Hammer et al.'s study indicated receiving no pre-service training. More SLPs reported one to several lectures in one course in the present study (40%) compared to those Hammer et al.'s study (20%*), but less SLPs reported receiving one or more courses in the present study (12%) compared to those in Hammer et al.'s study (19%*).

4.2 Topics Covered in Pre-Service Training

In general, respondents from the present study reported that their coursework covered more of the listed topics than the participants in Hammer et al.'s (2004) study for both technical service delivery topics and cultural competencies (Table 5). Results were similar across populations (Indiana respondents and respondents from outside Indiana), with respondents from outside Indiana generally reporting more topics covered.

Table 5. Topics Covered in Pre-Service Training

Topics Covered in Pre-Service Coursework	**All Respondents, N = 70, (%)**	**IN Respondents N = 34, (%)**	**Outside-IN Respondents N = 36, (%)**
Technical Service Delivery Topics			
Defining language differences versus disorders	94	94	94
Bilingualism	40	26	53
Codeswitching	61	38	83
Normal processes of second language acquisition	44	32	56
Strategies for working with multicultural families	37	24	50
Dynamic assessment	41	29	53
Response to intervention	21	18	25
Use of standardized tests with bilingual populations	51	41	61
Approaches to assessing bilingual children	41	32	50
Choosing appropriate language of intervention	30	21	39

Cultural Competency Topics			
Customs/beliefs of other cultures	59	58	59
Religions of different cultural groups	26	17	32
Communication styles of other cultures	98	100	97
Cultural views of education	38	21	49
Cultural views of disabilities/illness	54	38	65
Medical practices of different cultural groups	21	17	24

4.3 Report of Technical Service Delivery Topics

SLPs in the present study indicated that they had received pre-service training on a wider range of technical service delivery topics than the participants of Hammer et al.'s study. Particular topics that were more frequently covered included *defining language differences versus disorders, codeswitching, dynamic assessment, use of standardized tests with bilingual populations,* and *approaches to assessing bilingual children* (Table 6).

4.4 Report of Cultural Competency Topics

SLPs in the present study also generally indicated that they had received pre-service training on a wider range of cultural competency topics than those in Hammer et al.'s study. Particular topics covered with greater frequency included *customs/beliefs of other cultures, communication styles of other cultures,* and *cultural views of disabilities/illness* (Table 6).

Table 6. Comparison between Present Study and Hammer et al. (2004): Selected Topics Covered

Topics Covered in Pre-Service Coursework	**All Respondents, Present Study, N = 70, (%)**	**All Respondents, Hammer et al. (2004), N = 182, (%)***
Technical Service Delivery Topics		
Defining language differences versus disorders	94	65
Codeswitching	61	34
Dynamic assessment	41	23
Use of standardized tests with bilingual populations	51	26
Approaches to assessing bilingual children	41	26
Cultural Competency Topics		
Customs/beliefs of other cultures	59	33
Communication styles of other cultures	98	34
Cultural views of disabilities/illness	54	24

4.5 Perceived Value vs. Actual Implementation of Recommended Practices

Generally, respondents valued the recommended practices related to service delivery for bilingual Spanish-English children more highly than they implemented them. Items for which respondents indicated the greatest discrepancy between value and implementation included:

- *Eliciting and assessing language samples in Spanish*
- *Assessing phonological performance in Spanish*
- *Assessing performance on Spanish morphemes*
- *Using dynamic assessment model*
- *Accommodation/Modification of standardized assessment instruments*
- *Determining appropriate language of intervention*
- *Providing speech/language intervention tasks in Spanish*

Tables 7-9 display detailed data on mean responses of respondent ratings of perceived value and actual implementation for each item in this section of the survey. Table 7 displays data from all respondents, Table 8 displays data from respondents exclusively from Indiana, and Table 9 displays data from respondents from all states other than Indiana.

Table 7. All Respondent Data (N = 45): Perceived Value vs. Actual Implementation

Recommended Practice	**Perceived Value, *M* (S.D.)**	**Actual Implementation, *M* (S.D.)**
Obtaining case history information about child	3.79 (0.61)	3.73 (0.69)
Interviewing parents about child's language skills	3.64 (0.62)	3.27 (0.94)
Eliciting and assessing language samples in English	3.78 (0.47)	3.49 (0.76)
Eliciting and assessing language samples in Spanish	3.51 (0.78)	2.58 (1.29)
Assessing phonological performance in English	3.51 (0.71)	3.33 (0.95)
Assessing phonological performance in Spanish	3.24 (0.89)	2.31 (1.24)
Use of English-based non-word repetition (NWR) tasks	1.98 (1.05)	1.36 (0.77)
Use of Spanish-based non-word repetition (NWR) tasks	1.80 (0.99)	1.11 (0.38)
Assessing performance on English morphemes	3.23 (0.89)	3.09 (0.95)
Assessing performance on Spanish morphemes	3.03 (0.95)	2.24 (1.17)
Using dynamic assessment model	3.28 (0.96)	2.43 (1.15)
Accommodation/Modification of standardized assessment instruments	3.15 (0.80)	2.64 (1.07)
Determining appropriate language of intervention	3.48 (0.85)	2.89 (1.17)
Providing speech/language intervention tasks in English	3.70 (0.52)	3.80 (0.41)
Providing speech/language intervention tasks in Spanish	3.03 (0.97)	1.82 (1.04)

Table 8. Indiana Respondent Data (N = 21): Perceived Value vs. Actual Implementation

Recommended Practice	**Perceived Value, *M* (S.D.)**	**Actual Implementation, *M* (S.D.)**
Obtaining case history information about child	3.86 (0.48)	3.67 (0.91)
Interviewing parents about child's language skills	3.57 (0.68)	3.19 (0.98)
Eliciting and assessing language samples in English	3.85 (0.37)	3.48 (0.68)
Eliciting and assessing language samples in Spanish	3.60 (0.68)	2.43 (1.29)
Assessing phonological performance in English	3.55 (0.69)	3.43 (0.87)
Assessing phonological performance in Spanish	3.25 (0.85)	2.00 (1.10)
Use of English-based non-word repetition (NWR) tasks	2.15 (1.09)	1.33 (0.80)
Use of Spanish-based non-word repetition (NWR) tasks	1.95 (1.10)	1.05 (0.22)
Assessing performance on English morphemes	3.15 (0.99)	2.95 (1.02)
Assessing performance on Spanish morphemes	3.03 (0.95)	1.81 (1.03)
Using dynamic assessment model	3.15 (1.04)	2.25 (1.21)
Accommodation/Modification of standardized assessment instruments	2.85 (0.93)	2.24 (1.00)
Determining appropriate language of intervention	3.55 (0.76)	2.76 (1.14)
Providing speech/language intervention tasks in English	3.80 (0.41)	3.76 (0.44)
Providing speech/language intervention tasks in Spanish	3.10 (1.07)	1.71 (0.96)

Table 9. Non-Indiana Respondent Data (N = 24): Perceived Value vs. Actual Implementation

Recommended Practice	**Perceived Value, *M* (S.D.)**	**Actual Implementation, *M* (S.D.)**
Obtaining case history information about child	3.71 (0.72)	3.79 (0.41)
Interviewing parents about child's language skills	3.71 (0.56)	3.33 (0.92)
Eliciting and assessing language samples in English	3.71 (0.56)	3.50 (0.83)
Eliciting and assessing language samples in Spanish	3.43 (0.87)	2.71 (1.30)
Assessing phonological performance in English	3.48 (0.75)	3.25 (1.03)
Assessing phonological performance in Spanish	3.24 (0.94)	2.58 (1.32)
Use of English-based non-word repetition (NWR) tasks	1.80 (1.01)	1.38 (0.77)
Use of Spanish-based non-word repetition (NWR) tasks	1.65 (0.88)	1.17 (0.48)
Assessing performance on English morphemes	3.30 (0.80)	3.21 (0.88)
Assessing performance on Spanish morphemes	3.20 (0.95)	2.63 (1.17)
Using dynamic assessment model	3.40 (0.88)	2.58 (1.10)
Accommodation/Modification of standardized assessment instruments	3.45 (0.60)	3.00 (1.02)
Determining appropriate language of intervention	3.40 (0.94)	3.00 (1.22)
Providing speech/language intervention tasks in English	3.60 (0.60)	3.83 (0.39)
Providing speech/language intervention tasks in Spanish	2.95 (0.89)	1.91 (1.12)

* All percentages from Hammer et al. (2004) used for comparison were calculated by finding the number of participants who indicated various amounts of pre-service training received and/or amount of topics covered from each sub-population (non-diverse rural, non-diverse urban, diverse urban) and taking the arithmetic mean of the three subpopulations.

5. Discussion

5.1 Presence of Bilingual Children on Caseloads

An interesting finding from the present study was the percentage of respondents who indicated that they had bilingual Spanish-English children on their caseloads: 59% of all respondents (N = 48), including 55% of respondents from Indiana (N = 22) and 62% of respondents from all other states (N = 26). It was not surprising that the overall percentage was so high, especially considering the rapid growth of bilinguals in the United States, and particularly of Spanish-English bilinguals in public schools (United States Commerce Department, 2013; MPI, 2015b). In fact, 65% of respondents who work in schools (N = 36) indicated that they have bilingual children on their caseloads. What was surprising is that over half of respondents from Indiana, considered a less-diverse state in general, reported having

bilingual children on their caseloads. The findings related to demographics in the present study emphasize the relevance of the topic of service delivery for bilinguals in speech pathology, not just in places with populations of greater cultural and linguistic diversity (California, American Southwest, Florida, etc.) but in all parts of the country. The lower amount of pre-service training reported by Indiana SLPs (Table 4) and greater discrepancies between perceived value and implementation of recommended practices (Tables 8 and 9) in comparison to SLPs from other states may indicate that bilingual and multicultural topics are given particularly low priority in Indiana SLP-training programs. SLP caseloads as reported in the present study, however, suggest that SLPs in Indiana need to be trained on bilingual and multicultural issues.

5.2 Amount of Pre-Service Training/Topics Covered in Pre-Service Training

Results of reported pre-service training related to bilingual and multicultural issues both confirmed and refuted the hypothesis of the present study that the amount of pre-service training would be greater and would cover more topics than in Hammer et al.'s study. In general, one-third of respondents still indicated that they had received no coursework on bilingual topics as students. Respondents from Indiana reported particularly low amounts of pre-service training: 45% (N = 18) indicated receiving no training. On the other hand, respondents from outside Indiana reported a greater amount of pre-service training: only 17% (N = 7) indicated receiving no training. The high amount of respondents from Indiana compared with other states certainly influenced the results of all respondents and may account for the lack of change in training reported from Hammer et al.'s study until the present day.

Another factor that could have influenced this lack of change was the age of participants. 59% (N = 48) of all respondents in the present study had been practicing as professional SLPs for over 16 years at the time of the survey administration (March-April 2016), with the majority

of respondents (22%, N = 18) possessing more than 30 years of professional experience. Twelve years have passed between Hammer et al.'s (2004) study and the present study, and so it may be possible that the respondent population in the present study does not reflect a shift that may have occurred or is occurring in SLP-training programs to include more coursework in bilingual and multicultural topics.

Finally, 15%* of participants in Hammer et al.'s (2004) study responded with "other/unable to recall" when asked about the amount of pre-service training they received. This was not a possible item in the present study, and so it is possible that some respondents reported an inaccurate amount of pre-service training because they were unsure or unable to recall.

There was a greater number of respondents who reported receiving one to several lectures within one or multiple courses in the present study (40%) than in Hammer et al.'s study (20%*). This suggests that, though there has not been a substantial increase in the number of courses devoted to bilingual/multicultural topics, speech-language pathology programs are emphasizing these topics more in already-existing courses within their curricula. This explanation is supported by the finding that respondents in the present study reported that their coursework covered a greater amount of specific topics than participants in Hammer et al.'s study (see Tables 5 and 6). These results are promising, as all topics that were covered with greater frequency in the present study are critical issues that are being addressed in the current literature related to bilingual issues (ASHA, 2013; Kapantzoglou, Restrepo, & Thompson, 2012; McLeod & Verdon, 2014; Thordardottir, 2010).

5.3 Perceived Value and Actual Implementation of Recommended Practices

The results confirmed the hypothesis of the present study, namely, that SLPs would report that they valued recommended practices more they implemented them. This was true for

every item on the recommended practices section except for *Providing speech/language intervention tasks in English*, which had a slightly higher mean for implementation (3.80) than it did for perceived value (3.70). There are a number of factors that may help to explain the general trend of respondents valuing recommended practices more than they implement them.

The discrepancy between value and implementation may be a consequence of the respondents' lack of pre-service training. For SLPs who have not received any coursework on bilingual and multicultural issues (31% of the SLPs included in the present study), having bilingual Spanish-English children on their caseloads may present a particular challenge. They may understand that their typical, standard assessment protocol may not be valid for these children, but they may not be aware of how to use a method that would be more valid (e.g. dynamic assessment rather than static, one-time assessment). A considerable number of respondents indicated receiving pre-service training through a handful of lectures, rather than in an entire course devoted to these topics, and so it is also likely that many respondents had heard of the recommended practices listed in the survey and were aware that they are recommended, but their limited exposure to these practices left them feeling unprepared to actually use them as professionals.

Among the seven items with the greatest discrepancy between value and implementation mentioned above, four of them were practices that required some level of proficiency with the Spanish language: *Eliciting and assessing language samples in Spanish* (M of perceived value, M of actual implementation - all respondents: 3.51, 2.58), *Assessing phonological performance in Spanish* (3.24, 2.31), *Assessing performance on Spanish morphemes* (3.03, 2.24), and *Providing speech/language intervention tasks in Spanish* (3.03, 1.82). The discrepancy on these items can be attributed to the relative paucity of published language assessment instruments

available in Spanish (McLeod & Verdon, 2014), as well as to a lack of knowledge/proficiency of the Spanish language among SLPs. Respondents who listed themselves as bilingual service providers reported much lower degrees of discrepancy, if any at all, compared with all respondents (Table 10) on these same four measures, suggesting that a lack of proficiency in Spanish may keep SLPs from providing services they want to provide and/or that they feel would be helpful for the bilingual children on their caseloads. SLPs who are not proficient in Spanish may want to seek the help of bilingual paraprofessionals and co-workers to serve as translators and seek continuing education opportunities to become more familiar with the Spanish language and bilingualism in general in order to overcome the gap between the type of services they want to provide and the services they actually do provide for bilingual Spanish-English clients.

Table 10. Bilingual Service Provider Data (N = 7): Perceived Value vs. Actual Implementation

Recommended Practice	**Perceived Value, *M* (S.D.)**	**Actual Implementation, *M* (S.D.)**
Eliciting and assessing language samples in Spanish	3.43 (1.13)	3.29 (1.11)
Assessing phonological performance in Spanish	3.00 (1.33)	3.00 (1.41)
Assessing performance on Spanish morphemes	2.71 (1.38)	3.00 (1.15)
Providing speech/language intervention tasks in Spanish	2.86 (0.90)	2.86 (1.07)

Respondents reported very low ratings of both perceived value and actual implementation for two items: *Use of English-based non-word repetition (NWR) tasks* (1.98, 1.36) and *Use of Spanish-based non-word repetition (NWR) tasks* (1.80, 1.11). These were the only two measures to receive mean ratings below 2 for either perceived value or actual implementation (see Table 7). These low figures may be attributed to the fact that NWR tasks are often included in subtests of more comprehensive language assessment instruments, and that respondents did not see value in administering such tasks by themselves. Another factor could be the relative youth of NWR

tasks in speech-language pathology research literature. Dollaghan and Campbell (1998) were the first to report the clinical effectiveness of NWR tasks in distinguishing between children with PLI and children with typically developing language. There have been few studies examining the assessment effectiveness of NWR tasks specifically for bilingual children, although existing research has made promising findings (Guiberson & Rodriguez, 2013).

5.4 Limitations/Suggestions for Future Research

The main limitation for the present study is that it included a relatively small population of respondents (N = 82). This is less than half of the participants that were included in Hammer et al.'s study (N = 182). Administration of similar surveys in future research that include a larger population of respondents, especially from states outside of Indiana, could provide much to clarify the current state of pre-service training for SLPs in the United States, as well as provide a more comprehensive and accurate depiction of how SLPs provide services for bilingual Spanish-English children.

More specifically, the present study included a very small amount of bilingual service providers (N = 8, only 7 of which had bilingual children on their caseloads), and so it is difficult to make true comparisons of this subpopulation to the other respondents in the present study. The results obtained from the bilingual service providers in this study are promising; they demonstrated much lower rates of discrepancy between perceived value of recommended practices and implementation of the same. Since ASHA has no formal certification process for bilingual service providers (ASHA, 2013), it may be helpful for future research to examine populations of SLPs who identify themselves as bilingual service providers in order to gain more information about the assessment and intervention methods that they implement. Such research may help the field as research continues to move toward best practices with bilingual clients, and

it could also provide a basis for the development of a formalized certification process for bilingual SLPs.

Another limitation of the present study is that, although it examined the pre-service training obtained by SLPs, it did not examine continuing education opportunities that respondents sought after becoming professionals. Hammer et al. (2004) included extensive data on participants' continuing education, including the amount, type (conferences, online modules, textbooks, journal articles, etc.), and topics either covered or desired in future continuing education. The present study chose to focus on the pre-service training that SLPs received on bilingual and multicultural topics, but continuing education is just as important to examine, especially in an area of research that is growing rapidly. Future studies should examine SLPs' degree of continuing education to report on whether it has increased in recent years.

Data obtained regarding the specific topics covered in coursework was not consistent in terms of the amount of respondents that completed this section of the survey. Though 82 respondents provided information about the amount of coursework they had received as students, only 70 respondents provided information about which specific topics were treated in this coursework. Because of this, the connection between the amount of coursework and the range of topics covered is unclear in the present study. Future research should seek more consistency in responses between these two aspects.

Finally, and perhaps most importantly, the lack of an established list of best practices for working with bilingual children is a limitation for this study. Though the items included in the survey were derived from an ASHA practice portal document and various peer-reviewed studies, they are still a preliminary list and are by no means to be viewed as comprehensive or official. This points to what is the greatest future research need: it is vital that future research address the

efficacy of various assessment and intervention methods and practices that have shown promise in existing research about bilingual children. The field of speech-language pathology is moving toward defining best practices in this area (Thordardottir, 2010), but it is vital that this research continues.

6. Conclusion

The present study sought to provide a review of the current literature regarding service delivery for bilingual Spanish-English children. It also sought to report on how pre-service training has increased in response to the growing presence of bilinguals in the United States and in public schools. Finally, it sought to provide information on how currently practicing SLPs value and implement various relevant practices that are recommended in the current literature.

It was hypothesized that pre-service would have increased since Hammer et al.'s (2004) study, and the hypothesis was both verified and refuted by mixed results. A similar percentage of SLPs in the present study reported receiving no pre-service coursework on bilingual/multicultural topics as in the study from 2004, and an even greater percentage of respondents from Indiana reported receiving no pre-service coursework. However, a much greater percentage of SLPs reported receiving between one and several lectures in one or more courses in the present study than in the 2004 study. SLPs in the present study also reported more extensive coverage of bilingual/multicultural topics, although this data included an inconsistent number of respondents. Nevertheless, these last two findings support the hypothesis and appear to demonstrate a general growth in pre-service training on bilingual/multicultural topics.

The results also confirmed the hypothesis that SLPs would value recommended practices more highly than they implemented them in their service delivery. There are many factors that likely influenced this discrepancy, but worthy of note are great discrepancies on items that

required proficiency in the Spanish language, as well as the low number of bilingual service providers included in the respondent population. SLPs without proficiency in Spanish may need to utilize the help of bilingual paraprofessionals and other support staff, as well as seek continuing education opportunities, in order to provide optimal services for bilingual children on their caseloads.

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